Note
Before using this information and the product it supports, read the information in “Notices” on page 307.
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About this PDF

This PDF provides administration and usage information for Business Application Services (BAS). BAS is a component of the CICSPlex SM element of CICS Transaction Server for z/OS. It is intended for system programmers who are responsible for managing CICS and CICSPlex SM.

For details of the terms and notation used, see Conventions and terminology used in the CICS documentation in IBM Knowledge Center.

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Chapter 1. Administering CICSPlex SM

After you have configured your CICSPlex® SM environment, you can use the CICS Explorer® or Web User Interface to manage the environment.

About this task
Both CICS Explorer and the Web User Interface provide views to work with the CICSplices that you have defined. CICS also provides batch tools to manage the definitions in the data repository.

Administering CICSPlex SM

After you have configured your CICSPlex SM environment, you can use the CICS Explorer or Web User Interface to manage the environment.

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Setting the CMAS context, context and scope

You can set the context, CMAS context and scope to be used when you navigate from the current menu in the selection criteria area of a menu and the selection criteria and refresh area of a view.

To change one of these values, overtype the required field and select the Set button.

Either the context or the CMAS context is used for all operations. These terms are used as follows:

• Context
  This is the CICSplex name and is used for almost all views.

• CMAS context
  This is the CMAS name. This is used only when you are viewing CMAS level configuration data such as CMAS status and the CICSplices connected to a CMAS.

• Scope
  This is a CICSplex, CICS group MAS or logical scope name. The scope is a subset of the context, and limits the effects of CICSPlex SM commands to particular CICS systems or resources. If the CMAS context is being used, the scope is ignored. The scope is only used for certain resource types.

Accessing Web User Interface administration views

To access CICSPlex SM administration views from the Web User Interface main menu, click Administration views.

Administration views are divided into:

• General views, which include views to manage CICSPlex configuration and topology
• Real time analysis views, which include views to monitor system availability and MAS resources
• CICS resource definitions using Business Application Services (BAS), which includes views to manage all types of CICS and CICSPlex SM resources.

Using the action buttons

Action buttons on the WUI views allow you to perform actions such as create, update or remove. Available actions for a particular view are displayed as buttons at the bottom of the view's work area.

To use an action button from an open view:
1. Optionally, select the record or records on which you intend to apply the action by selecting one or more record check boxes on the left of the work area, or by using the Select all button.

2. Click the required action button. This displays one or a succession of confirmation panels. The confirmation panel allows you to confirm or cancel the action for each selected resource, and in some cases contain additional options.

3. Complete each confirmation panel by selecting the required button or in some cases by entering parameters, selecting check boxes or selecting radio buttons.

The action is processed and the view is redisplayed showing the results of the action. If the action competed successfully, message EYUVC1230I is displayed in the message area at the top of the work area. If the action is not successful, one or more error messages are displayed.

**Actions in administration views**

There are several common types of actions that you can use with the administration views.

**Create**

creates a new definition and adds it to the data repository. An administration definition name can be 1 to 8 characters in length. The name can contain alphabetic, numeric, or national characters. However, the first character must be alphabetic.

**Add to ...**

adds an association between two definitions. The resulting confirmation panel prompts you to identify the other definition with which you want to create an association. Adding an association creates a relationship between the definitions in the data repository. Associations can be added between definitions and groups, between groups and specifications, and between specifications and CICS systems.

**Map**

To display a visual map of related definitions in the data repository, click Map.

**Remove**

removes a definition or an association between two definitions from the data repository.

**Update**

updates a definition in the data repository. The resulting panel is an editable detail view of a selected resource.

All of these actions affect the contents of the data repository and the changes are applied immediately. However most of these changes to the data repository have no effect on CICS systems that are currently active. These changes affect a CICS system the next time the CICS system is restarted.

**Note:**

1. When you use the Time period definitions (EYUSTARTPERIODDEF) view to update definitions, the changes affect both the data repository and currently active CICS systems.

2. Changes to a currently running MAS are not included in the data repository.

3. All of these actions can also be performed using the batched repository-update facility described in “The batched repository-update facility (BATCHREP)” on page 12.

**Batch tools for managing data repository definitions**

CICSPlex SM provides batch tools for managing the data repository.

The data repository associated with each CMAS contains the definitions that establish your CICSPlex SM environment. These definitions are stored as individual records. You can create and maintain these definitions by using the WUI views described in Configuring CICSPlex SM. However, if you have a large volume of definitions to update, for example if you are moving an application from one CMAS to another, or if there is a large element of repetition in your management tasks, it is easier to use one of the batch tools to do the job. These allow you to create and update definitions in the data repository and import and export data repository definitions including CMAS to CMAS link definitions from one CMAS to another. Two batch tools are provided:
The EYU9XDBT CICSPlex SM definition utility

This is an easy-to-use REXX tool using simplified terminology, predefined default information, and filtering to simplify complex management tasks. It also has enhanced debugging facilities. It is limited to data repositories at the same release level as CICSPlex SM. EYU9XDBT is used during installation to set up your initial CICSPlex SM environment. It is supplied with comprehensive sample JCL.

The batched repository-update facility (BATCHREP)

With this tool you can perform batched update tasks by creating and editing an input file but it does not include the predefined information or samples of EYU9XDBT. It does enable you to import definitions from CMASs at earlier release levels and does not require that you have a REXX environment. You can submit BATCHREP jobs either using the CICSPlex SM batched repository-update utility, the WUI, or the CICSPlex SM API.

You cannot use either of these tools to create a CMAS.

The EYU9XDBT CICSPlex SM definition utility

The EYU9XDBT CICSPlex SM definition utility uses the CICSPlex SM API to specify the required CICSpex names in some simple parameters. The utility sets up the definitions for you. Unlike the BATCHREP utility, you do not manually edit an input file.

You can use this utility to perform all CMAS and CICSpex definition activities after the basic CMAS environment has been established. These activities include:

• Defining CICS regions, CICS groups, and CICSpexes to a CMAS
• Removing CICS regions, CICS groups, and CICSpexes from a CMAS
• Adding CICS regions to CICS groups
• Removing CICS regions from CICS groups
• Creating CMAS to CMAS link definitions
• Importing, printing, or exporting CICSPlex SM objects defined to CMAS or CICSpex contexts.

The following samples are provided:

EYUJXBT0
Contains annotated EYU9XDBT JCL syntax for use as a quick reference.

EYUJXBT1
Contains sample JCL for invoking EYU9XDBT and defining a CICSpex, a CICS system group, and a CICS system definition.

EYUJXBT2
Contains sample JCL for invoking EYU9XBTP and creating a CMAS-to-CMAS link definition for CMASs that are on the same MVS image and running at the same CICS TS release level.

EYUJXBT3
Contains sample JCL for invoking EYU9XBTP and creating a CMAS-to-CMAS link definition for CMASs on different MVS images setting the context to the first CMAS name and importing the link to the second CMAS.

EYUJXBT4
Contains sample JCL for invoking EYU9XBTP and creating a CMAS-to-CMAS link definition for CMASs on different MVS images setting the context to the second CMAS name and importing the link to the first CMAS.

EYU9XDBT utility commands

You can use a number of commands in the EYU9XDBT CICSPlex SM definition utility command stream.

EYU9XDBT reads and processes all commands in the input stream sequentially. Specify the commands in the correct sequence, with commands such as OPTION DUPREC and OPTION FEEDBACK preceding the commands to which they relate and operate on. For example, OPTION DUPREC precedes the IMPORT command on which you want it to operate.
Comments
You can include comments in the EYU9XDBT command stream. An asterisk in column 1 and a blank in column 2 indicates a comment.

Continuation
A hyphen (-) indicates continuation. A continuation character is supported on the DEFINE and REMOVE commands. For example, the DEFINE REGION command has a number of subparameters, which can be on separate lines, shown as follows:

```
DEFINE REGION region_name -
   APPLID region_applid -
   SYSID region_sysidnt
```

Commands
ADD TOGROUP groupname
Add regions or groups to a CICS group. You specify the object to be added on either a REGION or CICSGRP sub-parameter following the ADD command. For examples of the ADD command, see “Parameters used in EYUJXBT1” on page 7.

CONTEXT {cmas_name | CICSPlex_name}
Set the context for the commands that follow. For examples of the CONTEXT command, see “Parameters used in EYUJXBT1” on page 7.

DEFINE object_type object_name mandatory_identifiers*
Define the specified object, the type of which can be CICSPLEX, REGION, or CICSGRP. The object types, CICSPLEX, REGION, and CICSGRP, are synonyms for the CPLEXDEF, CSYSDEF, and CICSGRP definitions.

- To define a CICSPLEX, you must specify the object_type as CICSPLEX and specify the object_name; the object name is the 1- to 8-character alphanumeric name of the CICSplex that you are defining. Note that the first character of the object_name must be alphabetic. There are no other mandatory identifiers associated with the CICSPLEX object type. The command takes the following form:

  ```
  DEFINE CICSPLEX plexname
  ```

  This command creates a CPLEXDEF in the CICSPlex SM CMAS repository.

- To define a REGION, you must specify the object_type as REGION, the 1- to 8-character alphanumeric name of the CICS region that you are defining as the object_name, and the following mandatory identifiers: APPLID and SYSID. The command takes the following form:

  ```
  DEFINE REGION region_name -
   APPLID region_applid -
   SYSID region_sysidnt
  ```

  This command creates a CSYSDEF in the CICSPlex SM CMAS repository.

- To define a CICSGRP, you must specify the object_type as CICSGRP and specify the object_name; the object name is the 1- to 8-character alphanumeric name of the CICS system group that you are defining. Note that the first character of the object_name must be alphabetic. There are no other mandatory identifiers associated with the CICSGRP object type. The command takes the following form:

  ```
  DEFINE CICSGRP group_name
  ```

  This command creates a CICSGRP in the CICSPlex SM CMAS repository.

  For examples of the DEFINE command, see “Parameters used in EYUJXBT1” on page 7.

DELETE object_type object_name
Delete the specified object, the type of which can be one of CICSPLEX, REGION, or CICSGRP. You can specify an asterisk in object_name as a wildcard character.
**EXPORT DDname resource_type resource_id**

Write all the definitions of the specified type and identifier in the current context to the specified output file. For `resource_type`, specify in full one of the CICSPlex SM resource types or an asterisk, *, for all resource types. The valid resource types are any resources that are written to the CICSPlex SM data repository, including all BAS objects, WLM definitions, RTA definitions, topology definitions, or monitor definitions. BAS RESINGRP resource records can't be exported, however each BAS resource definition has an equivalent XXXINGRP resource record that can be exported. You can specify an asterisk in `resource_id` as a generic (wildcard) character. If you set both the resource type and the resource identifier to asterisks, EYU9XDBT exports all the definitions within the current context.

**Note:** Trailing blanks are treated as trailing wildcard characters, so **EXPORT** `DDname` exports all the definitions in the `DDname` context.

**IMPORT DDname resource_type resource_id**

Import into the repository, in the current context, all the definitions of the specified type and identifier from the input file defined on the named DD statement. For `resource_type`, specify in full one of the CICSPlex SM resource types or an asterisk for all resource types. The valid resource types are any resources that are written to the CICSPlex SM data repository, including all BAS objects, WLM definitions, RTA definitions, topology definitions, or monitor definitions. BAS RESINGRP resource records can't be imported, however each BAS resource definition has an equivalent XXXINGRP resource record that can be imported. You can specify an asterisk in `resource_id` as a wildcard character. If you set both the resource type and the resource identifier to asterisks, EYU9XDBT imports all the definitions it finds in the input data set.

Note the following rules for imported files:

- The input records should be 80 bytes records and the data will be truncated to 72 bytes.
- Double quotation marks (") in the import file are used as string delimiters. Therefore, if you want to include a double quotation mark character in the input file, you must use a consecutive pair of double quotation marks in the text string. For example the following string in the import file, "double""quote""example" becomes double"quote"example when the file is imported into the CICSPlex SM object.
- Continuation lines are used in import files to represent lines that would otherwise exceed the maximum length. The following example uses the program definition of a JVM class, which is represented as a 255 byte string, to show how continuation lines are represented in an import file:

```
PROGDEF_JVMCLASS = "AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA";
PROGDEF_JVMCLASS = PROGDEF._JVMCLASS || "AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA";
PROGDEF_JVMCLASS = PROGDEF._JVMCLASS || "BBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB
• **ABORT**: If there is duplication of the name of an object being defined and the name of an existing repository definition when processing a DEFINE or IMPORT command, the duplicate name being defined or imported is skipped and the data repository is not changed. The ABORT option is treated as an unrecoverable error: EYU9XDBT writes a message to the job log and raises return code 12. The job is stopped immediately.

• **REJECT**: If there is duplication of the name of an object being defined and the name of an existing repository definition when processing a DEFINE or IMPORT command, the duplicate name being defined or imported is skipped and the data repository is not changed. The REJECT option is handled as an error and EYU9XDBT writes a message to the job log. EYU9XDBT raises return code 8 for a REJECT error. REJECT is the default option.

• **SKIP**: If the name of an object being defined is the same as the name of an existing repository definition when processing a DEFINE or IMPORT command, the new definition is skipped, and the data repository is not changed. This is handled as normal (return code 0).

• **UPDATE**: If there is duplication of the name of an object being defined and the name of an existing repository definition when processing a DEFINE or IMPORT command, the existing definition is updated with the attributes of the record being defined or imported. If the existing definition cannot be updated by modifying specific attributes, it is deleted and recreated from the DEFINE or IMPORT command. This action is handled as normal (return code 0).

**Note**: When importing CPLXCMAS records that associate a CICSplex name to the Maintenance Point CMAS in an **OPTION DUPREC UPDATE** scenario, the command response will always be **Record skipped**. One CPLXCMAS record is created implicitly whenever a CPLEXDEF record is imported to a CMAS. These records may only be removed implicitly when their corresponding CPLEXDEF records are deleted.

**FEEDBACK {QUIET | VERBOSE}**

FEEDBACK specifies how EYU9XDBT handles exception condition reporting if an error is returned from the CICSPlex SM API. Permitted options are as follows:

• **QUIET**: EYU9XDBT writes only a basic EYU9XDBT message to the job log. QUIET is the default FEEDBACK option.

• **VERBOSE**: In addition to the standard message reporting response and reason codes, EYU9XDBT writes any associated CICSPlex SM feedback data to the destination specified on the SYSTSPRT DD statement.

**REPORT {FULL | SUMMARY}**

• **FULL**: This is the default option, and the current reporting state before this change. When the program processes a PRINT, IMPORT, EXPORT, or DELETE command for an EYUDREP object, all attributes of that object are printed in the report. For large data repositories, this report option can generate many thousands of line of data.

• **SUMMARY**: This restricts the printed resource table content to just the key field identifiers for the PRINT, IMPORT, EXPORT, and DELETE commands.

You can use the OPTION REPORT command consecutively in a command stream, so that some processes list all attribute data, and others just summarize attribute data. For example:

```
* Set the context to my CICSpex
CONTEXT myplex01
* Specify that duplicates are to be updated
OPTION DUPREC UPDATE
* Specify that I only want record identifiers printed
OPTION REPORT SUMMARY
* Now import my CSYSDEF records
IMPORT CPSMIO1 CSYSDEF * *
* Now do a detailed print of what was just imported ...
OPTION REPORT FULL
* ... and print all CSYSDEF details.
PRINT CSYSDEF * *
```
**PRINT resource_type resource_id**

Print definitions in the current context from CMAS repository. For `resource_type`, specify in full one of the CICSPlex SM resource types or an asterisk for all resource types. You can specify an asterisk in `resource_id` as a wildcard character. If you specify two asterisks for the resource type and resource identifier, EYU9XDBT prints all definitions within the current context.

**REMOVE FROMGROUP groupname**

Remove the specified object from the named group. You specify the object on either a REGION or CICSGRP sub-parameter following the REMOVE command.

**Data sets used by the EYU9XDBT utility**

To define CICSplesxes, CICS regions, and CICS groups, the EYU9XDBT CICSPlex SM definition utility uses some predefined information supplied in the SEYUPARM library.

The following DD statements reference this information:

**EYUCPDEF**

This DD statement references the member called EYUCPDEF, which provides default values in support of the DEFINE CICSPLEX command. You can modify the CPLEXDEF in it to suit your own installation requirements.

**EYUCSDEF**

This DD statement references the member called EYUCSDEF, which provides default values in support of the DEFINE REGION command. You can modify the CSYSDEF in it to suit your own installation requirements.

**EYUCSGRP**

This DD statement references the member called EYUCSGRP, which provides default values in support of the DEFINE CICSGRP command. You can modify the CSYSGRP in it to suit your own installation requirements.

**Parameters used in EYUJXBTP**

EYUJXBTP is a JCL procedure used by the samples EYUJXBT1, EYUJXBT2, EYUJXBT3 and EYUJXBT4 to invoke the EYU9XDBT program.

For descriptions of data sets used, see “Data sets used by the EYU9XDBT utility ” on page 7.

**Parameters used in EYUJXBT1**

The EYUJXBT1 JCL sample provides the initial definition of a CICSplesx, the association of the CICSplesx with a CMAS as the maintenance point, and the association, and grouping, of CICS systems with that CICSplesx.

The CMAS that owns the repository in which you are creating definitions must be active when you run the EYUJXBT1 job. Also, the EYUJXBT1 job must run in the same z/OS image as the CMAS. The EYUJXBT1 JCL does not have a data set definition (DD) statement for the repository because all access to the repository is through the CMAS, using the API.

EYUJXBT1 has the following parameters, which you edit to specify your own names:

**CONTEXT**

Sets the CICSPlex SM context in which the utility is to operate. Define the context as the CMAS only when you are defining a CICSPlex. For actions that operate on an existing CICSPlex, such as defining extra regions, or importing or exporting objects, set the context to the CICSPlex.

The EYUJXBT1 job uses this parameter twice. The first use is to enable the utility to locate and communicate with your CMAS, (see below for the second use). The format of the parameter to set the CMAS context is:

```
CONTEXT cmasname
```

where `cmasname` is the name of the CMAS that will be the maintenance point for the CICSPlex.
DEFINE CICSPLEX
Specifies the name of your CICSplex. When you define the CICSplex, the CMAS named on the CONTEXT parameter becomes the maintenance point for the CICSplex.

The format of this parameter is:

DEFINE CICSPLEX  plexname

Choose a 1- to 8-character name for your CICSplex, perhaps using a naming convention that allows you to define more than one CICSplex. For example:

- The first three letters might identify the location, such as HUR for Hursley
- The middle letters the type, such as TEST or PROD for test and production CICSplexes.
- The last a unique alphanumeric identifier for the CICSplex.

All other parameters required to complete the CICSplex definition are supplied by the EYUCPDEF file defined on the EYUCPDEF DD statement in the supplied EYUJXBTP sample.

The supplied EYUJXBT1 job is set up to define only one CICSplex. You are recommended to create a separate CICSplex for the Web User Interface server by adding the required definitions to EYUJXBT1.

CONTEXT
The second use of CONTEXT appears after the DEFINE CICSPLEX parameter, to reset the context to the CICSplex.

The format of the parameter to set the context to the CICSplex is:

CONTEXT  plexname

where plexname is the name you specified on the DEFINE CICSPLEX parameter.

DEFINE CICSGRP
Defines a CICS system group, which is a subset of a CICSplex.

The format of this parameter is:

DEFINE CICSGRP  group_name

where group_name is a 1- to 8-character alphanumeric name for the CICS system group. The first character must be alphabetic.

DEFINE REGION
Specifies the name and other key attributes of each CICS region you want to include in the CICSplex. The parameter and its subparameters have the following format:

DEFINE REGION  region_name  -
   APPLID   regionapplid  -
   SYSID    region_sysidnt

You are recommended to use the APPLID as the region name in these definitions. Making the region name the same as the APPLID has the following advantages:

- You do not have to invent another name for the region
- It avoids confusion if the names are the same instead of regions having two identifiers
- By excluding the NAME EYUPARM, the EYUPARM parameters can be shared across CICS regions. The NAME EYUPARM for each CICS region defaults to the z/OS Communications Server APPLID as specified on the APPLID system initialization table parameter for each CICS region.

SYSID is the name specified on the region's SYSIDNT system initialization parameter.

The EYUJXBT1 job includes the DEFINE REGION parameters once, but you can define as many as you need, in any groupings that suit your requirements.
ADD TOGROUP
Specifies the name of the CICS region that you want to add to the CICS system group defined by a DEFINE CICSGRP command.

The format of this parameter for adding a CICS region to a group is:

```
ADD TOGROUP
REGION    regname
```

You can also nest CICS system groups by including a group in another group. The format of the parameter for adding a group to a group is:

```
ADD TOGROUP
CICSGRP   grpname
```

After you have run the EYUJXBT1 job and created the initial definitions of your CICSpex, you might want to create another CICSpex, or add more regions or CICS system groups. If so, run the EYUJXBT1 job again, suitably modified to add the additional objects to your CMAS data repository. You can also save the previous definitions before making changes in case you have to back out the update.

Parameters used in EYUJXBT2
The EYUJXBT2 sample imports definitions to create a CMAS-to-CMAS connection. The sample sets the context to the first CMAS name and imports the link to the second CMAS. Then the sample changes the context to the second CMAS name and imports the link to the first CMAS.

The CMAS that owns the repository in which you are creating definitions must be active when you run the EYUJXBT2 job. Also, the EYUJXBT2 job must run in the same z/OS image as the CMAS. The EYUJXBT2 JCL does not have a data set definition (DD) statement for the repository because all access to the repository is through the CMAS, using the API.

EYUJXBT2 gives an example of using the IMPORT commands and has the following parameters, which you edit to specify your own names:

**CONTEXT**
Sets the CICSPlex SM context in which the utility is to operate.

The format of the parameter to set the context is:

```
CONTEXT  cmasname
```

where `cmasname` is the name of the CMAS to which you want to make changes.

**OPTION DUPREC**
Specifies the action that the program takes if it detects any definitions in the IMPORT stream that already exist in the local data repository. Permitted options are as follows:

- **OPTION DUPREC REJECT.** Commands that follow the duplicate definition are rejected.
- **OPTION DUPREC ABORT.** The job is terminated.
- **OPTION DUPREC SKIP.** Leave the existing record in place.
- **OPTION DUPREC UPDATE.** Replace the existing definition.

**IMPORT**
Imports definitions into the repository.

The format of the parameter is:

```
IMPORT CMAS1LNK * *
```

EYUJXBT2 has an input data stream for CMAS1LNK which includes a CMAS-to-CMAS definition (CMTCMDEF resource table).

If you are adding a secondary CMAS, you must assign it to your CICSpex before it can participate in CICSpex management. Do this in one of the following ways:

- Issue an Assign action from the EYUSTARTCPLEXDEF WUI view.
• Use the CICSplex SM API action of ASSIGN against the CPLEXDEF resource table.

**Parameters used in EYUJXBT3**

Use the EYUJXBT3 and EYUJXBT4 samples to import definitions to create a CMAS-to-CMAS connection for CMASs on different z/OS images. EYUJXBT3 sets the context to the first CMAS name and imports the link to the second CMAS.

The CMAS that owns the repository in which you are creating definitions must be active when you run EYUJXBT3. The EYUJXBT3 job must run in the same z/OS image as the CMAS in which you are creating definitions. The EYUJXBT3 JCL does not have a data set definition (DD) statement for the repository because all access to the repository is through the CMAS, using the API.

EYUJXBT3 gives an example of using the IMPORT commands and has the following parameters, which you edit to specify your own names:

**CONTEXT**

Sets the CICSPlex SM context in which the utility is to operate.

The format of the parameter to set the context is:

```
CONTEXT `cmasname`
```

where `cmasname` is the name of the CMAS to which you want to make changes.

**OPTION DUPREC**

Specifies the action that the program takes if it detects any definitions in the IMPORT stream that already exist in the local data repository. You can specify one of the following options:

**REJECT**

Rejects any commands that follow the duplicate definition.

**ABORT**

Terminates the job.

**SKIP**

Leaves the existing record in place.

**UPDATE**

Replaces the existing definition.

**IMPORT**

Imports definitions into the repository.

The format of the parameter is:

```
IMPORT CMAS1LNK **
```

EYUJXBT3 has an input data stream for CMAS1LNK which includes a CMAS-to-CMAS definition (created using the CMTCMDEF resource table).

If you are adding a secondary CMAS, you must assign it to your CICSpex before it can participate in CICSpex management. Do this in one of the following ways:

• Issue an ASSIGN action command from the EYUSTARTCPLUSDEF WUI view.
• Use the CICSpex SM API action of ASSIGN against the CPLEXDEF resource table.

**Parameters used in EYUJXBT4**

Use the EYUJXBT4 and EYUJXBT3 samples to import definitions to create a CMAS-to-CMAS connection for CMASs on different z/OS images. EYUJXBT4 sets the context to the second CMAS name and imports the link to the first CMAS.

The CMAS that owns the repository in which you are creating definitions must be active when you run EYUJXBT4. The EYUJXBT4 job must run in the same z/OS image as the CMAS in which you are creating definitions. The EYUJXBT4 JCL does not have a data set definition (DD) statement for the repository because all access to the repository is through the CMAS, using the API.
EYUJXBT4 gives an example of using the IMPORT commands and has the following parameters, which you edit to specify your own names:

**CONTEXT**
Sets the CICSPlex SM context in which the utility is to operate.

The format of the parameter to set the context is:

```
CONTEXT cmasname
```

where `cmasname` is the name of the CMAS which is to be changed.

**OPTION DUPREC**
Specifies the action that the program takes if it detects any definitions in the import stream that already exist in the local data repository. You can specify one of the following options:

- **REJECT**
  Rejects any commands that follow the duplicate definition.

- **ABORT**
  Terminates the job.

- **SKIP**
  Leaves the existing record in place.

- **UPDATE**
  Replaces the existing definition.

**IMPORT**
Imports definitions into the repository.

The format of the parameter is:

```
IMPORT CMAS2LNK * *
```

EYUJXBT4 has an input data stream for CMAS2LNK, which includes a CMAS-to-CMAS definition (created using the CMTCMDEF resource table).

If you are adding a secondary CMAS, you must assign it to your CICSpex before it can participate in CICSpex management. You can do this in one of the following ways:

- Issue an ASSIGN action command from the EYUSTARTCplexWUI view.
- Use the CICSpex SM API action of ASSIGN against the CplexDE resource table.

**EYU9XDBT utility error handling**
Three levels of error can occur in EYU9XDBT utility program processing.

These errors are as follows:

- **Errors in the command parameter stream that are detected by EYU9XDBT.**
  EYU9XDBT processes each command as it occurs in the command input stream. If the utility program detects an error in a command (for example, an unrecognized parameter), it stops processing without reading any more commands and issues message EYUXU1448E Data stream rejected which gives an EYU9XDBT return code of 12.

- **Errors in the CICSpex SM API detected by CICSpex SM when it is processing calls from EYU9XDBT.**
  If a command and its parameters are recognized by EYU9XDBT, it calls the CICSpex SM API to perform the specified action. However, if CICSpex SM detects an error, only that command fails (with an EYU9XDBT return code of 8 or 12), and EYU9XDBT continues with the next command. For example, a DEFINE REGION command that specifies SYSID ABCDE is accepted by EYU9XDBT but rejected by CICSpex SM because the SYSID value is more than 4 characters long, producing the following error messages:

  **EYUAR0021E**
  Length of data for attribute (CSYSDEF._SYSID) is invalid.
EYUXU1441S
TBUILD failed for CSYSDEF data: FAILURE.

EYUXU1448E
Datastream rejected.

• Abend code 878 when a program attempts to use more storage than it has allocated.

In EYU9XDBT this abend is caused by an insufficient region size. The solution is to increase the region size. This abend code can occur in the following situation:

– Not accounting for the retention by EYU9XDBT of large numbers of definitions in memory when setting your region size.

You can calculate the storage required by multiplying the definition size by the definition count. However, if you cannot modify the region size, you might be able to modify the existing commands to use less storage. Because each command is run separately, reducing the number of definitions per command is a straightforward and effective way of lowering storage requirements.

One way of reducing storage requirements is to avoid using the generic * (asterisk) character to define the definition type and the definition name in IMPORT, EXPORT, and PRINT commands because it can result in large numbers of definitions held in storage. Instead, use separate commands that select the least number of definitions feasible.

The batched repository-update facility (BATCHREP)
The BATCHREP batched repository-update facility can streamline the process of managing your data repositories.

Instead of using multiple view screens repeatedly to create large numbers of definitions, you can create a standard input file to add the definitions to the data repository all at one time. This can reduce the effort of creating such definitions as the Transaction in Transaction Group (DTRINGRP) associations, which can involve identifying hundreds of transactions. Similarly, when you use Business Application Services (BAS) to create and maintain your CICS resource definitions, the batched repository-update facility can speed up the definition process.

Submitting a batched repository-update (BATCHREP) job
There are three steps in submitting a BATCHREP job.

To submit a batched repository-update job, you must:

1. Create a sequential data set or partitioned data set member to contain your input to the batched repository-update facility. The data set must have a fixed blocked format, RECFM(FB), and a logical record length of 80, LRECL(80).

   If you are directing the output to a partitioned data set member, you should ensure that the data set has enough directory entries and space to successfully execute the command. Failure to do this could cause the CMAS to terminate.

2. Create your input, as described in “Creating a batched repository-update (BATCHREP) input file” on page 13.

3. Use one of the following methods to submit the batched repository-update job:

   • **Batched repository update job** WUI view, as described in “Using the WUI to submit a batched repository-update (BATCHREP) job” on page 19.

   • Batched repository-update utility, as described in “Using the batched repository-update utility” on page 20.

   • CICSPlex SM API to make use of the BATCHREP resource table.

   Submitting a batched repository-update job that processes the same definition in quick succession may result in one or more control statements failing. In such circumstances the best procedure would be to divide the repository-update job and submit the resultant jobs sequentially.


Creating a batched repository-update (BATCHREP) input file
A batched repository-update facility input file consists of control statements that describe the updates you want to make to the data repository.

The input file must adhere to the following requirements:

• Control statements must be in uppercase.
• Each control statement must be terminated with a semicolon (;).
• Comments must be delimited with /* at the beginning and */ at the end. (Any line with * in column 1 is also treated as a comment.)

Control statements and comments can span multiple lines.

When creating your input file, you must first identify the context (CMAS or CICSplex) to which the updates apply. To do this, use the control statement:

```
CONTEXT [plexid]
```

where `plexid` is the name of the local CMAS or of a CICSplex associated with the local CMAS (the local CMAS is the CMAS on which the batched repository-update job runs). If you specify a CICSplex as the context for the update, the local CMAS must be the maintenance point for that CICSplex. If you omit this parameter, the local CMAS is assumed to be the context.

Once you have established a context, it remains in effect for the batched repository-update job until you explicitly change it with another CONTEXT statement.

The rest of the control statements in an input file vary according to the type of updates you are making. The following sections describe the control statements for each type of update in detail.

Creating and maintaining CICSPlex SM definitions
To create, update, remove, or review CICSPlex SM definitions in the data repository, use one or more control statements.

Control statements take the form:

```
command object keyword1(value) keyword2
```

where:

**command**
Is the name of a batched repository-update facility command, in uppercase letters. Specify one of the following:

**CREATE**
To create a record and add it to the data repository associated with the local CMAS.

**UPDATE**
To update an existing record in the data repository.

**Note:** You cannot update LNKSxSCG records using the batched repository-update facility, although you can do so through the WUI.

**REMOVE**
To remove an existing record from the data repository.

When you remove a record, all associations between that record and other records in the data repository are lost. For example, if you remove a CICS system definition, associations between that CICS system and any CICS system groups or component specifications are also removed.

When removing BAS definitions the DEFVER() keyword must be specified.

**LIST**
To list a record from the data repository.

**DUMP**
To list a record from the data repository and insert a CREATE control statement in front of it.
You can use the output resulting from a DUMP command as input to another batched repository-update job that creates definitions. The output of a DUMP command is formatted as follows:

- Data lines are broken at column 72
- Continuation characters are placed in column 1.

By default, the output is written to a spool file and must be extracted from the spool, and edited, before it can be used as input to the batched repository-update facility. The extracted records contain ANS control characters in column 1, therefore you must shift the records one character to the left to align the data for processing by CICSPlex SM. You must also remove all the page header information from the data set. For an example of a listing, see Figure 2 on page 28. However, you can use the OUTPUT command to write the output in the correct format, direct to a data set. For details, see “Creating a data set for re-input to the batched repository-update facility” on page 18.

CICSPlex SM requires certain definitions to exist before others can be created. Therefore, you should adhere to the following guidelines when dumping data repository records:

- Always dump CICS system (CSYSDEF) and CICS system group (CSYSGRP) records first.
- Dump basic CICSPlex SM definition records (such as, xxxDEF, xxxGROUP, and xxxSPEC) before association records (such as, LNKxxxxx, xxxINGRP, or xxxINSPC).
- For Business Application Services:
  - Dump RESGROUP records before RESDESC and RASGNDEF records.
  - Dump RESDESC and RASGNDEF records before RESINDSC and RASINDSC records.
  - Dump resource definition records (such as FILEDEF) before xxxINGRP records (such as FILINGRP).
  - Dump CONNDEF, SESSDEF, IPCONDEF, and TCPDEF records before SYSLINK records.

If you follow these guidelines, the output from a DUMP command is in the correct order for the batched repository-update facility to create new definitions. For an example of using the DUMP command output to create new definitions, see “Examples of managing records in the data repository” on page 27.

**Note:** Output from the DUMP and LIST commands contains a visible record of any passwords associated with CICS resources (such as connections or files). To prevent possible security exposures, you should restrict access to such output.

**object**

Is one of the resource table names shown in Table 1 on page 21.

**keyword1(value)**

Is the name of a field in the specified resource table and the data that is appropriate for that field, in uppercase letters. The required input for the various commands is as follows:

**CREATE**

Provide all of the information required to define the resource, for example the same type of information as required by the equivalent WUI Create view.

You can derive the input to the CREATE statement from the output of a DFHCSDUP EXTRACT or BATCHREP DUMP request. See “Creating a data set for re-input to the batched repository-update facility” on page 18, “Example 6 - Dumping records as input to create new records” on page 28 for further information. If you do not create your input in this way, you must specify all the required attributes.

**Note:** For some definition records you should not specify certain operands; for example, for CPLEXDEF, do not specify the STATUS operand.

**UPDATE**

Identify the specific record to be updated. For CICS resource definitions created as part of business application services (BAS), this must include the version (DEFVER) of the resource. Specify the attributes that will be updated.
**REMOVE**

Identify the specific record to be removed. For CICS resource definitions created as part of business application services (BAS), this must include the version (DEFVER) of the resource.

**LIST and DUMP**

Provide a specific or generic record name, where generic names can contain the plus sign (+), asterisk (*), or both.

**keyword2**

Indicate how the creation or removal of a specification-to-CICS system group link record (LNKSxSCG) should affect the current members of the CICS system group. The keywords for the CREATE and REMOVE commands must be entered in uppercase letters and are as follows:

**CREATE**

Specify one of the following:

- **FORCE**
  All current members of the CICS system group should have implicit links established to the named specification. When a link already exists, it is replaced with the newly CREATEd link.

- **NULL**
  Current members of the CICS system group should have implicit links established to the named specification only if no link already exists.

- **NONE**
  No implicit links should be established.

When you use the CREATE command, the default value for keyword2 is NONE.

**REMOVE**

Specify one of the following:

- **KEEP**
  All implicit links are to be converted to explicit links.

- **NONE**
  No implicit links are to be converted to explicit links.

There is no default value for keyword2 when you use the REMOVE command; you must specify a value.

When you submit the batched repository-update job, the syntax of each command is checked for validity. If multiple commands are being issued, syntax checking can have the following results:

- When a LIST, DUMP, MAPLEFT or MAPRIGHT command is invalid, that command is not executed; processing of all subsequent commands continues.
- When a modification command (CREATE, UPDATE, or REMOVE) is invalid, that command is not executed. All subsequent modification commands are checked for validity; however, no subsequent modification commands are executed.

**Creating CICS resource definitions**

To create CICS resource, and optionally add them to a resource group in the data repository, use one or more control statements.

Control statements take the form:

```
CREATE object NAME(defname) [RESGROUP(resgroup)]
```

where:

- **object**
  Is one of the resource table names shown in Table 1 on page 21 that represent a CICS resource type (such as CONNDEF).

- **defname**
  Is the name of the resource definition you are creating.
resgroup
Is the name of an existing resource group in the data repository to which the resource definition should be added.

Producing a map of CICSPlex SM definitions
In addition to creating and maintaining CICSPlex SM definitions, you can produce a visual map of the definitions in the data repository.

To produce a map, use one or more control statements in the form:

```
command object NAME(defname)
```

where:

command
Is the name of a batched repository-update facility command, in uppercase letters. Specify one of the following:

MAPLEFT
To produce a map of the definitions to the left of the starting point; that is, those definitions that refer to the starting point.

MAPRIGHT
To produce a map of the definitions to the right of the starting point; that is, those definitions that are referred to by the starting point.

object
Is a resource table name that identifies the type of definition to be displayed in the map.

You can produce a map of the following definitions:

**Topology**
- CSYSDEF
- CSYSGRP
- PERIODEF

**Workload management**
- TRANGRP
- WLMDEF
- WLMGROUP
- WLMSPEC

**Real-time analysis**
- ACTION
- APSPEC
- EVALDEF
- RTADEF
- RTAGROUP
- RTASPEC
- STATDEF

**Resource monitoring**
- MONDEF
- MONGROUP
- MONSPEC
**Business application services**

- xxxxDEF (resource definitions such as FILEDEF)
- RESGROUP
- RESDESC
- RASGNDEF

**NAME**

Is the field name of the key field for the resource being mapped. For all resources the key field name is NAME, with the following exceptions:

- The key field for CSYSGRP is GROUP.
- The key field for RESGROUP is RESGROUP.
- The key field for RESDESC is RESDESC.
- The key field for RASGNDEF is RESASSGN.

**defname**

Is the specific or generic name of a definition that is to be the starting point for a map. If you enter a generic name, a map is produced for each definition whose name matches the pattern.

**Setting processing options for repository-update commands**

The default behavior of batched repository-update commands can be modified by the OPTION command.

The format of the OPTION command is:

```
OPTION type keyword [keyword ...]
```

where

- **type** identifies the option which is being set.
- **keyword** specifies the value(s) to be set for an option type.

The following option types are currently supported:

**DUPREC**

Specify how the CREATE command will handle the RECORD_EXISTS condition. One of the following keywords must be specified:

- **REJECT** (default)
  
  The existing record is not modified; the BATCHREP input stream is flushed and no more commands are processed.

- **ABORT**
  
  The existing record is not modified; the job is terminated immediately.

- **SKIP**
  
  The existing record is not modified; processing continues with the next BATCHREP command.

- **UPDATE**
  
  The existing record is updated by redriving the CREATE command as if it were an UPDATE.

**Note:**

1. Several link type CICSPlex SM resource tables do not support the UPDATE action. If a BATCHREP input stream that creates any of the following resource types must be restarted, OPTION DUPREC SKIP must be specified or the command retry will fail. Affected resource tables are:

   - CMDMPPAPS - APSPEC to Primary CMAS
   - CMDMSAPS - APSPEC to Secondary CMAS
   - CSGLCGCG - CICSGRP in CICSGRP
   - CSGLCGCS - CICSSYS in CICSGRP
   - LNKSxSG - xxxSPEC to CICSGRP, where xxx is MON, RTA or WLM
   - LNKSxSCS - xxxSPEC to CICSSYS, where xxx is MON, RTA or WLM

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If a STATUS other than RECORD_EXISTS is returned by the CREATE command, the command is not retried and all remaining commands in the input file are flushed.

Multiple OPTION commands can be placed in the BATCHREP input stream. An OPTION command affects all commands until another OPTION command is encountered for the same option type or the input command stream reaches end-of-file.

Creating a data set for re-input to the batched repository-update facility

You can create an output data set from the batched repository-update facility to hold the CREATE statements produced from DUMP commands.

This data set is in the correct format for re-input to the batched repository-update facility without further editing; that is, it does not contain heading lines and the data is aligned in the correct columns. Note, however, that you may still need to edit this output data to modify the context, group names, version numbers, and so on.

When you use the DUMP command (see “Creating and maintaining CICSPlex SM definitions” on page 13), you may use the OUTPUT command to request that any resulting CREATE commands are written to an output data set, in addition to the normal report. The OUTPUT command must be the first command in the BATCHREP input data stream, to ensure that the command precedes any DUMP commands. You cannot specify more than one OUTPUT command.

Note: If a partitioned data set is used as the output data set, you must ensure that the data set has enough space to handle the output. A full partitioned data set without sufficient directory space may cause multiple abends resulting in the termination of the CMAS. To avoid multiple abends during CICS recovery, direct output to a sequential data set. If required, you can then copy the sequential data set output to a partitioned data set.

The format of the OUTPUT command is:

```
OUTPUT DATASET DSNAME(data.set.name(member)) INQUOTES(NO|YES);
```

where:

**DATASET**

This keyword must be specified.

**DSNAME**

Specifies a data set name. You must specify a data set name and the data set must exist. The output data set cannot be the same as the input data set. The data set must consist of fixed-length, 80-byte records; the records may be blocked and any block size is acceptable.

**data.set.name**

The data set name must not exceed 44 characters in length. Each component of the name cannot be more than 8 characters long, and the components must be separated by full stops. The data set name must be a fully-qualified data set name. The first component of the data set name does not default to the logged-on user id.

**member**

The member name, if the output data set is partitioned. The member name cannot be more than 8 characters long. The member name must be omitted if the output data set is not partitioned.

**INQUOTES(NO|YES)**

Identifies whether or not you want field values enclosed in quotes on the output data set. You may need to use this control statement if you have any data on your data repository that contains unbalanced parentheses. If you omit this keyword, the default value of NO is assumed.

**NO**

The values of parameters are not enclosed in quotes on the output data set. This setting is perfectly adequate for input to the batched repository-update facility, but you might encounter problems if the parameter values contain unbalanced parentheses.

Note that, if you specify INQUOTES(NO), the BATCHREP output can be used as input to any release of the CICSPlex SM batched repository-update facility.
YES
All values of parameters are enclosed in quotes on the output data set. The CICSPlex SM batched repository-update facility terminates the parameter value at the final quote, not at an embedded parenthesis.

For example, suppose a DESCRIPTION field contains the value:

```
1) Describe Resource
```

If you specify INQUOTES(NO), which is the default, the DUMP routine will produce the following statement in the output data set:

```
DESCRIPTION(1) Describe Resource)
```

The CICSPlex SM batched repository-update facility interprets this as a DESCRIPTION field containing the value 1, followed by two unrecognizable keywords.

If you specify INQUOTES(YES), the DUMP routine places quotes around the field value. The output data set would contain the statement:

```
DESCRIPTION('1) Describe Resource')
```

This statement is interpreted correctly by the CICSPlex SM batched repository-update facility.

**Using the WUI to submit a batched repository-update (BATCHREP) job**

To submit a batched repository-update job using the WUI from the main menu (EYUSTARTMENU) click Administration views > Batched repository update requests This will display the Batched repository update requests view that allows you to view information about currently running batched repository-update jobs.

The following procedure allows you to submit a selected batched repository-update job:

1. Open the Batched repository update requests view.
2. Select the record you intend to submit and click Execute. This opens the Execute view. If no batched repository-update jobs are running then only the dummy stopped record is available for selection.
   
   **Note:** Clicking the Check button opens the Check view which allows you to check the command format of all the input statements of the batched repository-update job.

3. Complete the Execute view by completing the following fields:
   
   **Input data set name**
   Specify the name of the sequential or partitioned data set (PDS) containing the input to the batched repository-update job.

   **Input member name**
   When using a PDS, specify the name of the member that contains the input to the batched repository-update job.

   **Print class**
   (Optional.) Specify a 1-character class designation. If you omit a value, class A is assumed.

   **Print node**
   Specify the 8-character identifier of a designation node that the system spooler is to use to route the file.

   **Destination userid**
   Specify the 8-character identifier of the eventual writer program or of the user who will process the report for spooled records intended for the printer. The report will carry this identifier, which will be used to select the report at its destination.

4. Select Yes to submit the job.

To apply updates to a particular data repository, you must ensure that the WUI server is connected to the CMAS which is associated with the data repository you want to update.
Using the batched repository-update utility

The batched repository-update utility connects to a CMAS and submits batched repository (BATCHREP) updates to run in that CMAS.

To make batched repository updates to a particular data repository, run the utility so that it connects to, and submits batched updates to run in, the CMAS that is associated with the data repository you want to update.

To run the utility, prepare the necessary JCL and define the input parameters for the utility itself, such as the name of the CMAS associated with the data repository you want to update.

Here is an example of JCL to run the batched repository update utility:

```plaintext
//jobname JOB (acct),’name’,CLASS=x,MSGCLASS=x
//BTCHUPD EXEC PGM=EYU9XDBC,REGION=2048K
//STEPLIB DD DSN=CICSTS54.CPSM.SEYUAUTH,DISP=SHR
// DD DSN=CICSTS54.CPSM.SEYULOAD,DISP=SHR
//SYSPRINT DD SYSOUT=*
//SYSAEND DD SYSOUT=*
//SYSPRINT DD  SYSOUT=*  
//SYSIN DD  *  
CMASNAME(EYUCMS1A)
CHECK
INPUTDSN(EXAMPLE.INPUT.DATASET)
INPUTMEMBER(MEMBER1)
OUTPUTUSER(EXUSER)
PRINTNODE(LOCAL)
/*
```

Here is an example of the output from the batched repository-update utility:

```plaintext
CICSPlex/SM Batched Repository Update Utility
Parameters specified:
CMASNAME(EYUCMS1A)
CHECK
INPUTDSN(EXAMPLE.INPUT.DATASET)
INPUTMEMBER(MEMBER1)
OUTPUTUSER(EXUSER)
PRINTNODE(LOCAL)

EYUXD0908I A batched repository update has been submitted to run in CMAS EYUCMS1A.
```

The output of the batched repository-update utility is a short report that lists the input parameters and a message to show the CMAS in which the batched updates have been submitted. Review this output to verify the utility successfully submitted the batched updates in the CMAS.

The batched updates that run in the CMAS produce output using the standard CICS spooling facilities. You must also review this second output to verify batched updates have run successfully.

**Batched repository-update utility parameters**

This section describes the input parameters that you must specify to use the batched repository update utility. These parameters must be supplied in the SYSIN data set.

The following syntax rules apply:

- Parameters must be specified in uppercase
- Parameters can be specified in any order
- A given parameter must be specified once only in a given SYSIN stream
- A given parameter must appear all on one line
- Spaces will be ignored
- An asterisk (*) as the first character will mean that the line is ignored.
The parameters can be specified as follows:

**CMASNAME**
Specifies the 1-to-8 character name of a CMAS to which the utility is to connect and whose data repository is to be modified by the batched repository update processing. This parameter is mandatory. It is this CMAS in which batched repository update processing takes place and from which output is produced by the CICS spooling facilities.

**CHECK or EXECUTE**
Must be specified for the type of run. CHECK specifies a syntax check of the input file and EXECUTE specifies the commands in the input file that must be executed. These keywords are mutually exclusive.

**INPUTDSN**
Specifies a 1-to-44 character string for the data set name of a sequential data set or a PDS that contains the input to the batched repository update processing. The CMAS must have access to the data set specified via the INPUTDSN parameter. This parameter is mandatory.

**INPUTMEMBER**
Specifies a 1-to-8 character name of a member when using a PDS that contains the input file. This parameter is optional.

**PRINTCLASS**
Specifies a 1-character print class identifier. This parameter is optional. The default is A.

**PRINTNODE**
Specifies a 1-to-8 character print node identifier to be used by the system spooler for routing the job output. This parameter is mandatory.

**OUTPUTUSER**
Specifies a 1-to-8 character user identifier to be associated with the spooled output. This parameter is mandatory.

**DIAGNOSE**
Intended for use only under guidance by IBM service personnel.

**NODIAGNOSE**
Intended for use only under guidance by IBM service personnel.

**BATCHREP supported resource tables**
Most CICSPlex SM resource tables are supported by the batched repository update facility.

Table 1 on page 21 lists the CICSPlex SM resource tables that you can process using the batched repository update facility.

<table>
<thead>
<tr>
<th>Resource type</th>
<th>Table name</th>
<th>Definitions affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configuration</td>
<td>CMTCMDEF</td>
<td>CMAS-to-CMAS definitions</td>
</tr>
<tr>
<td>Resource type</td>
<td>Table name</td>
<td>Definitions affected</td>
</tr>
<tr>
<td>--------------------</td>
<td>--------------</td>
<td>----------------------------------------------------------</td>
</tr>
<tr>
<td>Configuration</td>
<td>CMTPMDEF</td>
<td>CMAS-to-remote MAS definitions</td>
</tr>
<tr>
<td>Configuration</td>
<td>CPLEXDEF</td>
<td>CICSPlex definitions</td>
</tr>
<tr>
<td>Topology</td>
<td>CSGLCGCG</td>
<td>Association between a CICS system group and a CICS system group</td>
</tr>
<tr>
<td>Topology</td>
<td>CSGLCGCS</td>
<td>Association between a CICS system and a CICS system group</td>
</tr>
<tr>
<td>Topology</td>
<td>CSYSDEF</td>
<td>CICS systems</td>
</tr>
<tr>
<td>Topology</td>
<td>CSYSGRP</td>
<td>CICS system groups</td>
</tr>
<tr>
<td>Topology</td>
<td>PERIODEF</td>
<td>Time periods</td>
</tr>
<tr>
<td>Topology</td>
<td>SYSLINK</td>
<td>System links</td>
</tr>
<tr>
<td>Workload management</td>
<td>DTRINGRP</td>
<td>Association between a transaction and a transaction group</td>
</tr>
<tr>
<td>Workload management</td>
<td>LNKSWSCG</td>
<td>Association between a workload specification and a CICS system group</td>
</tr>
<tr>
<td>Workload management</td>
<td>LNKSWSCS</td>
<td>Association between a workload specification and a CICS system</td>
</tr>
<tr>
<td>Workload management</td>
<td>TRANGRP</td>
<td>Transaction groups</td>
</tr>
<tr>
<td>Workload management</td>
<td>WLMDEF</td>
<td>Workload definitions</td>
</tr>
<tr>
<td>Workload management</td>
<td>WLMGROUP</td>
<td>Workload groups</td>
</tr>
<tr>
<td>Workload management</td>
<td>WLMINGRP</td>
<td>Association between a workload definition and a workload group</td>
</tr>
<tr>
<td>Workload management</td>
<td>WLMSPEC</td>
<td>Workload specifications</td>
</tr>
<tr>
<td>Real-time analysis</td>
<td>ACTION</td>
<td>Action definitions</td>
</tr>
<tr>
<td>Real-time analysis</td>
<td>APSPEC</td>
<td>Analysis point specifications</td>
</tr>
<tr>
<td>Real-time analysis</td>
<td>CMDMPAPS</td>
<td>Association between a primary CMAS and an analysis point specification</td>
</tr>
<tr>
<td>Real-time analysis</td>
<td>CMDMSAPS</td>
<td>Association between a secondary CMAS and an analysis point specification</td>
</tr>
<tr>
<td>Real-time analysis</td>
<td>EVALDEF</td>
<td>Evaluation definitions</td>
</tr>
<tr>
<td>Real-time analysis</td>
<td>LNKSRS CG</td>
<td>Association between an analysis specification and a CICS system group</td>
</tr>
<tr>
<td>Real-time analysis</td>
<td>LNKSRS CG</td>
<td>Association between an analysis specification and a CICS system group</td>
</tr>
<tr>
<td>Real-time analysis</td>
<td>RTADEF</td>
<td>Analysis definitions</td>
</tr>
<tr>
<td>Real-time analysis</td>
<td>RTAGROUP</td>
<td>Analysis groups</td>
</tr>
<tr>
<td>Real-time analysis</td>
<td>RTAINAPS</td>
<td>Association between an analysis group and an analysis point specification</td>
</tr>
</tbody>
</table>
### Table 1. Resource table names (continued)

<table>
<thead>
<tr>
<th>Resource type</th>
<th>Table name</th>
<th>Definitions affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real-time analysis</td>
<td>RTAINGRP</td>
<td>Association between an analysis definition and an analysis group</td>
</tr>
<tr>
<td>Real-time analysis</td>
<td>RTAINSPC</td>
<td>Association between an analysis group and an analysis specification</td>
</tr>
<tr>
<td>Real-time analysis</td>
<td>RTASPEC</td>
<td>Analysis specifications</td>
</tr>
<tr>
<td>Real-time analysis</td>
<td>STAINGRP</td>
<td>Association between a status definition and an analysis group</td>
</tr>
<tr>
<td>Real-time analysis</td>
<td>STATDEF</td>
<td>Status definitions</td>
</tr>
<tr>
<td>Monitor</td>
<td>LNKSMSCG</td>
<td>Association between a monitor specification and a CICS system group</td>
</tr>
<tr>
<td>Monitor</td>
<td>LNKSMSCS</td>
<td>Association between a monitor specification and a CICS system</td>
</tr>
<tr>
<td>Monitor</td>
<td>MONDEF</td>
<td>Monitor definitions</td>
</tr>
<tr>
<td>Monitor</td>
<td>MONGROUP</td>
<td>Monitor groups</td>
</tr>
<tr>
<td>Monitor</td>
<td>MONINGRP</td>
<td>Association between a monitor definition and a monitor group</td>
</tr>
<tr>
<td>Monitor</td>
<td>MONINSPC</td>
<td>Association between a monitor group and a monitor specification</td>
</tr>
<tr>
<td>Monitor</td>
<td>MONSPEC</td>
<td>Monitor specifications</td>
</tr>
<tr>
<td>Business application services</td>
<td>APPLDEF</td>
<td>Application definitions</td>
</tr>
<tr>
<td>Business application services</td>
<td>ATMINGRP</td>
<td>Association between an Atom document definition and a resource group</td>
</tr>
<tr>
<td>Business application services</td>
<td>BUNINGRP</td>
<td>Association between a bundle definition and a resource group</td>
</tr>
<tr>
<td>Business application services</td>
<td>CONINGRP</td>
<td>Association between an MRO or ISC over SNA connection definition and a resource group</td>
</tr>
<tr>
<td>Business application services</td>
<td>DOCINGRP</td>
<td>Association between a document template definition and a resource group</td>
</tr>
<tr>
<td>Business application services</td>
<td>D2CINGRP</td>
<td>Association between a DB2® connection definition and a resource group</td>
</tr>
<tr>
<td>Business application services</td>
<td>D2EINGRP</td>
<td>Association between a DB2 entry definition and a resource group</td>
</tr>
<tr>
<td>Business application services</td>
<td>D2TINGRP</td>
<td>Association between a DB2 transaction definition and a resource group</td>
</tr>
<tr>
<td>Business application services</td>
<td>EJCINGRP</td>
<td>Association between a CorbaServer definition and a resource group</td>
</tr>
<tr>
<td>Business application services</td>
<td>EJDINGRP</td>
<td>Association between a DJAR definition and a resource group</td>
</tr>
<tr>
<td>Business application services</td>
<td>ENQINGRP</td>
<td>Association between an ENQ/DEQ model definition and a resource group</td>
</tr>
</tbody>
</table>
Table 1. Resource table names (continued)

<table>
<thead>
<tr>
<th>Resource type</th>
<th>Table name</th>
<th>Definitions affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business application services</td>
<td>FILINGRP</td>
<td>Association between a file definition and a resource group</td>
</tr>
<tr>
<td>Business application services</td>
<td>FNOINGRP</td>
<td>Association between a FEPI node definition and a resource group</td>
</tr>
<tr>
<td>Business application services</td>
<td>FPOINGRP</td>
<td>Association between a FEPI pool definition and a resource group</td>
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<tr>
<td>Business application services</td>
<td>FPRINGRP</td>
<td>Association between a FEPI property set definition and a resource group</td>
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<tr>
<td>Business application services</td>
<td>FSGINGRP</td>
<td>Association between an OS/2 file segment definition and a resource group</td>
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<tr>
<td>Business application services</td>
<td>FTRINGRP</td>
<td>Association between a FEPI target definition and a resource group</td>
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<tr>
<td>Business application services</td>
<td>IPCINGRP</td>
<td>Association between an IPIC connection definition and a resource group</td>
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<tr>
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<td>JRMINGRP</td>
<td>Association between a journal model definition and a resource group</td>
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<td>LIBINGRP</td>
<td>Association between a LIBRARY definition and a resource group</td>
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<td>MAPINGRP</td>
<td>Association between a map set definition and a resource group</td>
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<td>MQCINGRP</td>
<td>Association between a IBM® MQ connection definition and a resource group</td>
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<tr>
<td>Business application services</td>
<td>PARINGRP</td>
<td>Association between a partner definition and a resource group</td>
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<tr>
<td>Business application services</td>
<td>PGMINGRP</td>
<td>Association between a program definition and a resource group</td>
</tr>
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<td>PIPINGRP</td>
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<td>PLATDEF</td>
<td>Platform definitions</td>
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<td>PLATFORM</td>
<td>Platforms</td>
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<td>PRCINGRP</td>
<td>Association between a process type definition and a resource group</td>
</tr>
<tr>
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<td>PRNINGRP</td>
<td>Association between a partition set definition and a resource group</td>
</tr>
<tr>
<td>Business application services (continued)</td>
<td>PROINGRP</td>
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<td>RASGNDEF</td>
<td>Resource assignments</td>
</tr>
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<td>Business application services (continued)</td>
<td>RASINDSC</td>
<td>Association between a resource assignment and a resource description</td>
</tr>
<tr>
<td>Business application services (continued)</td>
<td>RESDESC</td>
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</tr>
<tr>
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<td>Table name</td>
<td>Definitions affected</td>
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<td>RESGROUP</td>
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<tr>
<td>Business application services (continued)</td>
<td>RESINDSC</td>
<td>Association between a resource group and a resource description</td>
</tr>
<tr>
<td>Business application services (continued)</td>
<td>RQMINGRP</td>
<td>Association between a request model definition and a resource group</td>
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<tr>
<td>Business application services (continued)</td>
<td>SESINGRP</td>
<td>Association between a session definition and a resource group</td>
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<tr>
<td>Business application services (continued)</td>
<td>TCLINGRP</td>
<td>Association between a transaction class definition and a resource group</td>
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<tr>
<td>Business application services (continued)</td>
<td>TCPINGRP</td>
<td>Association between a TCP/IP service definition and a resource group</td>
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<tr>
<td>Business application services (continued)</td>
<td>TDQINGRP</td>
<td>Association between a transient data queue definition and a resource group</td>
</tr>
<tr>
<td>Business application services (continued)</td>
<td>TRMINGRP</td>
<td>Association between a terminal definition and a resource group</td>
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<tr>
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<td>TRNINGRP</td>
<td>Association between a transaction definition and a resource group</td>
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<tr>
<td>Business application services (continued)</td>
<td>TSMINGRP</td>
<td>Association between a temporary storage model definition and a resource group</td>
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<tr>
<td>Business application services (continued)</td>
<td>TYPINGRP</td>
<td>Association between a typeterm definition and a resource group</td>
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<tr>
<td>Business application services (continued)</td>
<td>URIINGRP</td>
<td>Association between the universal resource identifier definition and a resource group</td>
</tr>
<tr>
<td>Business application services (continued)</td>
<td>WEBINGRP</td>
<td>Association between a web services definition and a resource group</td>
</tr>
<tr>
<td>Resource type</td>
<td>Table name</td>
<td>Definitions affected</td>
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<tr>
<td>Business application services (continued)</td>
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<tr>
<td>• ATOMDEF</td>
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<td>Atom document definitions</td>
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<td>• BUNDDEF</td>
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<td>Bundle definitions</td>
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<td>• DB2CDEF</td>
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<td>• DB2TDEF</td>
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<td>• DOCDEF</td>
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<td>Document template definitions</td>
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<td>• EJCDEF</td>
<td></td>
<td>CorbaServer definitions</td>
</tr>
<tr>
<td>• EJGJDEF</td>
<td></td>
<td>DJAR definitions</td>
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<tr>
<td>• ENQMDEF</td>
<td></td>
<td>ENQ/DEQ model definitions</td>
</tr>
<tr>
<td>• FENODDEF</td>
<td></td>
<td>FEPI node definitions</td>
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<tr>
<td>• FEPOODEF</td>
<td></td>
<td>FEPI pool definitions</td>
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<tr>
<td>• FEPRODEF</td>
<td></td>
<td>FEPI property set definitions</td>
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<tr>
<td>• FETRIGDEF</td>
<td></td>
<td>FEPI target definitions</td>
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<td>• FILEDEF</td>
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<td>File definitions</td>
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<td>• FSEGDEF</td>
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<td>OS/2 file segment definitions</td>
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<td>• IPCONDEF</td>
<td></td>
<td>IPIC connection definitions</td>
</tr>
<tr>
<td>• JRNMEDEF</td>
<td></td>
<td>Journal model definitions</td>
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<tr>
<td>• LSRDEF</td>
<td></td>
<td>LSR pool definitions</td>
</tr>
<tr>
<td>• LIBDEF</td>
<td></td>
<td>LIBRARY definitions</td>
</tr>
<tr>
<td>• MAPDEF</td>
<td></td>
<td>Mapset definitions</td>
</tr>
<tr>
<td>• MQCONDEF</td>
<td></td>
<td>IBM MQ connection definitions</td>
</tr>
<tr>
<td>• PARTDEF</td>
<td></td>
<td>Partner definitions</td>
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<tr>
<td>• PIPEDEF</td>
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<td>Pipeline definitions</td>
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<tr>
<td>• PROCDEF</td>
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<td>Process type definitions</td>
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<tr>
<td>• PROFDEF</td>
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<td>Profile definitions</td>
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<td>• PROGDEF</td>
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<td>Program definitions</td>
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<td>• PRTNDEF</td>
<td></td>
<td>Partition set definitions</td>
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<td>• RASGNDEF</td>
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<td>Resource assignments definitions</td>
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<td>• RQMDEF</td>
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<td>Request model definitions</td>
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<td>• SESSDEF</td>
<td></td>
<td>Session definitions</td>
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<tr>
<td>• TCPEDEF</td>
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<td>TCP/IP service definitions</td>
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<tr>
<td>• TDQDEF</td>
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<td>Transient data queue definitions</td>
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<tr>
<td>• TERMDEF</td>
<td></td>
<td>Terminal definitions</td>
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<tr>
<td>• TRNDEF</td>
<td></td>
<td>Transaction definitions</td>
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<tr>
<td>• TRNCLDEF</td>
<td></td>
<td>Transaction class definitions</td>
</tr>
<tr>
<td>• TSMDEF</td>
<td></td>
<td>Temporary storage model definitions</td>
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<tr>
<td>• TYPTMDEF</td>
<td></td>
<td>Typterm definitions</td>
</tr>
<tr>
<td>• URIMPDEF</td>
<td></td>
<td>Universal resource identifier definitions</td>
</tr>
<tr>
<td>• WEBSVDEF</td>
<td></td>
<td>Web services definitions</td>
</tr>
</tbody>
</table>
Note: The information displayed in the CICS resource definitions in group (RESINGRP) view can be found separately in the xxxINGRP resource table for each resource type.

Examples of managing records in the data repository
The following examples illustrate how you might create, remove, list, and dump definition records in the data repository, and add a CICS system to a CICS system group.

Example 1 - Creating a record
To create a workload specification, you can use the Workload management (WLM) specification (EYUSTARTWLMSPEC.CREATE) WUI view or the batched repository-update facility.

Figure 1 on page 27 illustrates how to specify information when preparing a batched repository-update job:

```/* after setting context, create workload specification */
CONTEXT EYUPLX01;
CREATE WLMSPEC NAME(EYUWMS01) DESC(Sample description)
AFFINITY(USERID)
AFFLIFE(SIGNON)
MATCH(USERID)
AORSCOPE(EYUCSG01)
EVENTNAME(PAGERATE)
ABENDCRIT(0)
ABENDTHRESH(0)
ALGTYPE(QUEUE);
```

Figure 1. Using the batched repository-update facility to create a WLM specification

Example 2 - Removing a record
These examples illustrate how to remove a record from the data repository.

To remove the workload specification named EYUWMS01, you might specify:

```CONTEXT EYUPLX01;
REMOVE WLMSPEC NAME(EYUWMS01);
```

To remove the BAS PROGDEF named EYUPROG1, you might specify:

```CONTEXT EYUPLX01;
REMOVE PROGDEF NAME(EYUPROG1) DEFVER(1);
```

Example 3 - Creating a link record
This example illustrates how to create a link record in the data repository.

To create a link called WLMSPC01 between a workload specification and a CICS system group, you might specify:

```CREATE LNKWSCG SPEC(WLMSPC01) GROUP(EYUCSG01) FORCE;
```

Example 4 - Listing records
This example illustrates how to list selected records in the data repository.

To list all workload specification records that have names beginning with EYU, you would specify:

```CONTEXT EYUPLX01;
LIST WLMSPEC NAME(EUY*);
```

Figure 2 on page 28 illustrates the output format of records that you list from the data repository. Note that the output produced by the DUMP control statement is very similar; the major difference being that the word CREATE precedes the resource table name. If you use the OUTPUT command, the DUMP command will produce both a report, as illustrated in Figure 2 on page 28, and a data set, which contains the CREATE commands in a form suitable for re-input to the CICSPlex SM batched repository-update facility; see “Example 6 - Dumping records as input to create new records” on page 28.
Figure 2. Sample output produced when listing data repository definitions

Note: In the EYUWMS03 record in Figure 2 on page 28, EVENTNAME is an example of a keyword that has no value; MATCH and ALGTYPE are examples of keywords with a value of N/A.

Example 5 - Dumping records as a backup
This example illustrates how to back up selected records in the data repository.

To back up all of the workload management records in the data repository, you would specify:

```
CONTEXT EYUPLX01;
DUMP WLMSPEC NAME(*);
DUMP WLMGROUP NAME(*);
DUMP WLMDEF NAME(*);
DUMP TRANGRP NAME(*);
DUMP DTRINGRP TRANGRP(*);
DUMP WLMINGRP GROUP(*);
DUMP WLMINSPC NAME(*);
```

Example 6 - Dumping records as input to create new records
The OUTPUT command causes all CREATE records to be written to data set EYUIR01.MYOUT1.

To dump all versions of the CICS resource definitions in the correct order, directly to a data set that is to be resubmitted as input for creating new records, you would specify the following:

```
OUTPUT DATASET DSNAME(EYUIR01.MYOUT1) INQUOTES(NO);
CONTEXT EYUPLX01;
DUMP CSYSDEF NAME(*);
DUMP CSYSGRP GROUP(*);
DUMP RESGROUP RESGROUP(*);
DUMP RESDESC RESDESC(*);
DUMP RASGNDIE RESASSGN(*);
DUMP RASINDSC RESDESC(*) RESASSGN(*) RESGROUP(*) RESINDSC RESDESC(*)
DUMP CONNDEF NAME(*);
DUMP SESSDEF NAME(*);
DUMP xxxxDEF NAME(*);
```
DUMP CONINGRP CONNGROUP(*);
CONNNAME(*);
DUMP SESSINGRP SESSGROUP(*)
SESSNAME(*);
DUMP xxxINGRP xxxxGROUP(*)
xxxNAME(*);

DUMP SYSLINK FROMCSYS(*)
TOCSYS(*);

where:

• xxxxDEF is the CICS resource definition type. Examples are CONNDEF, FILEDEF, and MAPDEF, the xxxx string representing either a 3- or 4- character string and is the same for xxxxDEF, xxxxNAME, and xxxxGROUP.
• xxxxNAME is the name of the CICS resource definition, given as an attribute in the xxxxINGRP resource table.
• xxxxGROUP is the name of the resource group to which the resource definition belongs, given as an attribute in the xxxxINGRP resource table.
• xxxxINGRP is the CICSPlex SM Business Application Services definition describing the membership of the CICS resource definition in a resource group. Examples are CONINGRP, FILINGRP, and MAPINGRP.

Note: The xxxxDEF and xxxxINGRP resource tables also include version attributes, which enable you to process a specific version of the record. You can specify:

• DEFVER(n) for an xxxxDEF record
• xxxxVER(n) for an xxxxINGRP record

Example 7 - Adding a CICS system to a CICS system group
This example illustrates how to add a CICS system to a system group.

To add a CICS system to a CICS system group associated with a monitor specification, and to create the link between the CICS system and the monitor specification, you might specify:

CONTEXT EYUPLX01;
CREATE CSGLCGCS GROUP(EYUCSG01) CICSNAME(EYUMAS1A);
CREATE LNKSMSCS SPEC(MONSPC01) SYSTEM(EYUMAS1A);

When used to create a CICS system to CICS system group link record (CSGLCGCS) with the system group already associated with a specification, the batched repository-update facility does not create a specification-to-CICS system link record (LNKSxSCS). To associate the CICS system with the specification, the LNKSxSCS record must be created explicitly.

Managing a CMAS configuration
You can get information about managing a CMAS configuration by clicking CICSPlex SM operations.

From this menu you can open the following CMAS configuration views:

• CMASs known to local CMAS
• CICSplices managed by CMAS
• CMASs managing CICSplex
• CMAS to CMAS links
• CMAS to MAS links
CMAS configuration definitions and their related views

CMAS configuration definitions are stored in the data repository associated with the CMAS identified as the maintenance point for the CICSpelix. This CMAS ensures that any other CMASs involved in managing the CICSpelix also know about the configuration definitions.

Figure 3 on page 30 illustrates the relationship between a CMAS configuration and the WUI views used to create and maintain that configuration.

Additional views that you can use to manage configuration definitions once their associated CMASs or CICS systems are active are described in “Managing a CMAS configuration” on page 29.

Online help is available for each view and for the fields in each view. You can access CMAS configuration views from the main menu by clicking Administration > CMAS configuration administration. For additional information about accessing these views, see “Accessing Web User Interface administration views” on page 1 and the detailed description of each view.

Remember: Unless noted otherwise, only the context setting is recognized when you are creating and maintaining configuration definitions. For additional information about setting the context to a CMAS, see “Setting the CMAS context, context and scope” on page 1.

Working with maintenance point CMASs

A CMAS provides the single-system image of the CICS systems comprising each CICSpelix it manages.

To do this, the CMAS uses the CICSpelix SM definitions stored in the data repository. There is one data repository for each CMAS that you establish.

When a CICSpelix consists of a large number of CICS systems or when the systems are spread across multiple MVS™ images, you may want multiple CMASs to be involved in managing the CICSpelix. In cases like this, one of the CMASs is identified as the maintenance point for the CICSpelix. The maintenance point CMAS is responsible for informing the other CMASs when any administration definitions relating to the
CICSpex are added, updated, or changed. This ensures that the data repository for each CMAS involved in managing a CICSpex contains the same information.

If the maintenance point CMAS is unavailable when you attempt to perform an administration task, you will see an error message to this effect at the top of the related tabular view. Click the error message number to display the full text of message, which contains explanatory information and help on how to proceed.

**Note:** When the maintenance point becomes available, you must remember that any changes made while the maintenance point CMAS was unavailable will be ignored.

You can remove the association between a CMAS and a CICSpex, as long as the CMAS is not the maintenance point for the CICSpex.

**CAUTION:** Do not change the maintenance point CMAS for a CICSpex. If you need to move the maintenance point CMAS from one z/OS image to another, submit the existing CMAS to run on the new z/OS image without changing any of its attributes.

Each CMAS is identified by four attributes:

- jobname
- VTAM® applid
- CICSpex SM name
- CICS SYSIDNT

Although it is possible to change the `jobname` and z/OS Communications Server `applid` of a CMAS, it is not possible to change the CICSpex SM name and the CICS SYSIDNT. If it is necessary to have a different CICSpex SM name or CICS SYSIDNT for a CMAS, you must create a new CMAS with the attributes you want.

If you must change the CICSpex SM name and/or CICS SYSIDNT of the maintenance point CMAS, which creates a different CMAS to be the maintenance point CMAS, you need to remove the CICSpex and all of its associated definitions from the data repository and redefine them to the new CMAS, as follows:

1. Display the Administration > CMAS configuration administration > CMAS in CICSpex definitions view (CPLXCMA object). Set the CMAS context field to the old maintenance point CMAS and the CICSpex field to the name of the CICSpex, then click Refresh. A list of all CMASs that participate in the management of the CICSpex is displayed.

2. Terminate normally all CMASs that participate in the management of the CICSpex. To do this:
   - From the main menu, click CICSpex SM operations > CMASs known to local CMAS.
   - Click a CMAS name to display the CMAS detail view (CMAS object).
   - Click the Shutdown... button. The Shutdown view is displayed. Click Yes to confirm that the CMAS is to be shut down.
   - Repeat this process for each CMAS participating in the management of the CICSpex.

   Alternatively, you can use either the CICSpex SM API equivalent or the COSD transaction. It is imperative that you terminate the CMASs normally to ensure the integrity of the data repositories for the next step.

3. Back up the data repositories for each CMAS that participates in the management of the CICSpex.

4. Start all CMASs that currently participate in the management of the CICSpex.

5. With the context set to the old maintenance point CMAS, use the batched repository-update facility DUMP command to extract all the CICSpex SM definitions associated with the CICSpex from the data repository.

   See the description of the DUMP command in “Creating and maintaining CICSpex SM definitions” on page 13 for guidance on ordering the command. This also describes possible editing requirements for the command output before it can be used as input in creating the new maintenance point CMAS. Also, see “Creating a data set for re-input to the batched repository-update facility” on page 18 for further guidance.
6. If the WUI server is defined as a MAS within the CICSpex, leave it running. Ensure that all other MASs for the CICSpex are terminated. You can verify this through the **MASs known to CICSpex** view (MAS object), specifying the CICSpex as the context and scope for the view.

7. Ensure that all CMASs that participate in the management of the CICSpex are active and connected, either directly or indirectly, to the maintenance point CMAS. You can verify this through the **CICSpex SM operations > CMASs known to local CMAS** view (CMASLIST object), with the context set to the old maintenance point CMAS.

8. With the context still set to the old maintenance point CMAS, use the **Administration > CMAS configuration administration > CMAS in CICSpex definitions** view (CPLXCMAS object) to completely remove all non-maintenance point CMASs from the CICSpex.

9. If the WUI server is not defined as a MAS within the CICSpex, use the **Administration > CMAS configuration administration > CICSpex definitions** view (PLEXDEF object) view to remove the CICSpex definition from the data repository.

If the WUI server is a MAS within the CICSpex, terminate the WUI server. Then use a CICSpex SM API program to issue a REMOVE action against the PLEXDEF definition for the CICSpex.

All of the topology, workload management, real-time analysis, resource monitoring, and business application services definitions associated with that CICSpex are also removed from the data repository.

10. Terminate all CMASs in the network, whether or not they participate in the management of the CICSpex, by using the CICSpex SM API or the COSD transaction.

11. Start the CMAS that is to be defined as the new maintenance point for the CICSpex.

12. With the context set to the CMAS that is to be the new maintenance point for the CICSpex, use the EYU9XDBT utility to create the CICSpex definition on the new maintenance point CMAS. An example of using the EYU9XDBT DEFINE CICSPLEX command is included in the EYUJXBT1 sample. That sample goes on to define CICS regions and groups. You just need to define the CICSpex.

13. Using the output from the DUMP command, submit a batched repository-update facility job to re-create all the CICSpex SM definitions for the CICSpex on the new CMAS data repository. For an example of using DUMP output from the batched repository-update facility to create new definitions, see “Examples of managing records in the data repository” on page 27.

14. With the maintenance point CMAS still active, start all the other CMASs in the network.

15. For each CMAS that should have a connection to the maintenance point CMAS, use the EYU9XDBT utility to create the CMTCMDEF definitions.

16. Start a WUI server that is accessible from the new maintenance point CMAS either within the CICSpex you are moving or in a separate CICSpex.

17. With the CMAS context set to the new maintenance point CMAS, use the WUI **Administration > CMAS configuration administration > CICSpex definitions** view (PLEXDEF object) to assign the non-maintenance point CMASs to the CICSpex.

18. Update the EYUPARMs for all MASs that are to connect to the maintenance point CMAS, ensuring that if CMASSYSID is specified, it points to the maintenance point.

19. Start the MASs that are included in the CICSpex.

**Managing CMAS to CMAS links**

To manage the direct LU 6.2 and MRO communication links between the local CMAS and any other CMAS click **Administration views > CMAS configuration administration views > CMAS to CMAS link definitions**.

This view allows you to create, update and remove links.

**Updating a CMAS to CMAS link definition description**

Follow this procedure to update a CMAS to CMAS link definition description in the data repository.

1. Select a link definition from the **CMAS to CMAS link definitions** view and click the **Update** action button.
The CMAS to CMAS link definitions create panel is displayed containing details of the selected link. You can modify only the Description field.

2. Update the description and click Yes to update the link definition in the data repository.

Removing a CMAS to CMAS link definition description
Follow this procedure to remove a CMAS link definition from the data repository of the local CMAS.

1. Select a link definition from the CMAS to CMAS link definitions view and click Remove.

   A confirmation panel is displayed.

2. Click Yes to remove the link definition from the data repository or click No to return.

Managing CMAS restarts
When you restart a CMAS in a CICSpex environment, the restart might be a cold or warm start, depending on whether the data spaces that the CMAS used previously still exist. You should be aware of the circumstances under which a cold or warm start occurs and the difference between cold and warm starts.

When the CMAS starts, if no data spaces that the CMAS used the last time it was active still exist, the start is a CMAS cold start; if such data spaces exist, the start is a CMAS warm start.

Note: You cannot specify whether the restart of a CMAS is a cold or warm start. The CICS START system initialization parameter does not affect the restart of a CMAS in a CICSpex.

The CICSpex SM data spaces are associated with CICSpex SM components. There are two types of CICSpex SM data spaces:

Private data spaces
Data spaces that are used by the CMAS only

Shared data spaces
Data spaces that are shared with both the MAS and batch API address spaces that connect to the CMAS

Table 2. Types of CICSpex SM data spaces and associated components. The table lists, by the data space type, CICSpex SM components and the associated data spaces. In the table, x in the data space prefix is a number ranging from one up to the number of data spaces that are allocated for the component. The Data Cache Manager component has only one data space. The data space names are all suffixed by the CICS SYSIDNT parameter for the CMAS.

<table>
<thead>
<tr>
<th>Type of data spaces</th>
<th>Component name</th>
<th>Data space prefix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private</td>
<td>Business Application Services</td>
<td>BASx</td>
</tr>
<tr>
<td></td>
<td>Communications</td>
<td>COMx</td>
</tr>
<tr>
<td></td>
<td>Monitor Services</td>
<td>MONx</td>
</tr>
<tr>
<td></td>
<td>Real-time analysis</td>
<td>RTAx</td>
</tr>
<tr>
<td>Shared</td>
<td>Data Cache Manager</td>
<td>DMDS</td>
</tr>
<tr>
<td></td>
<td>Data Repository</td>
<td>DATx</td>
</tr>
<tr>
<td></td>
<td>Managed Application System</td>
<td>MASx</td>
</tr>
<tr>
<td></td>
<td>Queue Manager</td>
<td>QUEx</td>
</tr>
<tr>
<td></td>
<td>Topology Services</td>
<td>TOPx</td>
</tr>
<tr>
<td></td>
<td>Workload Manager</td>
<td>WLMx</td>
</tr>
</tbody>
</table>

When does a CMAS warm start occur
When a CMAS terminates, private data spaces are deleted, but shared data spaces are deleted only when no encumbrances are held on the shared data spaces. If the shared data spaces still exist by the time the CMAS is restarted, a CMAS warm start occurs.
When each MAS or batch API address space connects to the CMAS, the MAS or batch API address space has access to and holds an encumbrance on the shared data spaces.

For a MAS, the encumbrance lasts until the MAS is terminated or until the MAS agent within the MAS is terminated.

For a batch API address space, the encumbrance lasts until the batch API address space terminates, or until every thread that is created by the address space is either disconnected by the EXEC CPSM DISCONNECT command or terminated by the EXEC CPSM TERMINATE command.

If any MAS or batch API address space encumbrances exist when the CMAS terminates, the shared data spaces are not deleted. If the encumbrances still hold when the CMAS is restarted, the restart is a warm start.

**When does a CMAS cold start occur**

If no MAS or batch API address space encumbrances exist when the CMAS terminates, both the private and shared data spaces are deleted upon the termination of the CMAS. Any subsequent CMAS start is a cold start because no data spaces are active.

If there are encumbrances on the CMAS but the encumbrances end before the CMAS is restarted, the restart is a cold start.

**What is the difference between a cold start and a warm start**

For a cold start, the CMAS creates both the private and shared data spaces. For a warm start, the CMAS creates the private data spaces, retains the DMDS, DATx, WLMx, and MASx shared data spaces, but deletes and re-creates the QUEx and TOPx shared data spaces.

Generally, it does not matter whether a CMAS restart is a cold or warm start.

The CICSPlex SM system parameter CACHEDSNUM can be changed only on a CICSPlex SM CMAS cold start.

**How do you ensure that a CMAS cold start occurs**

If you need to perform a CMAS cold start, you must ensure that the data spaces for the CMAS no longer exist before starting the CMAS. So, after the CMAS, the connected MAS regions, and all batch API programs are terminated, issue the MVS display job command for the Environment Services System Services (ESSS) address space on the LPAR. With this command, you can verify that the WLM data spaces are deleted. The format of this command is as follows:

```
D J,EYUXvrm
```

where *vrm* is the CICSPlex SM release number of the CMAS. For example, for CICSPlex SM V5R4M0, the command is

```
D J,EYUX540
```

This command shows the data spaces for the specified CICSPlex SM release on that LPAR.

To know what encumbrances exist for a CMAS, run the CICSPlex SM EYU9XENF utility. This utility displays all CMASs that are connected to the ESSS, even though some might have already terminated. For each listed CMAS, this utility also displays the MAS and API address spaces that are still connected to the shared data spaces of the CMAS.

---

34 CICS TS for z/OS: CICSPlex SM Managing Business Applications
Managing CICSplex definitions
To display information about the CICSplexes associated with the local CMAS click Administration views
->CMAS configuration administration views-->CICSplex definitions. This tabular view lists the
CICSplexes defined to the local CMAS.

Unassigning a CMAS from a CICSplex definition
When you remove a CMAS involved in managing a CICSplex, the action you take depends on the state of
communications between the CMAS to be removed and the maintenance point CMAS.

Before you use the unassign action ensure that there are no active MASs in the updated CICSplex
connected to the CMAS to be removed.

• When the CMAS to be removed is currently accessible, or will be accessible later, to the maintenance
point CMAS you must do the following:
  – Select the check box associated with the CMAS to be removed and click Unassign
  – Click Yes to remove the selected CMAS from the CICSplex
    This action causes the selected CMAS to be immediately removed from the management of the
    CICSplex in the data repository for the maintenance point CMAS. Then, if the selected CMAS is
currently accessible, its data repository is updated to reflect this change; otherwise, the action is
placed in a pending status until the selected CMAS becomes accessible.

• When the CMAS is not currently accessible and will never be accessible to the local CMAS, do the
following:
  – Select the check box associated with the CMAS to be removed and click Unassign
  – Select the FORCE check box from the Unassign view
  – Click Yes to remove the selected CMAS from the CICSplex
    This action causes the selected CMAS to be removed from the management of the CICSplex in the
data repository for the maintenance point CMAS. Because the selected CMAS is not accessible, the
data repository for the selected CMAS is not altered to reflect this change.

Note: You cannot remove the association between a CICSplex and the maintenance point CMAS. If you
determine that a different CMAS should be the maintenance point CMAS for the CICSplex, the entire
CICSplex and all of its definitions must be deleted and recreated on the new maintenance point CMAS.

Managing topology definitions
You can manage topology definitions in the WUI using a series of views accessed by clicking
Administration views > Topology administration views.

Reminder: Unless noted otherwise, only the context setting is recognized when you are creating and
maintaining topology definitions.

The remainder of this section describes how to use the WUI to perform topology tasks.

Topology definitions
Topology definitions are stored in the data repositories for all CMASs participating in the management of
the CICSplex.

Figure 4 on page 36 illustrates the relationship between the topology definitions establishing a CICSplex
and the views used to create and maintain those definitions. For additional information about the data
repository, see “Working with maintenance point CMASs” on page 30.
In addition, you can use the CICSPlex SM operations views > MASs known to CICSpex (EYUSTARTMAS) view to manage an active CICS system as described in “Working with MAS topology definitions” on page 45.

Note: Using the Administration views > RTA system availability monitoring > CICS system definitions and Administration views > RTA system availability monitoring > Time period definitions views to update definitions affects both a currently running system and the definitions in the data repository.

Managing CICS system group definitions
A CICS system group identifies a subset of the CICS systems comprising a CICSpex. Each subset can consist of one or more CICS systems, CICS system groups, or both. They are referred to as the members of a CICS system group.

Working with CICS system definitions
In order to be managed by CICSpex SM, a CICS system must be associated with a CICSpex that is defined to CICSpex SM.
Managing time period definitions
A time period definition identifies a specific range of hours and minutes. These definitions are used with resource monitoring and real-time analysis to designate when specific actions are to start and stop.

Creating time period definitions
Some CICSPlex SM functions can be activated and deactivated automatically at specific times.

For example, you can tell CICSPlex SM to install a particular monitor definition at 10:45 and remove it at 15:00. You define these from-and-to times to CICSPlex SM via time period definitions. It is a good idea to create some standard time period definitions when you first define your CICSpex configuration to CICSPlex SM.

In this example, you will see how to create typical time period definitions for the prime shift, for the lunch period, and for the evening hours.

1. Display any time period definitions already defined for PLXPROD1.
   a. From the main menu click Administration > Monitor administration > Time periods to open the Time period definitions tabular view.
   b. If the context is not PLXPROD1, specify PLXPROD1 in the Context field and click Refresh. The context is then fixed for all subsequent views and menus until changed.

2. Create a new time period definition.
   a. Click Create to open the Time period definitions create view.
   b. Provide the following information:
      
      Name
      PDFPRIME
      
      Description
      Prime shift
      
      Start time
      08:30
      
      End time
      18:00
      
      Time zone
      R
      
      Time zone adjustment factor
      0
      
      Note: As you are creating this definition for a standard time zone, you do not need to specify a zone adjustment.
   c. Click Yes to confirm. The Time period definitions tabular view is redisplayed showing an entry for PDFPRIME.

3. Create a second time period definition.
   a. Select the entry for PDFPRIME in the Time period definitions view, and click Create. The create time period definition panel is displayed, showing values from the PDFPRIME time period definition.
   b. Type PDFLUNCH in the Name field, 12:00 in the Start time field, 14:30 in the End time field, and "Lunch time" in the Description field. The two time zone fields are as they were for PDFPRIME.
   c. Click Yes to confirm. The Time period definitions view is redisplayed.

4. Repeat step “3” on page 37 to create a time period definition called PDFEVENG, with a Start Time of 17:30 and an End Time of 23:59.

5. Update a time period definition.
   Suppose that now you want to alter the PDFPRIME definition to change the end time to 17:30. On the Time period definitions view, select the entry for PDFPRIME and click Update. Overtype the End time
value with 17:30 and click Yes. The change takes effect immediately, and the Time period definitions view is redisplayed showing the updated definition.

Creating a time period definition
Follow this procedure to create a time period definition in the data repository.

Procedure
1. Click Administration > Topology administration > Time periods.
   The Time period definitions tabular view is shown, which displays a summary any time period definitions already defined.
2. If you want to use some of the information from an existing definition in the creation of your new definition, select an existing definition by selecting a check box in the Record column.
3. Click the Create button.
   The Time period definitions create panel is shown.
4. Provide the required information, as appropriate.
   See Time periods - PERIODEF for a description of the fields.
5. Click Yes.

Results
The new time period definition is added to the data repository and the Time period definitions panel is redisplayed.

Time zone codes
Time zone codes represent the single-character Greenwich codes, which are based on the 24 standard international time zones. Each code indicates the time zone's relationship to Greenwich Mean Time (GMT).

Table 3 on page 38 identifies the time zone codes that you can use in a time period definition.

Time zone setting in a period definition
When a period definition is for time zone A, all events controlled by that period definition become active at the same clock time, based upon the start time specified in the period definition, and the time zone, time zone adjustment, and daylight saving indicator within the entity (CMAS or CICS system).

Similarly, events become inactive at the same clock time, based upon the end time specified in the period definition, and the time zone, time zone adjustment, and daylight saving indicator within the entity (CMAS, or CICS system).

When a period definition is for a time zone other than time zone A, all events controlled by that period definition become active at exactly the same real time, regardless of the time zone in which the events are occurring. The activation time is based upon the period definition's start time, time zone, and time zone adjustment. Similarly, events controlled by that period definition become inactive at the same real time, based upon the period definition's ending time, time zone, and time zone adjustment. For both activation and deactivation, the time zone specified refers to the standard time for that time zone, regardless of whether daylight saving time is in effect.

For more information about the time zone attributes and their use, see “CICSPlex SM time zone attributes” on page 41.

Table 3. Time zone codes

<table>
<thead>
<tr>
<th>Code</th>
<th>GMT offset</th>
<th>Description</th>
<th>Code</th>
<th>GMT offset</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>n/a</td>
<td>Current local time*</td>
<td>N</td>
<td>-12</td>
<td>(West of date line)</td>
</tr>
<tr>
<td>B</td>
<td>+1</td>
<td>Central European time</td>
<td>O</td>
<td>-11</td>
<td>Bering standard time</td>
</tr>
<tr>
<td>C</td>
<td>+2</td>
<td>Eastern Europe</td>
<td>P</td>
<td>-10</td>
<td>Hawaii standard time</td>
</tr>
<tr>
<td>D</td>
<td>+3</td>
<td>Arabia</td>
<td>Q</td>
<td>-9</td>
<td>Alaska standard time</td>
</tr>
</tbody>
</table>

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Table 3. Time zone codes (continued)

<table>
<thead>
<tr>
<th>Code</th>
<th>GMT offset</th>
<th>Description</th>
<th>Code</th>
<th>GMT offset</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>+4</td>
<td>Mauritius, United Arab Emirates</td>
<td>R</td>
<td>-8</td>
<td>Pacific standard time</td>
</tr>
<tr>
<td>F</td>
<td>+5</td>
<td>Pakistan</td>
<td>S</td>
<td>-7</td>
<td>Mountain standard time</td>
</tr>
<tr>
<td>G</td>
<td>+6</td>
<td>Bay of Bengal</td>
<td>T</td>
<td>-6</td>
<td>Central standard time</td>
</tr>
<tr>
<td>H</td>
<td>+7</td>
<td>Thailand</td>
<td>U</td>
<td>-5</td>
<td>Eastern standard time</td>
</tr>
<tr>
<td>I</td>
<td>+8</td>
<td>Philippines</td>
<td>V</td>
<td>-4</td>
<td>Atlantic standard time</td>
</tr>
<tr>
<td>J</td>
<td>+9</td>
<td>Japan</td>
<td>W</td>
<td>-3</td>
<td>Greenland</td>
</tr>
<tr>
<td>K</td>
<td>+10</td>
<td>Eastern Australia</td>
<td>X</td>
<td>-2</td>
<td>Azores</td>
</tr>
<tr>
<td>L</td>
<td>+11</td>
<td>New Caledonia</td>
<td>Y</td>
<td>-1</td>
<td>West Africa</td>
</tr>
<tr>
<td>M</td>
<td>+12</td>
<td>New Zealand (East of date line)</td>
<td>Z</td>
<td>0</td>
<td>Greenwich mean time (GMT)</td>
</tr>
</tbody>
</table>

*Note: Time zone A can be specified only in a period definition*

Handling daylight saving time changes for CICSPlex SM

For sites in locations that observe daylight saving time, you must consider how to adjust and synchronize the CICS local time of all affected CMASs, MASs, and CICSPlex SM WUI regions with the z/OS MVS system time when daylight saving time starts or ends.

About this task

Consider the following questions:

How the CMAS is to adjust its local system time, following the z/OS system time change for daylight saving?

As is instructed in CMAS-related CICS system initialization parameters, you should use the system initialization parameter `AUTORESETTIME=IMMEDIATE` for the CMAS so that the local system time of the CMAS is synchronized with the z/OS system time immediately whenever you alter the system date or time-of-day in the MVS TOD clock while the CMAS is running.

`AUTORESETTIME=IMMEDIATE`, the default, makes CICS issue a `PERFORM RESET` command to synchronize the CICS time-of-day with the system time-of-day if, at the next task attach, the CICS time-of-day differs from the system time-of-day.

Although `AUTORESETTIME` has alternative settings as described in , it is not recommended to use them for the CMAS.

How the CICSPlex SM WUI region is to adjust its local system time, following the z/OS system time change for daylight saving?

The requirement to use `AUTORESETTIME=IMMEDIATE` also applies to the CICSPlex SM WUI region affected by daylight saving. For more information, see and Reviewing CICS system initialization parameters for the WUI.

How the MAS is to adjust its local system time, following the z/OS system time change for daylight saving?

`AUTORESETTIME=IMMEDIATE` is the default. But you can opt to use any one of the `AUTORESETTIME` settings for the MAS affected by daylight saving. For details, see .

How to set the CICSPlex SM daylight saving time zone attributes?

You must modify the daylight saving indicator for all affected CMASs and MASs twice a year for sites in locations that observe daylight saving time. This ensures that the CMAS time zone values, which are used in time zone calculations for time-based operations that the CMAS performs for its Monitor Services and Real-time analysis (RTA) components, are correct.
When daylight saving time starts or ends, you must specify the corresponding value in the **DAYLIGHT** attribute of the affected CMAS to reflect the time changes. If the time zone attributes of a MAS are set to **INHERIT**, you do not need to modify the MAS because any changes to the time zone values of the controlling CMAS automatically apply to the MAS.

However, if the MAS does not inherit the time zone values from the controlling CMAS, you must update the **Daylight saving in effect** (**DAYLGHTSV**) attribute of the MAS.

**Note:** The TMEZONE, TMEZONEO, and DAYLGHTSV attributes in the CPLEXDEF, CPLXCMAS, and EPLEXCHG resource tables are for documentation purposes only; these attributes are not used in time zone calculations.

### Procedure

1. Ensure that the local system time of the CMAS and that of the WUI region are synchronized with the z/OS system time when daylight saving time starts or ends.
   - If **AUTORESETTIME**=**IMMEDIATE** is in effect for the CMAS and the WUI region, the local system time is adjusted automatically with the z/OS MVS system time.
   - If an alternative **AUTORESETTIME** setting is in effect for the CMAS and the WUI region, ensure that you have a process in place to guarantee that a manual **CEMT PERFORM RESET** or **EXEC CICS PERFORM RESETTIME** command is issued immediately after altering the MVS TOD clock.

2. Specify the **Daylight saving time** (**DAYLIGHT**) attribute in the CMAS operations resource table of the CMAS.
   
   Ensure that the CMAS is active when you make the update.

   To set this attribute, you can use the **CMAS detail** (CMAS) view in the WUI, or perform a SET operation on the CMAS operations resource table.

   **Table 4. Specification of Daylight saving time (DAYLIGHT)**

<table>
<thead>
<tr>
<th>Daylight saving indicator for CMAS</th>
<th>When daylight saving time starts</th>
<th>When daylight saving time ends</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daylight saving time (DAYLIGHT)</td>
<td>YES</td>
<td>NO</td>
</tr>
</tbody>
</table>

   This operation updates the current execution of the CMAS. The update is also propagated to the CMASDEF definition resource table for the CMAS, so the updated **DAYLIGHT** value is effective on subsequent restarts of the CMAS.

3. For every MAS that does not inherit the time zone values from the CMAS, specify the **Daylight saving in effect** (**DAYLGHTSV**) attribute in the CSYSDEF definition resource table of the MAS.

   To set this attribute, you can use the **CICS system definitions** (CSYSDEF) view in the WUI, or perform an UPDATE operation on the CSYSDEF definition resource table.

   **Table 5. Specification of Daylight saving in effect (DAYLGHTSV)**

<table>
<thead>
<tr>
<th>Daylight saving indicator for MAS</th>
<th>When daylight saving time starts</th>
<th>When daylight saving time ends</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daylight saving in effect (DAYLGHTSV)</td>
<td>YES</td>
<td>NO</td>
</tr>
</tbody>
</table>

   The update takes effect the next time the CICS region or the MAS agent in the CICS region is restarted, and is effective for all subsequent restarts.

   **Note:** If a MAS is active when you update the CSYSDEF definition resource table, the update is not propagated to the current execution of the MAS.

4. If a MAS is active, you can apply the daylight saving update to the active MAS without restarting the CICS region or MAS agent by specifying the **Daylight saving in effect** (**DAYLGHTSV**) attribute in the MAS operations resource table of the MAS.
To update an active MAS, you can use the **MASs known to CICSpex (MAS)** view in the WUI, or perform a SET operation on the MAS operations resource table. This operation updates the current execution of the MAS.

**What to do next**

If your CMAS and WUI server fail to synchronize with the z/OS MVS system time, this might result in symptoms such as abend AICG or BATCHREP commands receiving timeout. To resolve this problem, you must reset the internal CICS clock for the affected CMAS and WUI region by using the `CEMT PERFORM RESET` command.

**CICSpex SM time zone attributes**

CICSpex SM uses three attributes to facilitate timing services.

These attributes and their available values are:

**Time Zone**
- B through Z

**Time Zone Offset**
- 0 through 59 minutes

**Daylight saving in effect**
- YES or NO

These attributes are used to help CICSpex SM:
- Standardize relative time values within a CICSpex
- Control CICSpex SM monitor intervals
- Schedule time-started monitor definitions, analysis definitions, and status definitions
- Schedule the time during which System Availability Monitoring (SAM) is active.

These attributes are specified for the following CICSpex SM definitions:

**CMAS**
- Using the CICSpex SM EYU9XDUT utility.

**CICSpex**
- Using the **CICSpex definitions** (CPLEXDEF) view.

**CICS system**
- Using the **CICS system definitions** (CSYSDEF) view.

**Time period**
- Using the **Time period** (PERIODEF) view.

**Attribute definitions**

Three attributes facilitate timing services.

These attributes are defined as follows:

**Time Zone**

CICSpex SM uses the international standard for time zones. This consists of 24 zones around the world, separated in time by 60 minutes each. The standard for these zones is the prime meridian, and time at the prime meridian is referred to as Greenwich Mean Time (GMT).

The area having Greenwich Mean Time is referred to as time zone Z. The next time zone to the east, where time is 60 minutes (one hour) ahead of GMT, is time zone B. When GMT is 12:00 noon, the time in time-zone B is 13:00. The next time zone to the east, 120 minutes (two hours) ahead of GMT, is time zone C. For each time zone to the east, time advances one hour, until time zone M, where local time is 12 hours ahead of GMT. Time zone M is at the international date line.
The next time zone east, time zone N, is (like time zone M) separated from GMT by 12 hours. However, because it is considered to be on the opposite side of the international date line from time zone M, it is 12 hours behind GMT. Similarly, the next time zone east, time zone O, is 11 hours behind GMT. When GMT is 12:00 noon, the time in time zone O is 01:00. For each time zone to the east, one hour is subtracted, until time zone Y, which is one hour behind GMT.

Note that there is no time zone A.

Time Zone Adjustment
Some locations around the world have implemented times that are different from GMT by times that are not 60 minute multiples. For situations such as these, CICSp lex SM uses a time zone adjustment. To define the time zone of such a location to CICSp lex SM, the time zone of the next lowest 60 minute multiple is used, and the difference, in minutes, between the 60 minute multiple and the location's time is entered as the Time Zone Adjustment. For example, when the time is 13:00 in London, England (this is GMT, or time zone Z), it is 22:00 in Tokyo, Japan (time zone J), and 22:30 in Adelaide, Australia. To define Adelaide's location to CICSp lex SM, the time zone is specified as time zone J, and the time zone adjustment is specified as 30 (to indicate that the time in Adelaide has 30 minutes added to the time in the adjacent time zone to the west).

Daylight Saving
Some locations around the world modify their time offset from GMT twice a year. Usually, the first change occurs in March or April, when local standard time (LST) is moved ahead by one hour, creating local daylight saving time (LDST). For locations in time zones Z through M, LDST is one hour farther ahead of GMT. For locations in time zones N through Y, LDST is one hour closer to GMT. In October or November, locations that use LDST usually change back to LST. Time in these locations then reverts to the standard difference from GMT.

For operation of CICSp lex SM, sites in locations that make use of LDST must modify all CMASs and MASs twice a year. This means indicating YES to daylight saving when LDST is in effect, and NO when LST is in effect. When the daylight saving indicator is NO, CICSp lex SM considers an entity in that time zone to be the normal number of hours from GMT. When the daylight saving indicator is YES, CICSp lex SM considers that entity to be one hour further ahead of GMT (than during standard time) for time zones Z through M, and one hour closer to GMT for time zones N through Y.

To change the LDST for a CMAS, set the DAYLIGHT attribute in the CMAS operation resource table. This change updates the current execution of the CMAS and is propagated to the CMASDEF definition resource table for the CMAS so that the LDST change is effective on subsequent restarts of the CMAS. If a MAS inherits the time zone attributes from its controlling CMAS, that is, the TMEZONE, TMEZONEO, and DAYLIGHTSV attributes in the CSYSDEF definition resource table for the MAS specify INHERIT, the LDST for a MAS is automatically updated when the LDST is updated for the CMAS to which the MAS is connected. Otherwise, you must update the LDST for the MAS.

To change the LDST for a MAS, set the DAYLIGHTSV attribute in the CSYSDEF definition resource table. This change takes effect the next time the CICS region or the MAS agent in the CICS region is restarted, and is effective for all subsequent restarts. If a MAS is active when its CSYSDEF definition resource table is updated, the CSYSDEF change is not effective on the active MAS. If you want to change the LDST for an active MAS without restart, you must set the DAYLIGHTSV attribute in the MAS operation resource table.

For details, see “Handling daylight saving time changes for CICSp lex SM” on page 39.

Note: After changing the system time to adjust for LDST, all CMAS must synchronize with the change. If the CICS system initialization parameter AUTORESETTIME takes the default value IMMEDIATE or is set to IMMEDIATE, the synchronization automatically takes place when the next task is attached in the CMAS. Otherwise, you need to issue the PERFORM RESE TTIME command in the CMAS. For more information about the AUTORESETTIME parameter, see Effect of daylight saving time changes.
Attribute usage
You make use of the three attributes that facilitate timing services when you specify the following definitions:

CMAS
In order to ensure consistent timing services, CICSPlex SM requires that the attribute settings within a CMAS accurately reflect the time in effect for the location in which that CMAS executes.

There are three uses for these attributes in a CMAS:

- To coordinate time services throughout a CICSpex, CICSpex SM bases all of its timing on GMT. When a CMAS is started, CICSpex SM calculates how a standard hardware clock must be modified to achieve GMT. This is done in one of two ways, depending upon the setting of the MVS CVT data field CVTTZ:
  - When the CVTTZ data field is non-zero, CICSpex SM assumes that the hardware clock value is GMT, and does not modify it.
  - When the CVTTZ data field is zero, CICSpex SM uses the time zone, time zone adjustment, and daylight savings indicator in the CMAS to calculate the value needed to modify the hardware clock.

Note that the contents of the CVTTZ data field are based upon the SYS1.PARMLIB(CLOCKxx) member:
  - If the CLOCKxx member indicates that the Sysplex Timer is in use, the CVTTZ data field is set based upon the contents of the Sysplex Timer.
  - If the CLOCKxx member indicates that the Sysplex Timer is not in use, the CVTTZ data field is set based upon the contents of the CLOCKxx member TIMEZONE operand.

- When an analysis definition or status definition is installed within an analysis point specification that is controlled by the CMAS, and the definition is scheduled for a timed install (because the definition is associated with a period definition), then the time zone, time zone adjustment and daylight savings indicator of the CMAS determine when the definition is installed, provided that the period definition indicates that the install time should be local time.

- When a CICS system is defined to CICSpex SM, the time zone, time zone adjustment and daylight savings indicator can be explicitly set, or they can be inherited from the CMAS to which the CICS system connects.

CICSpex
Because a CICSpex may encompass many different time zones, and in order to ensure consistency within the CICSpex, it is required that a single set of attributes be chosen to represent the CICSpex. It is not necessary that the attributes chosen match the attributes of the maintenance point CMAS of the CICSpex, or any other CMAS.

There is one use for the time zone attributes in a CICSpex:

- When a CICSpex becomes active, and monitoring will be active, a monitor interval is determined based upon the setting in the CICSpex definition. This monitor interval is used to reset monitor data collected from CICS system. Because each CMAS in the CICSpex stores the monitor data for the CICS systems connected to it, in order for all monitor data within the CICSpex to be consistent the reset takes place at all CMASs at exactly the same real time, regardless of the locations of the CMASs. To compute the time for the reset, the time zone attributes of the CICSpex are used.

CICS system
Unlike the attribute requirements for a CMAS, the time zone attributes for a CICS system can be set to reflect a location different from that from where the CICS system actually executes. For example, if the system executes in one time zone, but is primarily used by operators in another time zone, you may prefer to set the attributes to match the time zone of the operators, instead of matching the time zone where the system executes. CICSpex SM supports either actual or logical attributes for CICS systems.

There are three uses for these attributes in a CICS system:
When a monitor definition is installed within a monitor specification within the CICS system, and the monitor definition is scheduled for a timed install (because the monitor definition is associated with a period definition), the time zone, time zone adjustment and daylight savings indicator of the CICS system are used to determine when to install the definition, provided that the period definition indicates that the install time should be local time.

When an analysis definition or status definition is installed within an analysis specification within the CICS system, and the analysis definition is scheduled for a timed install (because the definition is associated with a period definition), the time zone, time zone adjustment, and daylight savings indicator of the CICS system are used to determine when to install the definition, provided that the period definition indicates that the install time should be local time.

When a CICS system has System Availability Monitoring (SAM) active (the CICS system definition contains both a primary CMAS and an active period), the time zone, time zone adjustment, and daylight savings indicator of the CICS system are used to determine when the system should be active, provided that the period definition indicates that the time period should be local time.

Period definition
Period definitions are used by CICSPlex SM to schedule timed events. A period definition is defined as a starting time, an ending time, and time zone attributes. Period definitions use only two of the time zone attributes: the time zone and the time zone adjustment.

There are three uses of period definitions:

- For System Availability Monitoring (SAM). This occurs when both a primary CMAS and a period definition are associated with a CICS system definition.

  **Note:** If no Period definition name is specified in the Administration views > System availability monitoring administration views > CICS system definition detail view (CICSSYS in the end user interface), SAM is not activated for that CICS system.

- For timed install of monitor definitions. This occurs when a period definition is associated with a monitor definition when the monitor definition is added to a monitor group, and the monitor group is installed into a CICS system.

- For timed install of analysis definitions and status definitions. This occurs when a period definition is associated with an analysis definition or a status definition when the definition is added to an analysis group, and the analysis group is installed into a CICS system or an analysis point specification.

For a period definition, there are two differences from other uses of the time zone attributes:

- Time zone A is accepted by a period definition. Use of time zone A indicates that the time associated with the period definition reflects the local time of the entity (CMAS or CICS system).

- When a period definition is defined with a time zone of A, the time zone adjustment specified in the period definition is ignored.

When a period definition is for time zone A, all events controlled by that period definition become active at the same clock time, based upon the start time specified in the period definition, and the time zone, time zone adjustment, and daylight saving indicator within the entity (CMAS or CICS system). Similarly, events become inactive at the same clock time, based upon the end time specified in the period definition, and the time zone, time zone adjustment, and daylight saving indicator within the entity (CMAS or CICS system).

When a period definition is for a time zone other than time zone A, all events controlled by that period definition become active at exactly the same real time, regardless of the time zone in which the events are occurring. The activation time is based upon the period definition’s start time, time zone, and time zone adjustment. Similarly, events controlled by that period definition become inactive at the same real time, based upon the period definition’s ending time, time zone, and time zone adjustment. For both activation and deactivation, the time zone specified refers to the standard time for that time zone (LST), regardless of whether daylight saving time is in effect.
Working with MAS topology definitions

This section describes how you can obtain information about active CICS systems using the MASs known to CICSplex (EYU9XLOP) view.

Stopping an active MAS
Follow these steps to stop MAS agent code within an active CICS system.

1. Click CICSPlex SM operations view > MASs known to CICSplex.
   This opens the MASs known to CICSplex tabular view, which displays information about CICS systems that are known to the CICSplex identified as the context.
2. Select one or more of the listed CICS systems.
3. Click Stop and confirm the action by clicking Yes on the confirmation screen.

Note: When the Workload manager status field for a CICS system contains YES, you may not be able to stop the MAS agent code. If the CICS system is acting as a requesting region, you cannot stop the MAS agent code. (To determine which CICS systems are acting as requesting regions, click Active workloads (WLM) > Active workload target distribution factors.)

If you want to stop the MAS agent code in a CICS system of this type, you must first change the dynamic routing program to something other than EYU9XLOP. (You can use the CICS regions view to change the dynamic routing program.)

Updating an active MAS
Follow this procedure to update an active MAS.

Any changes that you make to a CICS system definition take effect immediately. They remain in effect as long as the CICS system is active or until you change them again.

Note: If you turn on workload management, real-time analysis, or resource monitoring from these panels, their status will not be shown as active until the component is fully initialized.

1. Click CICSPlex SM operations view > MASs known to CICSplex.
   This opens the MASs known to CICSplex (MAS) view, which displays information about CICS systems that are known to the CICSplex identified as the context.
2. Click the CICS system name column of one of the listed active CICS systems to open the MASs known to CICSplex detail view. On this view you can update monitoring, RTA and WLM status of the selected active CICS system. You can also alter time zone and security attributes.

   For more information about the Time Zone, Time Zone Offset, and Daylight Time attributes, see the description of CICSPlex SM time zone attributes in “CICSPlex SM time zone attributes” on page 41.
3. To apply the changes you have made to the active CICS system, click Apply changes. The changes take effect immediately and remain in effect until you change them or the CICS system stops.

Enabling a CMAS to send generic alerts to NetView

This example task is part of a larger, real-time analysis task that requires you to update a CMAS definition. This example illustrates only the CMAS-related part of the task.

If you want CICSPlex SM to send SNA generic alerts to NetView®, the NetView program to program interface (PPI) must be activated in the relevant CMAS. (This is the CMAS on the same MVS image as the NetView instance.) This example shows how to activate the NetView PPI in a given CMAS, CMSSYS1.

1. First, check that the context is correct (CMSSYS1 in this example). If it is not, change the context field to CMSSYS1 in the current view and click Set. The context is then fixed for all subsequent views and menus until changed.
2. Display the CMAS definition.
   a. From the main menu click CICSPlex SM operations views --> CMASs known to local CMAS to open the CMASs known to local CMAS tabular view.
b. If the context is not CMSSYS1, specify CMSSYS1 in the **Context** field and click **Refresh**. The context is then fixed for all subsequent views and menus until changed.

c. Locate the entry for CMSSYS1 and click **Local** in the **Type of access** field to open the **CMAS detail** view.

3. Update the CMAS definition.

   On the **CMAS detail** view locate the **Netview PPI to be used** field and change the entry from **No** to **Yes**. Scroll to the bottom of the view and click **Apply changes**. The view is redisplayed, showing the updated value. The NetView PPI interface is now activated.

### Administering CICSPlex SM operations

CICSPlex SM operations views describe those Web User Interface (WUI) views that support day-to-day operation and management of the CICS resources in an enterprise.

It is intended for CICS operators who are responsible for running CICS-supplied transactions, such as the CICS Master Terminal Transaction (CEMT), to manage CICS resources.

The CICSPlex SM views mirror the functionality currently provided for CICS systems. In other words, operators can work in essentially the same way as they do now without any change in their basic approach to daily system activities. The greatest benefit of the CICSPlex SM views, however, is that they can be used to control the operation of multiple CICS systems and their resources from a single session, as if they were a single CICS system.

### Controlling CICS resources

The CICSPlex SM operations views provide a single-system image of all the CICS resources in a CICSpelx. You can use the operations views to perform the following tasks:

- Enable and disable resources
- Open and close resources
- Acquire and release resources
- Place resources in or out of service
- Purge tasks associated with a resource
- Discard resource definitions from the CICS system where they are installed
- Change various resource attributes
- Shut down a CICS system

### Availability for CICS releases

Some views, action commands, or fields are not available for all of the supported CICS releases. If a view is not available for all supported CICS releases, the **Availability** section of the view set description identifies the CICS releases for which the view set is generally available. The online help for views, actions, and fields also provides availability information. When you display a view and your CICSPlex includes systems running a release of CICS for which that view is not available, those systems are not included in the view.

### Example operations tasks

Step-by-step examples of some typical operations tasks help you to use the WUI operations views more effectively.

For any operations task, you must be aware of the scope, that is, of the CICS systems, with which you are working: if the scope is a single CICS system, any data you retrieve from CICSPlex SM relates to that single system; if the scope is a group of CICS systems, the data relates to all of the systems in the group; if the scope is a CICSpelx, the data relates to every system in that CICSpelx. For all of these examples, the initial scope is CICSpelx PLXPROD1.
Finding out how many tasks are associated with a transaction

This example shows how to find out how many tasks are associated with a transaction from the Sale example application in CICSplex PLXPROD1.

Prerequisite: To follow the example, the Sale example application needs to be installed in the CICS systems. See The Sale example application for more details. Enter transaction PAY1 at one or more terminals of the CICS systems being used.

This example assumes that you are interested to find out how many tasks are associated with transaction PAY1 throughout the CICSplex PLXPROD1

1. If the current context isn't PLXPROD1, on the main menu, set the Context field to PLXPROD1.
2. From the main menu, click Active tasks to display the Active tasks tabular view (TASK object), which shows all the active tasks for CICSplex PLXPROD1.
3. Type PAY1 into the Transaction field and click Refresh. The Active tasks tabular view is redisplayed, showing only those tasks associated with transaction ID PAY1. A message at the top and bottom of the display tells you how many tasks are active and the number of pages.
4. Click the Summarize icon at the top of the Task ID column. The Active tasks tabular view is redisplayed showing the summarized task data. The record count field gives the number of tasks associated with PAY1 throughout the CICSplex.

Identifying the tasks associated with a transaction

In this example, you'll see how to identify the tasks associated with an instance of a transaction from the Sale example application in CICSplex PLXPROD1.

Prerequisite: To follow the example, the Sale example application needs to be installed in the CICS systems. See The Sale example application for more details. Enter transaction PAY1 at one or more terminals of the CICS systems being used.

1. If the current context isn't PLXPROD1, on the main menu, type PLXPROD1 into the Context field and click Refresh.
2. From the main menu, click Active tasks. The Active tasks tabular view, showing the status of all tasks in the current scope, is displayed.
3. Assume that you are interested in transaction PAY1 in CICS system CICSPA01. Type these values into the Transaction and Scope fields and click Refresh.
4. Click the Task ID to display the Active tasks detailed view.
5. Scroll down the display to the Local unit of work (UOW) ID field, and note or copy its value. An example value could be one similar to 8286F48104090001.
6. From the main menu, click CICS operations > Unit of Work (UOW) operations views > Unit of work. The Unit of work tabular view is displayed.
7. Type or paste the UOW ID into the Local unit of work (UOW) ID field and click Refresh. You can summarize the Unit of work tabular view by clicking the Summarize icon at the top of the Local unit of work (UOW) ID column, but as this view typically covers a large number of pages, it is quicker to use the Local unit of work (UOW) ID field.

Note that if monitoring is inactive in a CICS system, the network Unit of Work ID is not available.

Relating a set of tasks to a user ID

In this example, you'll see how to identify the tasks associated with particular user ID.

1. If the current context isn't PLXPROD1, on the main menu, type PLXPROD1 into the Context field and click Refresh.
2. From the main menu, click Active tasks. The Active tasks tabular view, showing the status of all tasks in the current scope, is displayed.
3. To summarize the list of tasks by User ID, click the Summarize icon at the top of the User ID column. The Active tasks tabular view, showing the TASK data summarized by user ID, is displayed. The Record count column tells you how many tasks are associated with each user ID.
4. To display a list of tasks associated with a single user ID, click on record count for the user. The **Active tasks** tabular view is redisplayed showing just the tasks associated with that user.

**Checking the status of a terminal**

This example shows some of the ways in which you can check the status of a terminal.

To display information about all the terminals in the current context:

- From the main menu, set the **Context** field to PLZPROD1 and click **Refresh**, if necessary.
- Click **Terminals** to display the **Terminals** tabular view (TERMNL object).
- Type the terminal ID into the **Terminal ID** and click **Refresh**. The **Terminals** tabular view is redisplayed showing the status of each terminal for each CICS system it is logged on to: if a terminal is logged on to three CICS systems, it will have three entries in the **Terminals** tabular view.
- If you don't know the terminal ID, but are interested in terminals related to a particular user ID, click the Summarize icon at the top of the **User ID** column. Click the **Record count** field to redisplay the **Terminals** tabular view showing the terminals associated with a particular user.

**Checking the status of a communications link**

This example shows how you can check the status of a communications link.

1. If the current context isn't PLXPROD1, from the main menu type PLXPROD1 into the **Context** field and click **Refresh**.
2. From the main menu, click **ISC/MRO connections**. This view shows all the connections in the current scope.
3. Use the **Connection ID** and **Net Name** fields to refine the display.
4. To display details of a single connection, click the **Connection ID** field to display the detailed view.

**Finding out which CICS systems a file is available to**

This example shows how to identify the CICS systems that are able to use a particular file.

1. If the current context isn't PLXPROD1, from the main menu type PLXPROD1 into the **Context** field and click **Refresh**.
2. To display a list of local files, from the main menu, click **Local files**. The **Local files** tabular view (LOCFILE object) is displayed.
3. Refine the display using the **File ID**, **Enablement status** and **Open status** fields. Note that you do not have to use a specific file name; you can use generic names with wild card characters, for example PAY* to display all files that have PAY as the first three characters of their names.

**Correlating local and remote file names**

In this example, you'll see how to relate the name by which a particular file is known in a local CICS system to the name by which it is known in a remote CICS system.

1. If the current context isn't PLXPROD1, from the main menu, type PLXPROD1 into the **Context** field and click **Refresh**.
2. To display a list of remote file definitions, from the main menu, click **Remote files**. The **Remote files** tabular display (REMFILE object) is displayed.

You can learn several things from this **Remote files** view:

- You can see the number of remote-file definitions installed in CICSPlex PLXPROD1, the names by which these files are known, for example PAYFILER, and the systems in which the remote file definitions are installed, for example CICSPA01 and CICSPAY02.
- The **Remote file names** field contains the name by which the files are known in the CICS systems in which these are **local** files; for example, both files are known as PAYFILE1.
• The name of the connection, for example AF01, between the CICS systems in which these files are known as local files. (This latter value is referred to as the "remote system name", but in fact it is a connection ID.)

3. Use connection name AF01 to find out the name of the remote CICS system.
   • From the main menu, click **ISC and MRO connections** to display the **Connections** tabular view.
   • If necessary, you can refine the data displayed by typing AF01 into the **Connection ID** field and clicking **Refresh**.
   • Note the remote system name for the connection, for example CICSAF01, which is given in the **Net name** field.

4. The next step is to look at all local files called PAYFILE1 in the remote CICS system.
   • Change the scope, so that any data you get back from CICSPlex SM relates only to CICSAF01. To do this, from the main menu, type CICSAF01 into the **Scope** field and click **Refresh**.
   • From the main menu, click **Local files**.
   • On the **Local files** tabular view, type PAYFILE1 into the **File ID** field and click **Refresh**.
   • The **Local files** tabular view is redisplayed showing PAYFILE1 in CICS system CICSAF01.

**Finding out which data set a program came from in a specified CICS system**
This example shows how to identify the data set from which a particular instance of a program originated.

1. If the current context isn't PLXPROD1, from the main menu, type PLXPROD1 into the **Context** field and click **Refresh**.

2. To display detailed information about a program in a specified CICS system, from the main menu, click **CICS operations > Program operations views**.

3. From the Programs tabular view, type the program name PRGPAYR1 into the **Program name** field and CICS system name CICSPA01 into the **Scope** field. Click **Refresh**.

4. Click the **Program name** field for PRGPAYR1 to display the **Programs** detailed view. The **Programs** detailed view is displayed, showing the LIBRARY name and the load data set name for CICSPA01.

**Finding out why a CICSPlex SM event occurred**
This example shows you how to investigate what caused a real-time analysis event notification RTDPAY01 to be issued.

1. If the current context isn't PLXPROD1, change the **Context field** on the main menu to PLXPROD1 and click **Set**.

2. From the main menu, click **Real Time Analysis (RTA) outstanding events** to display the **RTA outstanding events** tabular view.

3. This view will show you that the CONNSTATUS value of the connection has triggered the event and that its current value is RELEASED. This might tell you all you need to know. If it doesn't, you can investigate further as described in the remaining steps of this example.

4. Look at the associated evaluation definition. To access this:

   • From the main menu, click **Administration > RTA analysis point monitoring > Evaluations** to display the **Evaluation definitions** tabular view.

   • Click the **Name** field of the entry you are interested in to display **Evaluation definitions** detailed view.

   From this view, you can see that event RTDPAY01 is triggered when the value of the **CONNSTATUS** field in the CONNECT resource table is not ACQUIRED. (The **Field being evaluated** field is CONNSTATUS, the **Evaluation logical operator** field is NE (meaning "not equal to"); and the **Evaluation data value** field is ACQUIRED).

5. Next, you could look at the **ISC/MRO connections** view (CONNECT object):
• From the main menu, click ISC/MRO connections to display the ISC/MRO connections tabular view.
• If necessary, change the Scope field to CICSPT01 and click Refresh.
• The ISC/MRO connections tabular view displays a list of connections for CICS system CICSPT01

Disabling a transaction in a single CICS system
This example shows you how to disable transaction PAY1 in CICS system CICSPA01. (CICSPA01 is in the CICSpex PLXPROD1, which is the current scope.) There are two ways of doing this.
For example, you can:
1. List all local transactions. From the main menu, click Local or dynamic transactions. The Local or dynamic transactions tabular view (LOCTRAN object), showing all local transactions in the current scope (PLXPROD1), is displayed.
2. To refine the display, type CICSPA01 in the Scope field, PAY1 in the Transaction ID field, and ENABLED in the Enabled status field. Click Refresh.
3. Click the Record check box beside the transaction and click the Disable... button.
4. The Disable view is displayed. Click Yes. The Local or dynamic transactions tabular view is redisplayed, showing the status of the transaction instance as DISABLED.

or you can:
1. List all local transactions. From the main menu, click Local or dynamic transactions. The Local or dynamic transactions tabular view (LOCTRAN object), showing all local transactions in the current scope (PLXPROD1), is displayed.
2. To refine the display, type CICSPA01 in the Scope field, PAY1 in the Transaction ID field, and ENABLED in the Enabled status field. Click Refresh.
3. Click the Transaction ID field for PAY1 to display the Local or dynamic transactions detailed view.
4. Use the drop-down menu to change the value of the Enabled status field to DISABLED. Click the Apply changes button. The Local or dynamic transactions tabular view is redisplayed showing a DISABLED status for transaction PAY1.

Disabling a transaction globally
This example shows how to disable a single transaction throughout a scope.
1. If the current context isn't PLXPROD1, on the main menu, type PLXPROD1 into the Context field and click Refresh.
2. From the main menu, click Local and dynamic transactions. The Local and dynamic transactions tabular view is displayed.
3. Type PAY1 in the Transaction ID field and click Refresh. The Local and dynamic transactions tabular view is redisplayed showing the instances of transaction PAY1.
4. Summarize the list of transaction instances. Click the Summarize icon at the top of the Transaction ID column. The Local and dynamic transactions tabular view is redisplayed showing one line for transaction PAY1 with a Record count field giving the number of instances of the transaction PAY1 in the current scope.
5. To disable every occurrence of transaction PAY1 represented in this summary line, click the Record check box and click the Disable... button. The Disable view is displayed.
6. Click the Yes to n remaining button, where n is the number of instances of the transaction. The Local and dynamic transactions tabular view is redisplayed, showing the summary line with the Enabled status field set to DISABLED.

Note: You can disable each transaction individually by clicking the Yes button, but this is inefficient unless there is a good reason.
Finding out which resources are being monitored in a CICS system

This example shows how to find out which types of resource are being monitored in CICS system CICSPA01.

1. From the main menu, click Monitoring > Active monitor specifications.
2. If the current context is not PLXPROD1, specify PLXPROD1 in the Context field.
3. In the Scope field, type in CICSPA01 and click Refresh.

   The Active monitor specifications tabular view now displays the active monitor definitions in CICS system CICSPA01.

For a more complete description of the Active monitor specifications view, see Default monitor definitions.

Deactivating a workload definition

This example describes how to use the Web User Interface (WUI) to deactivate the workload definition WLDPAY02.

1. Display active workload definitions:
   • From the main menu, click Active workloads (WLM) > Definitions. This opens the Active workload definitions view.
     If the current context is not PLXPROD1, specify PLXPROD1 in the Context field and click Refresh.
   • In the Active workload definitions view, type WLSPAY01 and click Refresh. The active workload definitions associated with workload specification WLSPAY01 are listed.
2. Discard workload definition WLDPAY02:
   a. Select the entry for WLDPAY02, and click the Discard... button. This opens the Discard confirmation view.
   b. Click Yes to confirm the action.

Be aware that, when you deactivate an active workload definition, you also deactivate any transaction groups associated with it if they aren't referenced by another workload definition in the same workload.

Discarding an active transaction from a workload

This example shows you how to discard an active transaction PAY2 from a workload EYUWLS02.

1. If the current context isn't PLXPROD1, on the main menu, type PLXPROD1 into the Context field.
2. From the main menu, click Active workloads (WLM) > Dynamic transactions. The Active workload dynamic transaction tabular view (WLMATRAN object) is displayed.
3. If necessary, you can refine the display using the Workload name, System ID of workload owner, and Transaction fields.
4. To discard transaction PAY2, click the record check box beside the entry and click the Force... button. The Force confirmation view is displayed.
5. Click the Yes button to confirm the action. The Active workload dynamic transaction tabular view is redispayed, minus the entry for PAY2.

Administering BAS

You can use business application services to manage CICS resources.

Introduction to BAS

Business Application Services is the component of CICSPlex SM that is responsible for managing the CICS resource definition and installation process for business applications at your enterprise.

Business Application Services provides the following facilities:
Centralized resource definition
With BAS, you can implement resource definition and association across the entire CICSplex. The CICSPlex SM data repository (EYUDREP) can serve as the central repository for CICS resource definitions. CICSPlex SM minimizes the number of resource definitions you need for your CICSplex by:

- Providing a single-system image approach to defining CICS resources.
- Producing both local and remote instances of a resource from the attributes of a single definition.
- Managing multiple versions of a definition; for example, as the application progresses from testing to production.
- Generating multiple CICS connections from a single set of definitions.

Logical scoping
When your CICS resources are defined to CICSPlex SM, you can monitor and control those resources in terms of their participation in a named business application, rather than their physical location in the CICSpex. You can identify and refer to logically related resources as a set, regardless of where they reside at any given time.

Distributed resource installation
Resources that are defined to CICSPlex SM must still be installed in the appropriate systems, either by CICS or CICSPlex SM. You can use BAS to install your resources automatically at CICS initialization, or dynamically while a region is running. You can install a single resource in multiple CICS regions either locally or remotely, as appropriate.

Business Application Services supports the following CICS resources:

Application resources
These are the resources that support the business applications at your enterprise. They are the resources that an application requires to run:
- CICS BTS process types
- DB2 connections and transactions
- Document templates
- FEPI nodes, pools, property sets and targets
- Files and file key segment definitions
- IPIC connections
- LIBRARY resources
- Map sets
- Partition sets
- Pipeline
- Programs
- Sysplex enqueue models
- TCP/IP services
- Temporary storage models
- Transactions
- Transient data queues
- URI maps
- Web services

Region property resources
These region property resources are the global resources that support the running of a CICS region:
- Journals
- Journal models
- Local shared resource (LSR) pools
• Profiles
• Transaction classes
• Terminals
• Typeterms

Connectivity resources
These resources support the creation of connections between CICS regions and other systems:
• Connections
• Partners
• Sessions
• TCP/IP services
• IP interconnectivity (IPIC) connections

Methods of accessing BAS
CICS provides a number of interfaces for defining and managing BAS.

CICS Explorer
You can use CICS Explorer for day-to-day management of resource definitions. The CICS Explorer is a
system management tool that provides a simple, easy to use way of managing one or more CICS systems
and associated resources. Resource definitions can be created and updated using the CICS Explorer
resource definition editor.

The CICSPlex SM API
You can use the CICSPlex SM API to write external programs that automate the management of CICS
resource definitions. Such programs could be used to integrate the CICSPlex SM system management
functions into your enterprise-wide change management process. For example, you could write an API
program to coordinate resource definition changes with database or file updates, or the standard life
cycle of an application.

The Web User Interface
You can use the Web User Interface (WUI) views for the day-to-day management of resource definitions.
These views provide an immediate, interactive look at your resource definitions. You can create, update
and remove resource definitions.
The views are grouped into basic and fully-functional BAS submenus:
• The basic views restrict the management of resources to the resource description, as used by CICS
resource definition online (RDO).
• The fully functional menu, aimed at more advanced users, includes the option of managing resources by
resource assignments as well as resource descriptions.

The batched repository-update facility
The CICSPlex SM batched repository-update facility can help you to create and maintain many resource
definitions:

Defining large numbers of resources
The batched repository-update facility is ideal for creating and updating large numbers of resource
definitions. You can start with an input file that contains one CREATE command for one resource
definition and use that command as a template for other resource definitions. By copying and
customizing the CREATE command, you can quickly build all the resource definitions of a given type
that you require. When you submit the batched repository-update facility input file, CICSPlex SM
creates all the resource definitions and adds them to the data repository.
**Migrating resource definitions**

The batched repository-update facility is an essential tool for migrating resource definitions from CICS to CICSPlex SM. CICSPlex SM provides an exit routine that can extract records from an existing CSD file and generate equivalent resource definitions for input to the batched repository-update facility. For more information about the exit routine, see “Extracting records from the CSD” on page 86.

**Maintaining a centralized repository**

The batched repository-update facility is useful for migrating resource definitions from one CICS platform to another, which is key to maintaining a centralized definition repository. You can use the DUMP command to retrieve existing resource definitions from the CICSPlex SM data repository. After making the required changes to the definitions, you can use the dump output as input to another batched repository-update facility run that creates resource definitions for the new CICS platform.

**The BAS objects**

A **BAS object** is an instance of a CICS resource in the CICSPlex. Whichever interface you use to access BAS, the objects that you are interacting with are essentially the same.

There are two types of Business Application Services objects:

**Resource definition views and objects**

You use resource definition views to define instances of CICS resources. The attributes of each resource definition (xxxxDEF object) are identical to those of the equivalent CICS CEDA definition; for example, to define a CICS connection (CONNDEF object), you use the **Connection definitions** view.

**Administration objects**

You use administration objects to manage resources. These objects are split into the following areas:

**Base objects**

These objects are the foundation of BAS. They implement the assignment and installation of resources in CICS systems.

**RASGNDNF**

A resource assignment describes selected resource definitions of a given type and indicates how those resources are to be assigned to various CICS systems.

**RESDESC**

A resource description identifies sets of logically related resource definitions. The set of resources identified in a resource description can be used as the scope value for CICSPlex SM requests. The resources can also be installed as a set in CICS systems that support resource installation.

**RESGROUP**

A resource group is a set of related resource definitions. The resource definitions in a group can be of the same or different resource types.

**Association objects**

These objects control the relationships between the base administration objects and their resource definitions.

**RASINDSC**

Associates a resource assignment with a resource description.

**RESINDSC**

Associates a resource group with a resource description.

**RESINGRP**

Associates resource definitions of a given type with a resource group.

**Process display objects**

These objects illustrate how resources will be assigned to CICS systems.

**RASPROC**

Identifies the resource definitions to be selected when a given resource assignment is processed.
RDSCPROC
Identifies the resource definitions to be selected when a given resource description is processed.

SYSRES
Identifies the resources that are defined to a specified CICS system.

Connectivity objects
These objects describe the nature of connections between CICS regions and other systems.

CSYSDIF
Describes the operational characteristics of a CICS system, including resource installation options and the system ID to be used in identifying connections. You use the CICS system definition view to create connections to other CICS systems.

SYSLINK
Describes the connections that exist between CICS regions in your CICSplex. You use the CICS system link definitions view to create and install CICS connections of different types.

Comparison of CEDA and BAS functions
Table 6 on page 55 provides a comparison between CEDA administrative functions and BAS administrative functions.

<table>
<thead>
<tr>
<th>CICS CEDA</th>
<th>CICSPlex SM BAS</th>
<th>WUI view name</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEFINE resource</td>
<td>RESDEF CREATE</td>
<td>resource Definition</td>
</tr>
<tr>
<td>USERDEFINE resource</td>
<td>RESDEF CREATE against model</td>
<td>resource Definition</td>
</tr>
<tr>
<td>INSTALL resource</td>
<td>RESDEF INSTALL</td>
<td>resource Definition</td>
</tr>
<tr>
<td>VIEW resource</td>
<td>RESDEF BROWSE</td>
<td>resource Definition</td>
</tr>
<tr>
<td>ALTER resource</td>
<td>RESDEF ALTER</td>
<td>resource Definition</td>
</tr>
<tr>
<td>COPY group</td>
<td>RESGROUP CREATE members</td>
<td>Resource group definition</td>
</tr>
<tr>
<td>MOVE group</td>
<td>RESGROUP CREATE association</td>
<td>Resource group in resource description</td>
</tr>
<tr>
<td>INSTALL group</td>
<td>RESGROUP INSTALL</td>
<td>Resource group definition</td>
</tr>
<tr>
<td>DISPLAY group</td>
<td>RESGROUP</td>
<td>Resource group definition</td>
</tr>
<tr>
<td>CHECK group/list</td>
<td>Implicit - consistent set processing</td>
<td>n/a</td>
</tr>
<tr>
<td>DISPLAY list</td>
<td>RESDESC</td>
<td>Resource description definition</td>
</tr>
<tr>
<td>No equivalent</td>
<td>MAP</td>
<td>EYUSTARTMAPBAS¹</td>
</tr>
<tr>
<td>ADD group to list</td>
<td>RESGROUP ADD</td>
<td>Resource group definition</td>
</tr>
<tr>
<td>APPEND list to list</td>
<td>RESDESC CREATE model</td>
<td>n/a</td>
</tr>
<tr>
<td>EXPAND group/list</td>
<td>RESINDSC/RESINGRP</td>
<td>n/a</td>
</tr>
<tr>
<td>INSTALL list</td>
<td>RESDESC INSTALL</td>
<td>Resource description definition</td>
</tr>
<tr>
<td>DELETE</td>
<td>REMOVE</td>
<td>n/a</td>
</tr>
<tr>
<td>LOCK/UNLOCK</td>
<td>No equivalent (use security)</td>
<td>n/a</td>
</tr>
</tbody>
</table>

¹ The actual name on the view will depend on what is being mapped.
CICSPlex SM provides the same functions as the CICS CEDA transaction, with a few minor differences. CICSPlex SM performs automatically a function similar to CEDA CHECK when certain ADD or UPDATE functions are carried out.

**BAS security considerations**

Because of the importance of resource definitions to your CICSplesx environment, CICSPlex SM enables you to define security for the BAS facilities.

Providing security for BAS is handled in the same way as it is for other CICSPlex SM components. You can define as narrow or as broad a range of BAS functions as you like and authorize as few or as many people as you like to use them. For security purposes, the BAS functions are divided into the following groups:

**BAS.DEF**

This group includes all of the resource definition views and the related BAS administration views. Users with UPDATE access to this group can create, update, and remove definitions in the CICSPlex SM data repository. Users with READ access to this group can view definitions in the CICSPlex SM data repository.

**BAS.resource**

These groups are named according to the resource type they represent (such as BAS.CONNECT, for connection-related definitions). Each group includes the resource definition views for a given resource type. For example, BAS.CONNECT includes the **Connection definitions** views (CONNDEF objects) and **Session definitions** views (SESSDEF objects).

The purpose of these security groups is to further restrict a user's ability to install resources in CICS systems. A user must have ALTER access to the appropriate BAS.resource group in order to install the specified resources.

In addition to controlling access by function, you may want to limit the use of these functions to certain resources in certain CICS systems. CICSPlex SM also provides simulated CICS security checking, which enables you to control access to CICS resources and commands.

You should be aware of the need to take special care in the adequate protection of the BAS views, so that unauthorized users cannot create and administer resources.

If you are using the EXEC CICS CREATE command to build new resources, any definition created with the CICSplesx as the context is automatically distributed to all CMASs in the CICSplesx. Therefore, giving a user authority to create BAS objects is equivalent to giving authority to install resources on any CICS system in the CICSplesx. When the CICS system starts, there is no check on who installed the resource in the system.

For details on setting up security for CICSPlex SM at your enterprise, see Implementing CICSPlex SM security.

**Using the Web User Interface**

Resource definitions are the most basic element of the Business Application Services environment. CICSPlex SM must know about your CICS resources in order to manage them. Defining your resources to CICSPlex SM is similar to using RDO to define them to CICS – you specify the attributes that describe the resource in one or more WUI views. But you do not have to define every instance of every resource in your CICSplesx to CICSPlex SM manually. You can use a small number of resource definitions as templates for the creation of a large number of resources.

You can create a resource definition that describes many similar, if not identical, resources by specifying those attributes that are common to all the resources. You can even specify attributes that apply to a remote instance of the resource along with the local attributes. CICSPlex SM uses the appropriate subset of attributes as it assigns the local and remote resources to various CICS systems.

**BAS administration views**

In the Web User Interface, BAS functions are separated into basic and fully functional view menus. To access BAS functions from the WUI main menu click Administration.

The **Administration views** menu presents two submenus:
Basic CICS resource administration
These views provide a simplified RDO-like model of BAS including resource definitions, resource groups, and resource descriptions but not resource assignments.

Fully functional Business Application Services (BAS) administration
In addition to the basic model, these views include links to resource assignment views aimed at more advanced users. Use these views to have more flexibility for managing resource definitions. See “Controlling resources by resource assignment” on page 70 for more information about resource assignments.

Links from both submenus are split into three groups:

Definitions
Includes the following links:

CICS resource definitions
Menu containing links to definition views for each resource type.

Resource groups
Link to definitional view for managing resource group definitions. Associated actions are Create, Update, Remove, Install and Add to Resource description.

Resource assignments (fully functional menu only)
Link to definitional view for creating and managing resource assignments. Associated actions are Create, Update, Remove and Add to Resource description.

Resource descriptions
Link to a definitional view for creating and managing resource descriptions. Associated actions are Create, Update, Remove, Install and Replace.

Associations
Includes the following links:

CICS resource definitions in resource group
Link to a tabular view displaying the resources within a resource group. The view includes a Remove action button allowing you to remove an association between a resource definition and its parent resource group. There is no create action with this view. Adding a resource to a group is carried out while defining the resource itself.

Resource groups in description
Link to a definitional view for managing the associations between resource groups and resource descriptions. Associated actions are Create, Update and Remove.

Resource assignment in description (fully functional menu only)
Link to a definitional view for managing the associations between resource assignments and resource descriptions. Associated actions are Create, Update and Remove.

CICS system links
Link to a definitional view for managing CICS system link definitions. Associated actions are Create, Remove and Install.

Resources deployed by...
Includes the following links to views displaying active CICS resources:

Resource description
Link to a tabular view displaying deployed resources selected by resource description.

Resource assignment (fully functional menu only)
Link to a tabular view displaying deployed resources selected by resource assignment.

CICS system
Link to a tabular view displaying deployed resources selected by CICS system.

Reminder: Unless noted otherwise, only the context setting is recognized when you are creating and maintaining resource definitions.
Common WUI resource definition actions
Each WUI resource definition view supports the following actions for creating and maintaining resource definitions:

Add to resource group
To add a resource definition to a resource group.

Create
To create a resource definition and add it to the data repository.

Map
To generate a visual representation of related definitions in the data repository.

Install
To install a resource in one or more active systems. For details of valid systems, see the descriptions of the individual BAS objects.

Remove
To remove a resource definition from the data repository.

Update
To update a resource definition in the data repository.

You can update multiple resources in a single operation by selecting multiple entries from a resource definition tabular view before clicking Update.

These actions and the views that result from them are similar for all the resource definition views that support them.

Accessing resource definition views
To access resource definition views:

• You can follow two paths from the WUI main menu to open the CICS resource definitions menu:
  – Click Administration > Basic CICS resource administration > Resource definitions.
  – Click Administration > Fully functional Business Application Services (BAS) administration > Resource definitions.
Figure 5. WUI resource definition menu

- Select the required resource from those listed to display a tabular view of existing resources. For example, in order to work with a CorbaServer definition, click **CorbaServer definitions** from the list to display a **CorbaServer definition** tabular view.
Creating CICS resource definitions

To create a new resource definition:

- From the tabular view for the selected resource, click the Create... button to display the create view for the resource. You can select an existing resource definition to use as a template before clicking the Create... button.
- When you have complete the definition, click Yes to create the definition and redisplay the resource tabular view.

Updating resource definition views

To update one or more resources:

- Select the required record or records using the adjacent check boxes and click the Update action button to display a resource definition view. This view is used for both the update and create actions.
- Make the required updates to the displayed fields. Use the Yes and No buttons to confirm or abandon the operation.

Removing CICS resources

To remove one or more resource definitions, select the required record or records using the adjacent check boxes and click the Remove action button. You are given the option to confirm or abandon the operation for each selected record.

See “BAS administration views” on page 56 for more information.
**Mapping CICS resources**
To generate a map of related definitions, click **Map**.

**Installing CICS resources**
To install resource definition views, click the **Install...** button.

**Common WUI definition fields**
The majority of the information in the create input views for each resource definition is unique to the type of resource. However, the following fields are common to the first input view for every resource definition:

**Name**
The name of the resource definition.

The length and format of the name varies by resource type. For example, a program name can be up to 8 characters long, but a connection name can be only 4 characters long.

**Note:** The names of resource definitions are case-sensitive in CICSPlex SM.

**Version**
The version number of the resource definition.

You can specify one of the following:

- An integer in the range 1 through 15, or
- Blank or 0, in which case CICSPlex SM assigns the next available version number.

This can be blank, or an integer in the range 0 through 15.

**Note:** If you create a resource definition of the same resource type and with the same name as an existing definition, a new version of the definition is created in the data repository.

**Description**
An optional string of up to 58 characters that describes the resource definition.

**Resource group name**
Optionally, the name of a resource group to which the resource definition should be added.

When the resource definition is created, it is automatically added to the specified resource group. This is one way of adding resource definitions to resource groups; alternatively, click the **Add to resource group** button on a resource definition view to add a single definition to a group.

**User data area**
Three optional strings of up to 8 characters each that allow you to provide additional site-specific data related to the resource definition.

You can use these fields for any purpose you choose; CICSPlex SM makes no use of the data.

The create views for each resource and the resource-specific information that you must provide are presented in the description of the resource definition.

**Note:**

1. For any resource definitions that contain password fields, the password you enter does not appear on the create view while you are typing it.

**Web User Interface views for resource objects**
You can use a simple approach to managing CICS resources using the CICSPlex SM object model of definitions in groups, groups associated with descriptions, and descriptions associated with CICS regions.
Alternatively, you can use a more selective approach by using resource assignment to select and assign resources.

The following figures provide an overview of the WUI views that you can use to create some of the administration objects. The titles of the views are followed by the object names in parentheses. Figure 7 on page 62

Figure 7. Views for managing CICS resources - a simple approach

Figure 8 on page 63
Resource definition sets

About this task

The resource definitions you create can be members of resource groups. Resource groups can, in turn, be associated with resource descriptions and resource assignments. Resource groups, resource descriptions and resource assignments are convenient mechanisms for managing sets of resource definitions in ways that are appropriate to your enterprise.
Resource groups
A resource group can be any set of resource definitions that you want to manage as a unit. The resources
in a group usually have something in common. They might be logically related by their use in a given
application or communications network, or geographically related by their use at a given site.

A resource group can contain resource definitions of all types (such as connections, files, and journals).
There is no real limit to the number or combination of resource definitions that can make up a group.
However, only one version of a given resource can be included in a resource group at one time. You can
maintain multiple versions of a resource definition in different resource groups, but not in the same group.

When you use the GET API command to create a result set of CICS definition records, you can limit your
request to definitions in a given resource group. The GET command for each CICS definition object (such
as CONNDEF) supports the following parameter:

RESGROUP(resgroup)
(Optional) Specify the name of an existing resource group from which CICS definition records should
be selected.

You create resource groups by clicking the Create button in the Resource groups definition view. This
action adds the resource group to the CICSPlex SM data repository.

You can also create a resource group using the CREATE command in the batched repository-update
facility or the API. In that case, you can identify an existing resource group to be used as a model. The
CREATE command for the RESGROUP object accepts the following parameters:

MODEL(resgroup)
(Optional) Specify the name of an existing resource group whose resource definitions are to be used
by the new group.

MODE(option)
(Required, if you specified a MODEL value) Indicate which definitions are to be copied from the model
resource group to the new group:

NO
Do not copy any definitions from the model group.

ASSOCIATIONS
Copy the associations between resource definitions and the model group (RESINGRP objects) and
create a new set of associations from the existing resources to the new group.

MEMBERS
Copy all the resource definitions in the model group and create a new set (different version
number) for use by the new group.

You can manage resource groups independently, but the real advantage comes in associating them with
one or more resource descriptions or resource assignments.

Adding resource definitions to a resource group
There are several ways to create an association between a resource definition and a resource group. Both
definitions must exist in the data repository before you can create the association.

Adding a definition when it is created
You can automatically associate a resource definition with a resource group when the definition is
created by identifying the group in the Resource group name field. This is a standard field on the
create panel for each resource type.

When you create CICS Definitions using the batched repository-update facility or API you can add
them to an existing resource group by using the RESGROUP parameter. The CREATE command for
each CICS Definition object (such as CONNDEF) supports the following parameter:

RESGROUP(resgroup)
(Optional) Specify the name of an existing resource group to which the CICS Definition should be added.
Adding individual or multiple definitions
Using the WUI, you can add one or more existing resource definitions of a given type to a group by selecting the definition or definitions on a resource definition tabular view and clicking the Add to resource group button.

Using a model resource group
Once a resource group is defined and populated with resource definitions, you can use that group as a model to populate other resource groups. When you create a new resource group, you have the option of specifying:
- A resource group whose resource definitions are to be used as a model by the newly created group.
- Which definitions are to be copied from the model group:
  - The actual resource definitions (to create an additional set of resources)
  - The associations between the model group and existing resources

Note: Adding a resource definition to a resource group could result in inconsistent resource set errors. For information about this type of problem and how to resolve it, see “Validation of a set of resources” on page 69.

Resource assignments
A resource assignment identifies resources of a given type that are to be assigned to one or more CICS systems as either local or remote. Rather than representing a whole set of resources (as resource groups and descriptions do), the purpose of a resource assignment is to selectively process the resources in a set.

With a single resource assignment, you can:
- Select specific resources from a resource group.
- Identify the CICS systems where local and remote instances of a resource should be assigned.
- Modify resource attributes for specific uses in specific CICS systems.

The resources selected by a resource assignment cannot be managed independently. The resources must be members of a resource group and the resource assignment must be associated with at least one resource description.

Resource descriptions
Similar to a resource group, a resource description represents a set of logically related resources. You can associate whole resource groups with a resource description to create a larger set of resources that can be managed more efficiently. In addition, you can associate resource assignments with a resource description to create a select set of resources, such as an application that spans more than one CICS system.

A resource description represents the largest set of resources that can be managed as a unit by CICSPlex SM. It might consist of all the resources in several resource groups or resource assignments (much like a CSD group list) or the set of resources that make up a given application on various CICS systems.

The set of resources identified in a resource description can be:
- Identified as a logical scope (such as an application) for use in subsequent CICSPlex SM requests
- Automatically or dynamically installed in systems running CICS TS.

Management of CICS resources using CICSPlex SM
With Business Application Services, the most important decision you have to make is how to manage the sets of resources you create:
- By resource descriptions alone; see “Controlling resources by resource description” on page 70
- By resource assignments in conjunction with resource descriptions; see “Controlling resources by resource assignment” on page 70
You can use one or both of these approaches to control your CICS resources, depending on the situation and the degree of precision you require. Resource descriptions alone represent the simplest approach to managing resources. Using resource assignments provides access to the full range of Business Application Services features.

**Multiple versions of a resource definition**

As your business applications progress from development through testing and into production, the resources that support them may evolve as well. Since resources that are defined to CICSPlex SM exist independent of groups or other objects, versioning is necessary to support variations in resource definitions. This version support enables you to manage:

- A single version of a resource definition in multiple groups
- Multiple versions of the resource throughout the CICSplesx.

For example, you can have three DB2TDEF definitions, each called DB2TR01, and each specifying a different (or the same) transaction IDs, each having a different version number.

Business Application Services can manage up to 15 versions of the same resource definition, each specifying the same or a different CICS resource.

When you create a resource definition, you can specify a version number for the definition. The version number is an integer in the range 1 through 15. If you leave the Version field blank, or if you specify 0 for the version number, then it is automatically assigned the first available version number.

The version number is assigned to the resource definition when the definition is stored in the CICSPlex SM data repository.

CICSPlex SM ensures that the version number is unique for the resource type of the definition.

**Note:**

1. CICSPlex SM does not generate a new version when you update an existing resource definition.
2. As with the name field of the resource definition, the version field cannot be changed while browsing or updating a resource definition in a view. Furthermore, when creating a new resource definition, the version field, (also like the name field) can be entered on the input panel only of the create view.
3. When you create resource definitions using the batched repository-update facility, or the application programming interface (API), you can use the DEFVER keyword to specify the version number of a new definition.
4. CICSPlex SM does not allow multiple versions of the same resource definition to be installed in a CICS system.

You can use version numbers to help identify a specific variant of a resource definition, providing you have a policy of using version numbers for that purpose. Otherwise, if you remove certain versions of a resource definition and then define new ones, the version number alone may not indicate the most recent version.

For example, suppose you define 15 versions of a resource definition (numbered 1 to 15) and then remove versions 3 and 12. The next time you create a new version of that resource definition, if you do not specify a version number, CICSPlex SM reuses the available version numbers from low to high. So, in this example, the latest version of the resource definition might be version 3.

For this reason, the version number alone might not be sufficient to identify the latest version of a resource definition. To enable you to do that, CICSPlex SM performs time-stamping, which provides a chronological record of the versions of a resource definition. The date and time at which a given version of a resource definition was created and last updated are maintained by CICSPlex SM in the CREATETIME and CHANGETIME attributes of the appropriate resource table. These values are recorded by using the time zone of the maintenance point CMAS, not the time zone of the user who created or changed the definition. In addition, the values are fixed at the time they are recorded; they are not affected by any subsequent changes to the time zone of the maintenance point CMAS.
If you do not explicitly use the version number to identify particular versions, and you want to identify the last version created, you can either:

- Inspect the date and time fields
- Make explicit use of the user data fields of the definition when creating definitions. These fields are attributes of the resource definition, and can be used as filter criteria in the Install view of the Resource assignments and so on. For example, you could adopt a convention whereby the first user data field is designated as a control field, which may take either the value T (test) or P (production). To install the definition into a test system, USERDATA1=T would be used as the filter criterion.

**Availability of resources for CICS releases**
Some resources are not available in all of the supported CICS releases and this availability affects what resources display in the WUI views.

The WUI help for views and action commands provides information about the availability of resources.

When you display a resource definition view and your CICSpix includes regions running a release of CICS for which that resource is not available, those regions are not included in the view. When you issue a resource definition view command and your CICSpix consists solely of regions running a release of CICS that is not available, a message is displayed. A message is also displayed when you issue an action command that is not available for the release of CICS on which your CICS region is running.

**Defining connections between CICS regions**
You can use CICSpix SM to define and manage the connections between CICS regions. Instead of identifying each CICS region in a communication network to each of its partners as RDO requires, you can specify general connectivity information to be used by all the CICS regions in a CICSpix.

**Before you begin**
You must have defined the CICS regions to CICSpix SM. If you want to connect regions using TCP/IP, you must have defined a hostname, network ID, and port number for each CICS region.

**About this task**
For each pair of CICS regions that are to communicate, you require four resource definitions. Using RDO, each definition is unique to a given pair of CICS regions. They cannot be reused for connections between different pairs of CICS regions. With Business Application Services, you create one system link (SYSLINK) for each pair of CICS regions. The system link definition describes the type of connection and connection definitions that are required. You can use these connection definitions to create any number of system links that share the same characteristics.

You can use either the CICS Explorer or the Web User Interface to define connections between CICS regions.

**Procedure**
1. Identify the CICS regions that you want to connect.
   CICSpix SM uses the CICS system ID (SYSIDNT) attribute value to identify the system link.
2. Define the connection resource definitions that you want to reuse.
   Each connection resource definition is represented by a resource object.
   - To define ISC or MRO connections, create CONNDEF and SESSDEF resource objects for the connection and session definitions.
     **Tip:** When defining MRO connections in the WUI, you are advised to set the session definition receive prefix to < and the send prefix to >. If you define your own receive and send prefixes, you must create a session definition for each system link definition (SYSLINK object) to avoid duplicate session names being created.
   - To define an IPIC connection, create IPCONDEF and TCPDEF resource objects for the IPCONN and TCPIPSERVICE definitions. You can use the same TCPDEF for multiple SYSLINK connections in a CICS region when you want the connection to use the same port number.
3. Define the system links to create connections between the CICS regions.

   Optionally, you can base your new system link on a SYSLINK object that is already defined.

   a) Specify the names of the primary and secondary regions.
      The primary region contacts the resource definition objects and the secondary region is the target region for the connection.

   b) Specify the connection type.
      For example, you might select SNA for an ISC or MRO connection or IPIC for a TCP/IP connection.

   c) Specify the primary and secondary definitions for the connection that you want to reuse.

   d) Create the SYSLINK object.

Results
The SYSLINK resource object is added to the data repository. If you are creating an IPIC connection, the system definition attributes of the primary and secondary regions can override any values specified for host, network ID, and port number in the IPCONDEF or TCPDEF resource objects.

What to do next
Install the system link. For details on how to install the system link using the WUI views, see “Installing system links using the WUI” on page 109.

Resource definition validation
CICSPlex SM performs many of the same resource definition checks as RDO does. But CICSPlex SM goes further, attempting to validate whole sets of resources associated with the CICS systems in your CICSpex.

Validation of individual resource definitions
As individual resources are defined or installed, CICSPlex SM checks the following:

Individual attributes of a resource
Each attribute of each resource definition is validated independently according to the CICS RDO guidelines for valid values. CICSPlex SM reports individual attribute errors as a resource is defined. A resource definition is not created and stored in the data repository until all of its attributes are valid.

Note:
1. If you specify blank spaces for an attribute, CICSPlex SM allows CICS to assign a default value, if there is one.
2. If you specify N/A for an attribute, CICSPlex SM processes the resource definition as if that attribute was not specified. Depending on what other attributes were specified, CICSPlex SM either ignores the attribute or selects an appropriate value according to the CICS RDO guidelines.

Interdependent resource attributes
Certain attributes of a resource definition can be dependent upon each other, and other attributes can be mutually exclusive. Such attribute combinations are validated using the CICS RDO guidelines. CICSPlex SM reports attribute combination errors as a resource is defined. A resource definition is not created and stored in the data repository until all of its interdependent attributes are resolved. Check the resource definition syntax diagram for information on attribute interdependency.

Release-specific resource attributes
Because a resource can be used by a number of CICS systems, you can specify the whole range of possible attributes when you define the resource to CICSPlex SM. However, when that resource is installed in a given CICS system, CICSPlex SM checks for and uses only those attributes that are appropriate to the release of CICS. CICSPlex SM keeps track of obsolete resource attributes from earlier releases of CICS just as RDO does, so that, when you install a definition in a CICS system, CICSPlex SM discards any attributes that are obsolete for that CICS release and retains the attributes that are appropriate.
**Note:** CICSPlex SM attempts to validate attribute values in such a way that the resource definition can be used with as many levels and platforms of CICS as possible. However, because of the wide variety and interdependency of resource attributes for different releases of CICS, CICSPlex SM might not be able to catch all potential attribute conflicts. So even if CICSPlex SM does not detect a problem, a particular release of CICS might fail a given resource installation request. For information about resource installation problems, see “Handling dynamic installation errors” on page 85.

**Validation of a set of resources**
Maintaining a consistent set of resources for each system is an integral part of managing CICS resource definitions.

When you perform any of the following operations, the requested changes are checked against the existing resource set for each affected CICS system:

- Add or update a resource definition in a resource group
- Add a resource group in description
- Update a resource description
- Update a resource assignment
- Add or update a resource assignment in a description
- Add a CICS system to a CICS system group

CICSPlex SM flags a resource set as inconsistent if a resource being added or updated (referred to as the *candidate* resource) is in conflict with a resource that already exists in the CICS system.

For example, you would receive inconsistent resource set errors if you tried to:

- Assign different versions of the same resource to the same CICS system
- Assign a resource to the same CICS system as both local and remote

**Note:**

1. A DB2 entry definition (DB2EDEF object) that has a transaction ID specified can create both a DB2 entry (DB2NTRY object) and a DB2 transaction (DB2TRN) operational object when the DB2 entry definition (DB2EDEF object) is installed (see DB2 entry resource definitions). Therefore, you may get inconsistent set errors because two or more DB2 entry definitions (DB2EDEF objects) have the same transaction id specified, or clash with an explicitly defined DB2 transaction definition (DB2TDEF object) that has the same name as that generated from a DB2 entry definition (DB2EDEF object), which would cause a conflict.

2. You can change the value of selected BAS objects using the Override string field in the Resource assignments view (RASGNDEF object), as described in topic page “Resource assignment definitions” on page 102. If you use this method to change the Transid field of a DB2 entry definition (DB2EDEF object) and there is a resulting clash of names of DB2 transactions (DB2TRAN objects), CICSPlex SM does not detect this fact as part of inconsistent set processing.

**Validation CICS system assignments**
CICSPlex SM manages where resources are assigned by validating the target and related scope values that you specify. When you ask CICSPlex SM to:

- Update a resource description
- Update a resource assignment
- Add or update a resource assignment in description
- Add a CICS system to a CICS system group

the requested changes are checked to ensure that the target and related scope values are not in conflict with each other. CICSPlex SM flags the target and related scopes as inconsistent if:

- There is any overlap between the two (for example, the same CICS system is in both scopes)
The related scope is anything other than a single CICS system for which a system ID is defined. If any of the changes you request would result in inconsistent scopes, messages to this effect are displayed at the top of the associated tabular view. Click the message numbers to display the full text of the messages and help in solving the problem.

**Controlling resources by resource description**

The simplest way to manage sets of resources is to associate resource groups directly with a resource description. To do this you would:

1. Create resource groups and add resource definitions to them.
2. Create a resource description (or identify an existing one) that you want to associate the resource groups with.
   - Use the **Resource group scope name** field on the resource description to identify a CICS system or CICS system group where all the resources in the groups should be assigned.
3. Use the **Add to resource description** button on the **Resource group definition** view to associate one or more resource groups with the description. This creates a resource group-in-description link record (RESINDSC).

The result is that all of the resources in the resource groups are assigned to the specified CICS systems exactly as they were defined to CICSPlex SM. This is similar to the way in which RDO processes the definitions in a CSD group list.

As with RDO, this simple approach to managing your resources requires separate resource definitions for each element of a resource. So assigning a resource that is local to one CICS system and remote to another would require two resource definitions. And the resources represented by a resource description are more likely to be physically related by the CICS systems where they reside than by any logical function such as an application.

Directly associating entire resource groups with a resource description is in keeping with the basic object model used by other CICSPlex SM components (such as Workload Manager). And this approach is sufficient for using Business Application Services in a manner similar to RDO. However, this can also be viewed as an interim step on the way to complete management of your CICS resources with the use of resource assignments.

**Controlling resources by resource assignment**

Resource assignments are a departure from the basic CICSPlex SM object model of definitions, groups, and descriptions. They add a significant degree of flexibility and control to the resource definition process. They also increase the precision with which you can manage the resources in your CICSplex.

Once you have gathered resource definitions into resource groups, you can use resource assignments to:

- Control resources of a given type in a given group. Each resource assignment applies to one type of resource (such as files) in one resource group.
- Identify resources as either local or remote and assign them to various CICS systems with a single resource definition. Local resources are assigned only to those CICS systems identified as target systems. Remote resources are assigned as remote to the target systems; they are also assigned as local resources to the related system you identify.
- Process selected resources from a group by specifying a filter expression. A filter expression is a character string made up of logical expressions to be used in filtering resources (such as resources whose names begin with PAY).
- Modify resource attributes for a particular use by specifying override expressions. An override expression is a character string that identifies changes to be made to one or more attributes of a resource when it is assigned to a given CICS system.

To take full advantage of Business Application Services, you should associate your resource groups with resource assignments and your assignments with a resource description. To do this, you would:

1. Create resource groups and add resource definitions to them.
2. Create one resource assignment for each type of resource you want to manage.

   Use the **Resource group name**, **Target scope name** and **Related scope name** fields on each resource assignment to identify resource groups and the CICS systems to which they should be assigned.

   You can also use a filter string expression to select resources from a group and an override string expression to modify specific resource attributes.

3. Create a resource description (or identify an existing one) that you want to associate the resource assignments with.

   In this approach, the resource description is really a means of grouping the resource assignments for various resources into a meaningful set, such as an application. The selection and assignment of resources are ultimately controlled by the resource assignments.

   Use the **Add to resource description** button from the **Resource assignment definition** view to associate the resource assignments with the resource description. This creates a resource assignment-in-description link record (RASINDSC).

   Note that the same resource assignment can be associated with more than one resource description, just as the same resources are generally used by more than one application.

Depending on the resource assignment values, some or all of the resources in the resource groups may be assigned as local or remote resources in multiple CICS systems.

### Using logical scopes to control application resources

Business Application Services enables you to monitor and control CICS resources according to their purpose and logical relationships within your enterprise. For example, rather than viewing the resources in one or more CICS systems or CICS system groups, you can display all the resources that are currently defined as being part of a business application. This allows you to specify a logical scope for CICSPlex SM requests, rather than a physical scope that is location-dependent and subject to change.

A business application can be any set of resources that represent a meaningful entity to the users in your enterprise. The resources can exist in any CICS system in the CICSPlex. If the resources are defined to CICSPlex SM, Business Application Services can locate them and manage them regardless of what platform or release of CICS they are defined to.

For a business application to be recognized by CICSPlex SM, you must assign it a logical scope name in a resource description. When you create a resource description, you identify the resource definitions that make up your application and the CICS systems with which the application should be associated.

**Note:** The concept of a business application is independent of the CICSPlex SM resource installation capabilities. Even CICS systems that do not support resource installation can be included in a business application to be managed by CICSPlex SM.

To identify a set of resources as an application, you must:

1. Define the resources to CICSPlex SM using the Business Application Services resource definition views.
2. Create one or more resource groups (RESGROUP) and add the resource definitions to them.
3. Create a resource description (RESDESC) and specify a name to be used as the logical scope.
4. Decide how you want the resource definitions to be processed and then do one of the following:
   - Associate the resource groups directly with the resource description (via RESINDSC).
   - If you want to further qualify the set of resource definitions, associate the resource description with a resource assignment (RASGNDEF).

Once an application has been identified to CICSPlex SM as a logical scope, you can specify that name on any CICSPlex SM WUI view or API request that honors a scope value.

**Note:** A logical scope name is not a valid scope for resources that cannot be defined by BAS (such as system dump codes). However, a logical scope name is valid for **CICS Regions** (CICSRGN) and **Runtime MAS display** (MAS) views, which will display the regions that may contain resources in the named logical scope.
The following resources are not valid for logical scopes:

AIMODEL
DSKJRLN
EJCOSE
EJDJAR
JOURNAL
JVMSERV
MQCONN
RQMODEL
WEBSERV

**Identifying remote resources to CICSPlex SM**

The choice between using resource descriptions alone or using resource assignments affects the processing of remote resources. Remote resources are defined to the local CICS system but they reside in another system. It is possible for a remote resource to have one name in the local CICS system and a different name in the remote system. CICSPlex SM processes remote resource definitions differently depending on how you are managing your resources.

**By resource descriptions alone**

In this situation, each resource definition in a resource group is directly associated with a CICS system. So a remote resource consists of two definitions: one for the local CICS system and one for the remote system.

CICSPlex SM uses the remote system ID and remote name values in the resource definition to identify the remote resource.

**By resource assignments**

When you use resource assignments, a remote resource can be fully represented to both the local and remote systems by a single resource definition. CICSPlex SM selectively processes the attributes that are appropriate to each system.

The remote system ID in the resource assignment is the name of the connection that will be used between the local and remote system pair. If no name is specified, CICSPlex SM uses the CICS system ID (SYSIDNT) of the remote system as the name of the connection to be used between the local and remote systems.

If you specify a remote name in the resource definition, that name is used when assigning the resource to the related (remote) system. Otherwise, the local name (that is, the name you give the resource definition) is used in both the target and related systems.

**Installation of CICS resources**

You can use Business Application Services (BAS) to install CICS resources. As with CICS itself, CICSPlex SM can install resources either automatically at system initialization time or dynamically into an active system.

CICS regions can be running different releases of CICS, but not all resources are available on all levels of CICS regions; for details, see the individual descriptions of the resource definition objects. The installation facility uses the **EXEC CICS CREATE** command to create resources independently of the CSD.

When you use CICSPlex SM to install CICS resources, those resources can replace any identical resources that might exist in the system.

**Note:**

1. If you are using BAS to install resources automatically when a CICS system initializes, you should specify the CICSPlex SM system parameter MASPLTWAIT(YES) for that system. This parameter suspends PLT processing until all CICS resources are installed and the MAS is fully initialized. For information on specifying this parameter, see Preparing to start a z/OS MAS.
2. There are special considerations when arranging for activation of a DB2 connection via a DB2 connection definition (DB2CDEF object). For details, see Activating DB2 and IBM MQ connections during CICS startup.

3. It is not possible to use BAS to install a IBM MQ connection before the CICSPlex SM environment has been initialized.

4. It is not possible to install journal definitions (JRNLDEF objects).

5. Enqueue models forming nested generic enqueue names must be installed either in the disabled state or in order, from the most specific (for example, ABCD) to the least specific (for example, AB*). You can install disabled enqueue models in any order, but you must enable them in order from most specific to least specific. For more information, see Installing BAS global enqueue model definitions.

6. If the MAS supports the LOGMESSAGE option of the EXEC CREATE command, then you can use the CICSPlex SM system parameter BASLOGMSG(NO) to prevent CICS from logging the BAS CICS resource definitions to the CSDL transient data queue. You can also set BASLOGMSG(YES) to allow this logging to occur to help with problem determination.

**Installing resource groups**

When you install a resource group, you can install some or all of the resources of a single given type contained in the group.

**About this task**

You can use a filter expression to select the resources to be installed. You can either specify the required CICS system and usage information for the resources, or you can refer to an existing resource assignment for that information. And, just as you can for individual resources, you can provide temporary override values for specific attributes of the selected resources.

**Procedure**

1. From the WUI main menu, click **Administration > Basic CICS resource administration > Resource groups** to open the **Resource group definitions** tabular view. This view lists the existing resource groups in the current context.

2. Select the resource group to be installed and click the **Install** button to display the **Install** view. This screen prompts you to provide information about the resource definitions in the group and how the resources are to be installed. This information is normally supplied in a resource assignment. When you manually install a resource group using the **Install** action button, you can either specify the install options explicitly or refer to an existing resource assignment. If you name a resource assignment, any values that you do specify here temporarily override the equivalent values in the assignment.

   **Note:** Any values that you specify on this panel are in effect only for the duration of this single installation process. No resource assignments are created or updated as a result of this panel. If you want to use the same set of install options more than once, you should create a new resource assignment.

3. Provide the following information, as appropriate:

   **Resource assignment value**

   (Optional.) Enter the specific or generic name of an existing resource assignment whose values are to be used for this installation. If you enter a generic value, a list of valid resource assignments is displayed.

   If you specify an assignment name, the following fields are optional on this panel:

   - Target scope value
   - Related scope value
   - Usage value
   - Mode value
   - Override value
If you do supply values in these fields, those values temporarily override the equivalent assignment values. If you do not specify an assignment name, these fields are required.

**Resource type**
Select the type of resources to be installed from the drop down list.

**Note:** You cannot dynamically install the following types of resource definition:
- File key segment definitions (FSEGDEF objects)
- Journal definitions (JRNLDLF objects).
- Session definitions (SESSDEF objects).

**Referenced assignment name**
When the **Resource type** field contains CONNDEF (for connections), identify the resource assignment that applies to the related session definitions (SESSDEF objects). For each connection, CICSPlex SM requires one or more session definitions to properly construct the actual CICS link.

Clicking on the adjacent icon opens a resource selection screen, allowing you to choose a resource from a list of those available.

**Target scope value**
Enter the specific or generic name of an existing CICS system or CICS system group into which the specified resources are to be installed.

**Related scope value**
Enter the specific or generic name of an existing CICS system into which those resources identified as REMOTE are to be installed as LOCAL.

**Note:** For remote transaction definitions (TRANDEF objects) that are defined as dynamic, you can specify a CICS system group for the Related scope value. For all other remote resources, you can specify a CICS system group only if it consists of a single CICS system.

**Usage value**
Specify how the resources will be used:

**LOCAL**
The resources are contained within the target CICS system. LOCAL is valid for all supported resource types.

**REMOTE**
The resource definitions refer to resources that reside in a different CICS system. If you specify REMOTE, you must also specify a Related scope value to identify the CICS system that will contain the local instances of the resources. REMOTE is valid only for the following resource types:
- File definitions (FILEDEF objects)
- Program definitions (PROGDEF objects)
- Transient data queue definitions (TDQDEF objects)
- Transaction definitions (TRANDEF objects)

**Note:**

a. When you specify REMOTE, the resources are assigned to all the CICS systems identified in both the Target scope value and Related scope value fields. Likewise, when the resources associated with this assignment are installed, remote resources are installed in both the target and related scopes.

b. Although a temporary storage queue may be created on a remote system, the temporary storage model that controls the queue's attributes is always a local resource. Therefore, when you install a temporary storage model definition, the Usage value must always specify LOCAL. See Installing BAS temporary storage model definitions. For a description of the TSMDEF Remote system attribute, see Temporary storage model definitions - TSMDEF.
**Mode value**
For some resource types, CICSPlex SM requires additional information to determine which subset of resource attributes to use in completing the installation. The Mode value you should specify depends on the resource type being installed:

**Programs (PROGDEF)**
If you specified LOCAL in the Usage field, you can specify AUTO to have CICS automatically install programs into a system. AUTO means that no explicit definition of the programs is required in the CICS system. Otherwise, specify N/A.

If REMOTE is specified in the Usage field, you can identify how the program is to be routed:

- **DYNAM**
  Programs are processed by the dynamic routing program (DTR).

- **STAT**
  Programs are sent to the remote CICS system identified in the Related Scope

**Transactions (TRANDEF)**
You can specify whether or not the transaction should be processed by the dynamic routing program. If the **Usage value** field contains REMOTE, a **Mode value** must be specified.

- **DYNAM**
  Transactions are processed by the dynamic routing program.

- **STAT**
  Each transaction should be sent to the remote CICS system identified in the transaction definition (TRANDEF). This mode may be specified only if the **Usage value** field contains REMOTE.

**Note:** The value you specify here overrides the Dynamic value in the TRANDEF.

**Transient data queues (TDQDEF)**
You can identify the type of transient data queue to be installed:

- **EXTRA**
  Extrapartition TDQ.

- **IND**
  Indirect TDQ.

- **INTRA**
  Intrapartition TDQ.

If you specify N_a, CICSPlex SM uses the Type value in the TDQDEF to install the transient data queue. If the Type value is REMOTE, CICSPlex SM installs an indirect TDQ.

For all other resources, specify N_a because no mode data is required.

**Overtype value**
If you plan to specify an override expression for the resources, indicate which scope the override values should be applied to:

- **BOTH**
  Apply the override values to both scopes.

- **NONE**
  Do not apply any override values.

- **RELATED**
  Apply the override values to the Related Scope only.

- **TARGET**
  Apply the override values to the Target Scope only.

**Notify value**
Specify the type of checking to be performed before attempting to install resources in the specified CICS systems:
**State check value**
Indicate whether or not the existence and operational state of all resources are to be checked before an `EXEC CICS CREATE` command is issued.

- **NO**
  The existence and operational state of all resources are not to be checked.

- **YES**
  The existence and operational state of all resources are to be checked.

**Force install value**
Specify YES or NO to indicate whether you want to install the resources even if CICSPlex SM believes they do not need to be installed.

Normally, CICSPlex SM checks to see if it was responsible for placing the currently installed resource in the CICS system. If so, CICSPlex SM does not install the resource, to avoid inadvertently changing attributes of an active resource.

If you specify YES in this field, CICSPlex SM bypasses this duplicate resource checking and installs the new resource unconditionally.

**Filter string**
(Optional.) Identifies attributes that are to be used in selecting the resources to be installed. CICSPlex SM processes only those resources that meet the specified filter criteria.

A filter expression can be made up of one or more attribute expressions in the form:

**Filter expression**

```
logic_expr
```

**logic_expr**

```
logic_expr
```

**attr_expr**

```
attr — oper — value
```

where:

- **attr**
  Is the name of an attribute in the resource table for the specified resource. You can name the same attribute more than once in a filter expression.

- **oper**
  Is one of the following comparison operators:
  
  `<`
  Less than

  `<=`
  Less than or equal to
=  
   Equal to
>=
   Greater than or equal to
>
   Greater than
~=
   Not equal to

value
Is the value for which the attribute is being tested. The value must be a valid one for the attribute.

If the attribute accepts character data, this value can be generic. Generic values can contain:

• An asterisk (*), to represent any number of characters, including zero. The asterisk must be the last or only character in the specified value. For example:

   TRANID=PAY*

• A plus sign (+), to represent a single character. A + can appear in one or more positions in the specified value. For example:

   TRANID=PY++

If the value contains imbedded blanks or special characters (such as periods, commas, or equal signs), the entire value string must be enclosed in single quotes. For example:

   TERMID='Z AB'

To include a single quote or apostrophe in a value, you must repeat the character, like this:

   DESCRIPTION='October''s Payroll'

AND/OR
Combines attribute expressions into compound logic expressions using the logical operators AND and OR, like this:

   attr_expr AND attr_expr.

Filter expressions are evaluated from left to right. You can use parentheses to vary the meaning of a filter expression. For example, this expression:

   attr_expr AND (attr_expr OR attr_expr).

has a different meaning than this one:

   (attr_expr AND attr_expr) OR attr_expr.

NOT
Negates one or more attribute expressions.

You can negate a single attribute expression, like this:

   NOT attr_expr

You can also negate multiple attribute expressions or even a whole filter expression, like this:

   NOT (attr_expr OR attr_expr).

Note that you must place parentheses around the attribute expressions (or the filter expression) to be negated.
**Override string**
(Optional.) Identifies attributes of the specified resources whose values are to be overridden when they are installed in one or more of the specified scopes. (The value in the **Overtype value** field determines which scope the override values are applied to.)

An override expression can be made up of one or more attribute expressions in the form:

**Override expression**

\[
\text{attr} = \text{value}
\]

where:

* **attr**
  Is the name of a modifiable attribute for the resource.

* **value**
  Is the value to which you want the attribute set. The following restrictions apply:
  - The value must be a valid one for the attribute.
  - If the value contains imbedded blanks or special characters (such as periods, commas, or equal signs), the entire value string must be enclosed in single quotes, like this:

```
DESCRIPTION='Payroll.OCT'.
```

  - To include a single quote or apostrophe in a value, you must repeat the character, like this:

```
DESCRIPTION='October''s Payroll'.
```

4. Click **Yes** to install the resource group in the specified CICS systems.

**Installing resource descriptions**

When you install a resource description, you are installing resources from resource groups that are associated, either directly or indirectly, with the description.

**Before you begin**

To install resources using a resource description, the CICS regions must be active and must be running a release of CICS that supports the **EXEC CICS CREATE** command.

**About this task**

**Procedure**

1. From the WUI main menu, click **Administration > Basic CICS resource administration > Resource descriptions** to open the **Resource description definition** tabular view.

   This view lists the existing resource descriptions in the current context.

2. Select the resource description that you want to install and click the **Install** action button.

   This action button opens an Install input panel.

3. Fill out the fields in the input panel to select what checks CICSPlex SM should run before installing the resources:
   a) Select the type of checking to be performed before attempting to install resources in the CICS regions associated with the description.
   b) Select whether or not the existence and operational state of all resources are to be checked before an **EXEC CICS CREATE** command is issued.
   c) Select whether or not you want CICSPlex SM to force the installation of the resources.

   CICSPlex SM checks to see if it installed the current resource in the CICS region. If so, CICSPlex SM does not install the resource, to avoid changing the attributes of an active resource. You can bypass this processing, to unconditionally install the new resource.
4. Click **Yes** to install the resource description in active CICS regions.

**Results**
When you use the **install** action from the **Resource description definition** view, CICSPlex SM attempts to install all of the resources associated with the resource description into the CICS regions named in the target scope and related scope fields.

- Resources that are directly associated with the description are installed in the CICS regions named in the **Resource group scope name** field of the description.
- Resources that are associated with the description using a resource assignment are installed in the target and related scope regions. You can identify these CICS regions by the resource assignment, the resource description, or the association between them (**Resource assignment in resource description** view).

**What to do next**
You can also replace the resources associated with an installed resource description with the resources associated with a new description. When you replace a resource description, CICSPlex SM performs the following processing:

- Discards any resources that are associated with the old resource description, but not the new one.
- Reinstalls any resources that are associated with both the old resource description and the new one, regardless of whether the definitions have changed.
- Installs any additional resources that are associated with the new resource description.

**Deciding where resources should be installed**
With Business Application Services, you can issue a single request and have resources installed throughout the CICSplex. The key is to define a resource as broadly as possible and install it in as many CICS systems as possible at one time. A single resource definition can be used to install multiple instances of the resource in multiple CICS systems. And that same resource definition can be used to install both local and remote resources. For example, a single transaction definition could be used to install local transactions in your application-owning regions (AORs) and remote transactions in your terminal-owning regions (TORs).

To determine what resources to install and where to install them, CICSPlex SM checks the target scope, related scope, and resource group values in your resource assignments, resource descriptions, and the associations between them. The information in these definitions is processed as follows:

1. Resource assignments (RASGNDEF objects) take precedence. Any values that you explicitly define in a resource assignments are used, regardless of any other values you may specify.
2. For any values that are not found in a resource assignment definition, CICSPlex SM checks the resource assignment-to-description association (RASINDSC object) and uses the values it finds there.
3. For any values that are not found in either the resource assignment or the resource assignment-to-description association definition, CICSPlex SM checks the resource description (RESDESC object) and uses those values. The resource description values serve as defaults, if no other values are specified.

So you could identify the standard target and related scope values for your enterprise in one or more resource description definitions. Then, for particular assignment purposes (of a particular resource type, for example), you could override those standard values by specifying different values in the resource assignment or resource assignment-to-description association definition.

**Automatic resource installation**
The automatic installation of resources in a CICS system is controlled by:

- The CICS system definition, which tells CICSPlex SM under what conditions resources should be installed and what to do if installation errors occur.
- One or more resource descriptions and, optionally, resource assignments, which tell CICSPlex SM what resources to install and how to install them.
When a CICS system initializes and identifies itself to a CMAS, CICSPlex SM reviews all the resource descriptions that are associated with that CICS system and determines the set of resources that should be installed.

**Installing resources automatically**

Resources can be installed in a CICS system automatically even if the maintenance point CMAS for the CICSPlex is not active.

**About this task**

To automatically install a set of resources when a CICS system initializes:

**Procedure**

1. Update the CICS system definition, using the **CICS system definition** view (CSYSDEF object) to indicate:
   a) Whether resources should be installed every time the system initializes, only during a COLD or warm (AUTO) start, or not at all.
   CICSPlex SM handles the initial start of a CICS system in the same way as it does a cold start. An emergency restart of CICS is handled in the same way as a warm start.
   b) How CICSPlex SM should handle any resource installation errors that might occur.

2. Create one or more resource descriptions, using the **Resource description** view (RESDESC object):
   a) Specify YES in the autoinstall field to enable automatic resource installation.
   b) Specify the groups of resources to be installed.

   If the resource groups are directly associated with a resource description, using the **Resource group in resource description** view (RESINDSC object), the resources are installed in the CICS systems named in the **Resource group scope name** field of the description.

3. Optional: Associate the resource descriptions with resource assignments, using the **Resource assignment definition** view (RASGNDEF object) to select specific resources and provide usage information and override values.

   In this case, the resources are installed in the CICS systems named in the Target Scope and Related Scope fields of the resource assignment, resource description, or the association between them.

**Performance considerations for assigned resource descriptions**

Too many installation assignments with resource descriptions in a CICSPlex can affect performance.

Each time that a BAS resource definition is associated with a target CICS system through a resource description (RESDESC object), an entry for that installation assignment is made in the resource set table. The resource set table is an internal table in the BAS storage cache.

For example, consider a data repository with just one resource description definition, which has 50 program definitions (PROGDEF objects) associated with it in migration mode. When the target scope of the resource description is assigned to a single MAS, the resource set table is initialized with 50 entries; one entry for each program definition instance at the target MAS. If the resource description target scope is changed to a CICS system group that comprises 20 MASs, the number of entries in the resource set table increases to 1000 (50 resource definitions multiplied by 20 target regions). The resource set table is kept in contiguous storage to optimize performance.

Therefore, because the BAS storage cache has a finite size, there is a limit on the number of installation assignments that can be made with resource descriptions within a CICSPlex. The limit varies for each specific installation, but the assignment of more than 150,000 resource definitions across the whole of the CICSPlex might lead to performance problems. If a CICSPlex is expected to exceed that limit, consider reducing the number of static definitions by using autoinstall services.
Handling automatic installation errors

About this task
If any of the resources identified in the resource descriptions for a CICS system cannot be installed when the system initializes, CICSPlex SM:

• Issues EYUBNnnnn messages to the CICS job log and EYULOG. These messages describe the resources and the reasons they could not be installed, including any error codes that may have been returned by CICS.

  Note: The job log will also contain CICS messages with detailed information on the installation errors.

• Responds according to the Recovery Action value in the CICS system definition view (CSYSDEF object):
  
  CONTINUE
  Continue installing other resources.

  IMMEDIATE
  Shut down the CICS system immediately.

  NORMAL
  Shut down the CICS system normally.

  PROMPT
  Prompt the operator console for an action. The resource installation process in the CICS system is suspended until the operator responds, but all other MAS processing continues.

  TERMINATE
  Terminate the resource installation process. No more resources are installed. Any resources that were successfully installed are not removed.

Dynamic resource installation
It is recommended that you install most of your resources automatically, as each CICS system initializes. However, at times it might be necessary to refresh those resources or install more resources to satisfy special circumstances. When a CICS system is running, you can use Business Application Services to install new or updated resources dynamically.

You can install a single resource in a single CICS system or a whole set of resources of various types in multiple CICS systems, complete with definition assignment and override values. When you install CICS resources dynamically, you can force those resources to replace any identical resources that were installed in the system previously.

Note:
1. The maintenance point CMAS for the CICSPlex must be active when you attempt to install resources dynamically. If the maintenance point is not available, the installation request fails.

2. You cannot dynamically install session definitions (SESSDEF objects) directly. They can be installed indirectly through a SYSLINK resource or by defining a RASGND (Resource Assignment Definition) for the SESSDEF, then installing the related CONNDEF with the RASGND specified as the referenced resource assignment.

When you install an individual resource, you must identify the CICS systems where the resource is to be installed and provide information about its use as a local or remote resource. Optionally, you can provide override values for specific attributes of the resource. Any override values that you specify are used only for this one-time installation of the resource. The resource definition in the data repository remains unchanged.

You can use the install action command to install dynamically a resource into one or more active systems. For details of valid CICS systems, see the descriptions of the individual BAS objects. The options for installing a resource are the same options that you can specify when you create a resource assignment (RASGND object), including specifying an override expression to be applied for this installation.

Note: The File key segment definitions and Session definitions views (FSEGDEF and SESSDEF objects) do not support the install action command.
CICSPlex SM attempts to install all of the resources you identify, but sometimes conditions in the CICSpIex prevent the installation process from completing successfully. When installation problems occur, CICSPlex SM provides detailed information about the errors.

**Installing resources dynamically**

**About this task**

To install a resource definition dynamically:

1. Open a resource definition screen by clicking Administration > Basic CICS resource administration > Resource definitions, then selecting the type of resource to be installed.
   - **Note:** You can also access this view from the Fully functional Business Application Services (BAS) administration views menu.
2. Select one or more resources and click the Install button.
3. Provide the following information about the CICS systems where the resources are to be installed.

   **Target scope value**
   Enter the specific or generic name of an existing CICS system or CICS system group into which the specified resources are to be installed.

   **Related scope value**
   If you specify a Usage value of REMOTE, enter the specific or generic name of an existing CICS system into which the remote resource is to be installed as LOCAL.
   - **Note:** For remote transaction definitions (TRANDEF objects) that are defined as dynamic, you can specify a CICS system group for the Related scope value. For all other remote resources, you can specify a CICS system group only if it consists of a single CICS system.

   **Usage value**
   Specify how the resource will be used:
   - **LOCAL**
     The resource is contained within the target CICS system. LOCAL is valid for all supported resource types.
   - **REMOTE**
     The resource definition refers to a resource installed in a different CICS system. If you specify REMOTE, you must also specify a Related Scope value to identify the CICS system that will contain a local instance of the resource. REMOTE is valid only for the following resource types:
     - File definitions (FILEDEF objects)
     - Program definitions (PROGDEF objects)
     - Transient data queue definitions (TDQDEF objects)
     - Transaction definitions (TRANDEF objects)
   - **Note:**
     a. When you specify REMOTE, the resources are assigned to all the CICS systems identified in both the Target scope value and Related scope value fields. Likewise, when the resources associated with this assignment are installed, remote resources are installed in both the target and related scopes.
     b. Although a temporary storage queue may be created on a remote system, the temporary storage model that controls the queue's attributes is always a local resource. Therefore, when you install a temporary storage model definition, the Usage value must always specify LOCAL. See Installing BAS temporary storage model definitions. For a description of the temporary storage model definition Remote system attribute, see Temporary storage model definitions.
Mode value
For some resource types, CICSPlex SM requires additional information to determine which subset of resource attributes to use in completing the installation. The Mode value you should specify depends on the resource type being installed:

Programs (PROGDEF objects)
If you specified LOCAL in the Usage value field, you can specify AUTO to have CICS automatically install programs into a system. AUTO means that no explicit definition of the programs is required in the CICS system. Otherwise, specify N/A.

Transactions (TRANDEF objects)
You can specify whether or not the transaction should be processed by the dynamic routing program. If the Usage value field contains REMOTE, a Mode value must be specified as follows:

Note: The value you specify here overrides the Dynamic routing option value in the transaction definitions (TRANDEF objects).

DYNAM
Transactions are processed by the dynamic routing program.

STAT
Each transaction should be sent to the remote CICS system identified in the transaction definition (TRANDEF object). This mode may be specified only if the Usage value field contains REMOTE.

Transient data queues (TDQDEF definitions)
You can identify the type of transient data queue to be installed:

EXTRA
Extrapartition TDQ

IND
Indirect TDQ

INTRA
Intrapartition TDQ

If you specify N/A, CICSPlex SM uses the Transient data queue type value in the transient data queue definition to install the transient data queue. If this type value is REMOTE, CICSPlex SM installs an indirect transient data queue.

For all other resources, specify N/A because no mode data is required.

Overttype value
If you plan to specify an override expression for the resource, indicate which scope the override values should be applied to:

NONE
Do not apply any override values.

BOTH
Apply the override values to both scopes.

RELATED
Apply the override values to the Related Scope only.

TARGET
Apply the override values to the Target Scope only.

Referenced resource assignment name
If you are installing connections from the Connection definition view, identify the resource assignment that applies to the related session definitions. For each connection, CICSPlex SM requires one or more session definitions to properly construct the actual CICS link.

Note: The Referenced resource assignment name field appears only when you are installing a connection from the Connection definition view.

4. Specify any pre-installation checks.
When you install resources into CICS systems dynamically, you can ask CICSPlex SM to perform the following checks before it attempts to install the resources:

- Are the CICS systems running?
- Do the CICS systems support the EXEC CICS CREATE command?

The value in the **Notify value** field determines, which, if any, checks are carried out.

If you request any of these pre-installation checks, CICSPlex SM performs them for all the resources you specified before any of the resources are installed.

To specify these checks, select one of the following values from the **Notify value** field:

**INACTIVE**
CICSPlex SM checks all of the CICS systems you identified to make sure they are currently active in the CICSplex. If any of the CICS systems are not active, CICSPlex SM returns a list of inactive systems.

**RELEASE**
CICSPlex SM checks for CICS systems in the target scope that do not support EXEC CICS CREATE commands. If any of the CICS systems are running a release of CICS that does not support EXEC CICS CREATE, CICSPlex SM returns a list of systems where resources cannot be installed.

**FULL**
CICSPlex SM checks all of the CICS systems you identified to make sure they are currently active in the CICSplex, and checks that the CICS system is at the appropriate level for the resource being installed. If any of the CICS systems are not active, CICSPlex SM returns a list of inactive systems. If any of the CICS systems are running a release of CICS that does not support EXEC CICS CREATE, CICSPlex SM returns a list of systems where resources cannot be installed.

**NO**
No checking is performed.

5. Request any consistent state check.

If a resource that you are trying to install already exists in a CICS system, CICSPlex SM can check whether its current operational state would allow the resource to be replaced. For example, if a program with the same name and attributes exists in a CICS system, CICSPlex SM attempts to discard it. However, if that program is currently in use, CICSPlex SM cannot replace it with a new one. You use the **State check value** field to request a consistent state check:

**State check**

**NO**
CICSPlex SM does not provide details on resources that are not installable because of their status before issuing an EXEC CICS CREATE command.

**YES**
CICSPlex SM provides details on resources that are not installable because of their status before issuing an EXEC CICS CREATE command.

If you do not request a state check, CICSPlex SM passes the EXEC CICS CREATE request to CICS; if the resource is in a state that prevents it from being replaced, the request fails.

6. Specify a **Force install value**.

Before installing a resource, CICSPlex SM checks to see if the same resource already exists in the CICS system and if CICSPlex SM itself was responsible for installing it. If so, CICSPlex SM considers the new resource to be a duplicate.

In this situation, CICSPlex SM concludes that the new resource does not need to be installed because it is a duplicate of one that already exists. However, you may want to reinstall an existing resource if, for example, you have changed attributes of the definition, or you are supplying override values as part of the installation request. To do this, you can use the **Force install value** option when you dynamically install resources. This option is available when you:

- Install an individual resource
• Install a resource group
• Install a resource description
• Replace a resource description

**Force install value**

**YES**
Install the specified resource unconditionally, without checking whether or not it is a duplicate

**NO**
Do not install the duplicate resource.

By default, **Force install value** is set to No; CICSPlex SM does not normally force the installation of a resource it believes to be a duplicate. However, if you specify YES, you can bypass this duplicate resource checking. CICSPlex SM will install all of the specified resources unconditionally.

7. Provide any override expressions.

This identifies attributes of the specified resource whose values are to be overridden when they are installed in one or more of the specified scopes. The value in the **Override string** field determines which scope the override values are applied to.

(Optional.) An override expression can be made up of one or more attribute expressions in the form:

**Override Expression**

```
attr = value
```

where:

- **attr**
  Is the name of a modifiable attribute for the resource.

- **value**
  Is the value to which you want the attribute set. The following restrictions apply:
  - The value must be a valid one for the attribute.
  - If the value contains imbedded blanks or special characters (such as periods, commas, or equal signs), the entire value string must be enclosed in single quotes, like this:
    ```
    DESCRIPTION='Payroll.OCT'.
    ```
  - To include a single quote or apostrophe in a value, you must repeat the character, like this:
    ```
    DESCRIPTION='October''s Payroll'.
    ```

8. Click **Yes** to action any pre-installation checks and install the resource definition in the specified CICS systems. The resource definition tabular view is redisplayed.

If the installation fails, messages containing diagnostic information are displayed on this screen.

**Handling dynamic installation errors**

When you ask CICSPlex SM to install one or more resources dynamically by using the **Install** button from WUI view, an **Install** view is displayed. After you provide the required information and click **Yes**, CICSPlex SM attempts to install the selected resources into the appropriate CICS systems. Note that the installation of resources into various CICS systems can take place in at the same time.

When the installation process is complete, if any of the resources could not be installed, the tabular view for the resources is displayed with one or more error messages at the beginning. For example, if you tried to install an IPIC connection definition, you might see a set of messages like these:

```
EYUVC1231E Dataerror) EYUVC1272I  'Install' (INSTALL) request failed. Request complete for 1 records. (Tableerror, Action (INSTALL) failed. Nothing installed (21).
```
Click the error message number to display the full text of the message which contains reasons why the install failed and suggestions for solving the problem.

**Extracting records from the CSD**

To migrate resource definitions from your CICS system definition (CSD) file, CICSPlex SM provides an exit routine that can extract records from an existing CSD. The exit routine uses the EXTRACT command of the CICS DFHCSDUP utility to read CSD records. The extracted CSD records are processed by the CICSPlex SM-supplied extract routine EYU9BCSD to generate equivalent CICSPlex SM resource definition records that you can use as input to the batched repository-update facility.

**Creating input to the extract routine EYU9BCSD**

**About this task**

The input file for the CICSPlex SM extract routine EYU9BCSD consists of a series of control statements. These control statements describe the CSD records you want to extract and the resource groups with which they should be associated.

The input file must adhere to the following requirements:

- The file must have a fixed logical record length of 80.
- Each control statement must be contained on a single line.
- Any line with * in column 1 is treated as a comment.

The following control statements are supported:

**RESGROUP(CSDGROUP|resgroup)**

Identifies the resource group or groups to be generated:

- **CSDGROUP**
  - A RESGROUP definition is generated for each CSD group presented to EYU9BCSD.
- **resgroup**
  - A single RESGROUP definition is generated using the specified name.

The RESGROUP statement is optional and, if specified, only one is allowed per input file.

**RESINGRP(CSDGROUP|resgroup)**

Identifies the resource group with which resource definitions are to be associated:

- **CSDGROUP**
  - Resource definitions are associated with a resource group having the same name as the original CSD group.
- **resgroup**
  - Resource definitions are associated with the specified resource group. The resource group must already be defined in the data repository for an association to be created.

The RESINGRP statement is optional and, if specified, only one is allowed per input file. If you do not specify a RESINGRP statement, the batched repository-update facility CREATE xxxxDEF command is generated without a RESGROUP operand. In that case, the xxxxDEF resource definition is not automatically associated with any resource group.

**objtype(resname)**

Identifies the CSD records to be processed by EYU9BCSD, where:

- **objtype**
  - Is the CSD resource type, which may be one of the following:
    - ATOMSERVICE, BUNDLE, CONNECTION, CORBASERVER, DB2CONN, DB2ENTRY, DB2TRAN, DJAR, DOCTEMPLATE, ENQMODEL, FILE, JOURNAL, IPCONN, JOURNALMODEL, LIBRARY, LSRPOOL, MAPSET, MQCONN, PARTITIONSET, PARTNER, PIPELINE, PROCESSTYPE, PROFILE, ...
You can specify multiple `objtype` statements in a single input file, but each one must represent a different resource type. Only one `objtype` statement of a given resource type is allowed per input file.

**rename**

Is the specific or generic name of a CSD resource of the specified type.

For example, `PROGRAM(*)` would process all the PROGRAM records in the CSD presented to EYU9BCSD. `PROGRAM(AB+C*)` would process only those PROGRAM records that match the generic pattern. Note that the asterisk (*) is interpreted according to CICSPlex SM rules for generics, not CEDA rules.

**INQUOTES(NO|YES)**

Identifies whether or not you want field values enclosed in quotes on the output data set. You may need to use this control statement if you have any data on your CSD that contains unbalanced parentheses. If you omit this keyword, the default value of NO is assumed.

**NO**

The values of parameters are not enclosed in quotes on the output data set. This setting is perfectly adequate for input to the batched repository-update facility, but you might encounter problems if the parameter values contain unbalanced parentheses.

Note that, if you specify `INQUOTES(NO)`, the EYU9BCSD output can be used as input to any release of the CICSPlex SM batched repository-update facility.

**YES**

All values of parameters are enclosed in quotes on the output data set. The CICSPlex SM batched repository-update facility terminates the parameter value at the final quote, not at an embedded parenthesis.

Note that, if you specify `INQUOTES(YES)`, the EYU9BCSD output can be used only with the CICSPlex SM batched repository-update facility at CICSPlex SM and later. The EYU9BCSD output is not compatible with, and cannot be used as input to, the batched repository-update facility supplied with earlier releases of CICSPlex SM.

For example, suppose a DESCRIPTION field contains the value:

```
1) Describe Resource
```

If you specify `INQUOTES(NO)`, which is the default, the EXTRACT routine will produce the following statement in the output data set:

```
DESCRIPTION(1) Describe Resource)
```

The CICSPlex SM batched repository-update facility interprets this as a DESCRIPTION field containing the value 1, followed by two unrecognizable keywords.

If you specify `INQUOTES(YES)`, EYU9BCSD places quotes around the field value. The output data set would contain the statement:

```
DESCRIPTION('1) Describe Resource')
```

This statement is interpreted correctly by the CICSPlex SM batched repository-update facility.

**Submitting a job to EYU9BCSD**

To submit a job to EYU9BCSD, you can use the `DFHCSDUP EXTRACT` command.

**Procedure**

- Specify the `DFHCSDUP EXTRACT` command as follows:
Notes:

- EYU9BCSD must be invoked from the USERPROGRAM keyword; it cannot be called on the entry linkage to DFHCSDUP using the EXITS parameter.
- The OBJECTS keyword is required.

Example

Figure 9 on page 89 is an example of the JCL that you can use to run EYU9BCSD. This sample JCL is supplied in the member EYUJCLEX in the CICSTS54.CPSM.SEYUSAMP library.

This example extracts resource definitions of all resource types from a specified CSD group (group_name). At the same time, a CICSPlex SM resource group (RESGROUP) is generated for that CSD group and associations are generated between the group and the resource definitions.
Delete the extract output file for a rerun of this job

```
//BR14OUT EXEC PGM=IEFBR14
//EYUOUT DD DISP=(MOD,DELETE,DELETE),
//  DSN=cpsm.index.EYUOUT.group_name,
//  SPACE=(TRK,(1,1)),
//  UNIT=SYSDA
```

Extract the CSD Resource Definitions

```
//CSDXTRCT EXEC PGM=DFHCSDUP,REGION=0M,
 //  COND=(0,NE),
 /*
  PARM='CSD(READONLY)' 
 //STEPLIB DD DISP=SHR,DSN=cics.index.SDFHLOAD
 //DFHCSD DD DISP=SHR,DSN=cpsm.index.SEYUAUTH
 //EYUOUT DD DISP=(,CATLG,DELETE),
 //  DSN=cpsm.index.EYUOUT.group_name,
 //  SPACE=(TRK,(1,5)),
 //  UNIT=SYSDA
 //SYSPRINT DD SYSOUT=*
 //SYSIN DD *
 extract userprogram(EYU9BCSD) objects group(group_name)
 /*
 //EYUIN DD *
 resgroup(group_name)
 resingrp(csdgroup)
 atomservice(*)
 bundle(*)
 connection(*)
 corbaserver(*)
 db2conn(*)
 db2entry(*)
 db2tran(*)
 djar(*)
 doctemplate(*)
 enqmodel(*)
 file(*)
 icpconn(*)
 journal(*)
 journalmodel(*)
 jvmserver(*)
 library(*)
 lsrpool(*)
 mapset(*)
 mqconn(*)
 partitionset(*)
 partner(*)
 pipeline(*)
 procsstype(*)
 profile(*)
 program(*)
 requestmodel(*)
 sessions(*)
 tcipservice(*)
 tdqueue(*)
 terminal(*)
 tranclass(*)
 transaction(*)
 tsmode(*)
 typeterm(*)
 urimap(*)
 webservice(*)
 */
```

List EYUOUT to view errors

```
//LISTOUT EXEC PGM=IEBGENER
//SYSUT1 DD DISP=OLD,DSN=cpsm.index.EYUOUT.group_name
//SYSUT2 DD SYSOUT=* 
 //SYSPRINT DD SYSOUT=* 
 //SYSIN DD DUMMY
```
Modify the sample JCL to provide the following information:

**CSDXTRCT**
The COMPAT keyword must be used on the CSDXTRCT PARM= statement to extract CICS resource attributes that are now obsolete; for example, the OMGINTERFACE, OMGMODULE, and OMGOPERATION attributes of a CICSPlex SM REQUESTMODEL resource definition.

**EYUOUT**
Identify `cpsm.index.EYUOUT.group_name` as a sequential data set where the batched repository-update facility commands generated by EYU9BCSD can be written.

**STEPLIB**
Identify:
- `cics.index.SDFHL-load` as the CICS load library containing the DFHCSDUP module.
- `cpsm.index.SEYUAUTH` as the CICSPlex SM load library containing EYU9BCSD.

**DFHCSD**
Identify `cics.dfhcsd` as the VSAM data set that serves as the CSD file.

**SYSIN**
Identify GROUP `group_name` as the CSD group from which definitions are to be extracted. The group name may contain wildcards. Identify LIST `list_name` as the CSD grouplist from which definitions are to be extracted. The list name may not contain wildcards.

For more details of the DFHCSDUP utility and its parameters, see System definition file utility program (DFHCSDUP).

To extract definitions from all the groups in a CSD group list:
1. Change GROUP(`group_name`) to LIST(`list_name`).
2. Identify a CSD group list.
3. Change all other occurrences of `group_name` to the appropriate `list_name`.

**EYUIN**
If you specify LIST(`list_name`) in the SYSIN statement, change the RESGROUP value from `group_name` to CSDGROUP. Specifying CSDGROUP generates a resource group for each CSD group in the group list.

**Output from EYU9BCSD**
You can use the CICSPlex SM-supplied extract routine EYU9BCSD to generate CICSPlex SM resource definition records for each CSD record identified in your input file. The output from EYU9BCSD is used to populate the data repository.

The CICSPlex SM extract routine EYU9BCSD uses the data extracted from the CSD by the DFHCSDUP EXTRACT command to generate batched repository-update facility commands like those shown in Figure 10 on page 91.
Figure 10. Sample edited output from EYU9BCSD

Note: If you did not specify a RESINGRP statement in your EYU9BCSD input, the CREATE xxxxDEF command is generated without a RESGROUP operand. That means the resource definition will not be associated with any resource group.

If multiple CSD records are found for the same resource type and name, multiple CREATE commands are generated, each with a different version number.

The batched repository-update facility CREATE commands are written to the EYUOUT output file you identified in the DFHCSDUP JCL.

Editing the EYUOUT file

About this task

The CREATE commands are generated in the proper form and the proper sequence for use by the batched repository-update facility. However, before you submit the EYU9BCSD output to the batched repository-update facility, you must edit the EYUOUT file as follows:

Context

The batched repository-update facility needs to know the CICSPlex SM context for the resource definitions being processed. You must insert a CONTEXT statement at the beginning of the file to identify the CICSPlex to which the updates apply. See Figure 10 on page 91.

Passwords

The CSD records extracted by DFHCSDUP do not include passwords. Any resource definitions that include passwords are generated with blanks ('X'40') in the password fields, unless you add the passwords manually.

You can edit individual CREATE commands in the file to add the appropriate password fields. The passwords are then included in the resource definitions that CICSPlex SM generates in the data
repository. Be aware, however, that the batched repository-update facility output will include a visible record of the passwords that you entered.

**Obsolete Fields**

The CSD records extracted by DFHCSDUP do not include fields that are considered obsolete, but which are retained for compatibility (such as RSL in a map set, partition set program, or transaction definition).

You can edit individual CREATE commands in the file to add the appropriate fields. The additional fields are then included in the resource definitions that CICSPlex SM generates in the data repository.

**Submitting EYUOUT to the batched repository-update facility**

**About this task**

After you have made the necessary changes to the EYU9BCSD output file, you can submit it as input to the batched repository-update facility.

For more information on the batched repository-update facility, see Administering CICSPlex SM.

**Example BAS tasks**

This section describes a number of typical BAS tasks.

**Establishing CICSpex connectivity**

This example uses the Web User Interface (WUI) to create the pairs of connection and session definitions that are required to connect the CICS systems in the supplied CICSpex, EYUPLX01.

**Procedure**

1. Create the first ISC connection definition.
   a) From the WUI main menu, click Administration > Basic CICS resource administration > CICS resource definitions > Connection definitions to open the Connection definition tabular view.
   b) If the current context is not EYUPLX01, specify EYUPLX01 in the Context field and click Refresh.
   c) Click Create and complete the Create panel as follows:

<table>
<thead>
<tr>
<th>Field name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection definition name</td>
<td>C001</td>
</tr>
<tr>
<td>Description</td>
<td>ISC Connection</td>
</tr>
<tr>
<td>Access method</td>
<td>z/OS Communications Server</td>
</tr>
<tr>
<td>Protocol</td>
<td>Appc</td>
</tr>
<tr>
<td>Nature of connection</td>
<td>Notapplic</td>
</tr>
<tr>
<td>APPC terminal on single session APPC link</td>
<td>No</td>
</tr>
<tr>
<td>Data stream type</td>
<td>User</td>
</tr>
<tr>
<td>Record format</td>
<td>U</td>
</tr>
<tr>
<td>Queue limit</td>
<td>No</td>
</tr>
<tr>
<td>Maximum queue time</td>
<td>No</td>
</tr>
<tr>
<td>Autoconnect sessions for z/OS Communications Server</td>
<td>Yes</td>
</tr>
<tr>
<td>Connection status</td>
<td>Yes</td>
</tr>
<tr>
<td>Level of attach-time security</td>
<td>Local</td>
</tr>
</tbody>
</table>
d) Click Yes to confirm the operation. The new ISC connection is created and the Connection definition tabular view is redisplayed.

2. Create the associated session definition.

a) From the WUI main menu, click Administration > Resource definitions > Session definitions to open the Session definition tabular view.

b) Click the Create button and complete the Create panel:

<table>
<thead>
<tr>
<th>Field name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session definition name</td>
<td>S001</td>
</tr>
<tr>
<td>Definition version</td>
<td>0</td>
</tr>
<tr>
<td>Definition description</td>
<td>ISC session</td>
</tr>
<tr>
<td>Connection definition name</td>
<td>C001</td>
</tr>
<tr>
<td>Intercommunication link protocol</td>
<td>Appc</td>
</tr>
<tr>
<td>Maximum number of sessions in the group</td>
<td>4</td>
</tr>
<tr>
<td>Maximum number of contention winner sessions</td>
<td>2</td>
</tr>
<tr>
<td>Receive buffer size</td>
<td>4096</td>
</tr>
<tr>
<td>Session priority</td>
<td>0</td>
</tr>
<tr>
<td>Autoconnect option</td>
<td>YES</td>
</tr>
<tr>
<td>Session inservice</td>
<td>N_a</td>
</tr>
<tr>
<td>Chain assembly required</td>
<td>Yes</td>
</tr>
<tr>
<td>Honor release requests</td>
<td>No</td>
</tr>
<tr>
<td>Honor disconnect requests</td>
<td>No</td>
</tr>
<tr>
<td>Recovery option</td>
<td>Sysdefault</td>
</tr>
<tr>
<td>XRF recovery notification option</td>
<td>N_a</td>
</tr>
</tbody>
</table>

Other fields can remain blank.

c) Click Yes to confirm. The ISC session definition is created and the Session definition tabular view is redisplayed.

3. Define the link between the relevant CICS systems.

a) From the WUI main menu, click Administration > Basic CICS resource administration > CICS system links and related resources > All system links.

b) Click the Create button and complete the Create panel as follows:

<table>
<thead>
<tr>
<th>Field name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary CICS system name</td>
<td>EYUMAS1A</td>
</tr>
<tr>
<td>Field name</td>
<td>Value</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Secondary CICS system name</td>
<td>EYUMAS1B</td>
</tr>
<tr>
<td>Connection resource type</td>
<td>Sna</td>
</tr>
<tr>
<td>Primary connection definition name</td>
<td>C001</td>
</tr>
<tr>
<td>Primary connection definition version</td>
<td>1</td>
</tr>
<tr>
<td>Secondary connection definition name</td>
<td>S001</td>
</tr>
<tr>
<td>Secondary connection definition version</td>
<td>1</td>
</tr>
</tbody>
</table>

c) Click Yes to create the link. The ISC link between EYUMAS1A and EYUMAS1B is created and the All system links view is redisplayed.

4. Reuse the existing ISC link definition to define system links between other CICS systems.
   a) In the All system links view, select the entry for EYUMAS1A and click Create. The Create System Link panel is displayed, showing the values you entered when creating the link between EYUMAS1A and EYUMAS1B.
   b) Update the Primary CICS system name field to create an ISC link between EYUMAS4A and EYUMAS1B.
   c) Click Yes to confirm. The ISC link between EYUMAS4A and EYUMAS1B is created and the System link definition view is redisplayed.

Repeat this step to create ISC links between other CICS systems in the CICSPlex.

Defining resources for an application
This example uses the Web User Interface (WUI) to create the resource definitions that are required for a workload manager (WLM) application.

About this task
The example describes the use of resource assignments and uses the Fully functional Business Application Services (BAS) administration views menu, intended for more advanced CICSPlex SM users.

Procedure
1. Create a resource group definition.
   a) From the WUI main menu, click Administration > Fully functional Business Application Services (BAS) administration > Resource groups to open the Resource group definition tabular view.
   b) If the current context is not EYUPLX01, specify EYUPLX01 in the Context field and click Refresh.
   c) Click the Create action button and complete the Create panel as follows:

   Resource group name
   EYUBAG01

   Description
   SSET — WLM IVP application

   Mode value
   NO

   Other fields can remain blank.
   d) Click Yes to confirm. The Resource group definition tabular view is redisplayed.

You have created an empty group, EYUBAG01. The next step is to create the resource definitions that constitute the WLM application and add them to the group.

2. Create the transaction definition.
a) From the WUI main menu, click Administration > Fully functional Business Application Services (BAS) administration > Resource definitions > Transaction definitions to open the Transaction definition tabular view.

b) Click the Create action button and complete the Create panel as follows:

Transaction definition name
  ETVP

Definition version
  0

Description
  SSET — Workload IVP application

Resource group name
  EYUBAG01

First program name
  EYUWLMVP

Size in bytes of transaction work area
  0

Transaction profile
  DFHCICST

Enabled status
  Enabled

Task data location
  Below

Task data key
  User

Storage clearance status
  No

Runaway timeout value
  SYSTEM

Shutdown run status
  Disabled

Transaction isolation option
  Yes

Dynamic routing option
  Yes

Dynamic routing status
  Yes

Remote system name
  1A3A

Remote transaction name
  ETVP

Transaction routing profile
  DFHCICSS

Queuing on local system
  N_a

Transaction priority
  1

Transaction class number
  1
Transaction class name
DFHTCL00
CICS failure action
Backout
Indoubt wait option
Yes
Indoubt wait time (days, hours and minutes)
0
Indoubt failure processing action
Backout
Resource security checking
No
Command level security option
No
Other fields can remain blank.
c) Click Yes to confirm. The Transaction definition tabular view is redisplayed.

3. Create the program definition.
a) From the WUI main menu, click Administration > Fully functional Business Application Services (BAS) administration > Resource definitions > Program definitions to open the Program definition tabular view.
b) Click the Create action button and complete the Create panel as follows:

Program definition name
EYUWLMVP
Definition version
0
Definition description
SSET — Workload IVP definition
Resource group name
EYUBAG01
Language
Assembler
Reload new copy
No
Residence status
No
Program storage release
Normal
Use program from the link pack area (LPA)
No
Enabled status
Enabled
Resource security value
0
Display execution diagnostic facility (EDF) screens
Yes
Data location
Below
Program execution key
User
Concurrency status
Quasirent

Dynamic routing status
No

API subset restriction type
Fullapi

Hot pooling status
No

Other fields can remain blank.

c) Click Yes to confirm. The Program Definition tabular view is redisplayed.

4. Create the first file definition.

a) From the WUI main menu, click Administration > Fully functional Business Application Services (BAS) administration > Resource definitions > File definitions to open the File definition tabular view.

b) Click the Create action button and complete the Create panel as follows:

File definition name
EYUFIL01

Definition version
0

Definition description
Payroll updates — Local

Data set name
PAYROLL.EUTL3

Record level sharing (RLS) file access mode
No

Local shared resources pool ID
1

Default level of read integrity
Uncommitted

VSAM data set name sharing
Allreqs

Maximum concurrent requests against file
30

Initial status
Enabled

File open time
Firstref

Disposition of file
Share

Number of data buffers
31

Number of index buffers
30

Data table type
No

Maximum number of records in data table
NOLIMIT

Table name
IANSFILE

Update model
  Locking

Load type
  No

Record format
  Variable

Operations (Add, browse, delete, read, update)
  Yes (for all)

Read operations recorded on journal
  None

Synchronous auto journaling for input
  No

Rewrite/delete operations recorded on journal
  No

Add operations recorded on journal
  No

Synchronous auto journaling for output
  No

Type of recovery
  None

CICS VSAM file backup type
  Static

Other fields can remain blank.

c) Click Yes to confirm the file creation. The file definition for EYUFIL01 is created and the File definition tabular view is redisplayed.

5. Reuse the existing file definition to create a definition for another file.

  a) In the File definition tabular view, select the entry for EYUFIL01 and click the Create action button.

    The Create File Definition panel is displayed, showing the values you entered when creating EYUFIL01.

  b) Change File definition name to EYUFIL02

  c) Make the following fields blank:

    Local shared resources pool ID
    Maximum concurrent requests against file
    Number of data buffers
    Number of index buffers

  d) Click Yes. The file definition for EYUFIL02 is created and the File definition tabular view is redisplayed.

You have created all of the resource definitions for the WLM application. The next step is to assign those resources to the appropriate CICS systems.

6. Create a resource assignment for the transaction definition.

  a) From the WUI main menu, click Administration > Fully functional Business Application Services (BAS) administration > Resource assignments to open the Resource assignment definition tabular view.

  b) Click the Create action button to open a Resource assignment definition create view.

    Complete the Create panel as follows:

    Resource assignment definition name
    EYUBAA01
Description
SSET — Assign transaction definitions

Resource group name
EYUBAG01

Type of resource to be processed by assignment
TRANDEF

Resource usage type
Remote

Resource usage qualifier
Dynam

Target scope name
EYUMAS1A

Related scope name
EYUMAS1B

Scope that override is applied to
Related

Other fields can remain blank.

c) Click Yes. The resource assignment for transaction definitions is created and the Resource assignment definition tabular view is redisplayed.

Note: This example does not make use of filter and override expressions for the assignment.

7. Create a resource assignment for the program definition.

a) In the Resource assignment definition tabular view, click the Create action button and complete the Create panel as follows:

Resource assignment definition name
EYUBAA02

Description
SSET — Assign program definitions

Target scope name
EYUCSG03

Resource group name
EYUBAG01

Type of resource to be processed by assignment
PROGDEF

Resource usage type
Local

Resource usage qualifier
N_a

Scope that override is applied to
Related

Other fields can remain blank.

b) Click Yes. The resource assignment for program definitions is created and the Resource assignment definition tabular view is redisplayed.

8. Create a resource assignment for the file definitions.

a) In the Resource assignment definition tabular view, click the Create action button and complete the Create panel as follows:

Resource assignment definition name
EYUBAA03
Description
SSET — Assign file definitions

Target scope name
EYUCSG03

Related scope name
EYUMAS4A

Resource group name
EYUBAG01

Type of resource to be processed by assignment
FILEDEF

Resource usage type
Remote

Resource usage qualifier
N_a

Scope that override is applied to
Related

Other fields can remain blank.

b) Click Yes. The resource assignment for file definitions is created and the Resource assignment definition tabular view is redisplayed.

All of the resource assignments for the resource definitions have now been created. The next step is to group all of the resources together and identify them as an application.

9. Create a resource description for the WLM application.

a) From the WUI main menu, click Administration > Fully functional Business Application Services (BAS) administration > Resource descriptions to open the Resource description definition tabular view.

b) Click the Create action button and complete the Create panel as follows:

Resource description name
EYUBAD01

Description
SSET — WLM IVP Application

Logical scope registration
Yes

Logical scope name
WLMIVP

Autoinstall request type
Yes

Other fields can remain blank.

c) Click Yes. The resource description for the WLMIVP application is created and the Resource description definition tabular view is redisplayed.

Note: This example does not make use of the fields relating to resource groups and the target and related scopes to which they apply. You already provided this information in the resource assignments you created.

10. Associate the resource assignment for each resource type with the WLMIVP resource description.

a) From the WUI main menu, click Administration > Fully functional Business Application Services (BAS) administration > Resource assignments to open the Resource assignment definition tabular view.

b) Select the entry for EYUBAA01 (the resource assignment for transaction definitions) and click the Add to Resource description button. Complete the Add to Resource description panel as follows:
c) Click Yes. The association between EYUBAA01 and EYUBAD01 is created and the Resource assignment definition tabular view is redisplayed.

Repeat this step for resource assignments EYUBAA02 and EYUBAA03.

11. Modify the CICS system definitions to indicate that automatic resource installation is required each time a cold start is performed for the target systems.
   a) From the WUI main menu, click Administration > Topology administration > System definitions to open the CICS system definition tabular view.
   b) Select the entry for the CICS system EYUMAS1A. and click the Update button.
   c) Locate the Business Application Services section of the panel and update the fields as follows:

   **Install BAS resources option**
   - Coldonly

   **BAS install failure action**
   - Continue

d) Click Yes. The CICS system definition is updated and the CICS system definition tabular view is redisplayed.

Repeat this step for other CICS systems in the target scope.

### Installing CICS resources dynamically

**About this task**

This section provides examples of the various methods that CICSPlex SM supports for installing resources dynamically into active CICS systems using the Web User Interface (WUI). These methods are similar to the installation options provided by CEDA.

**Installing an individual resource**

This example installs an individual program into an active CICS system.

1. Display a list of the programs defined to CICSPlex SM.

   a. From the WUI main menu, click Administration > Basic CICS resource administration > Resource definitions > Program definitions to open the Program definitions tabular view.

   b. If the current context is not EYUPLX01, specify EYUPLX01 in the Context field and click Refresh.

2. Install the EYUWLMVP program.

   a. Select the entry for EYUWLMVP and click the Install button. The Install view is displayed.

   b. In the Target Scope value field, type in EYUMAS2A and click Yes. The program EYUWLMVP is installed in EYUMAS2A and the Program definitions tabular view is redisplayed.

**Installing resources from a resource group**

This example installs the programs defined in a given resource group into an active CICS system.

1. Display a list of the resource groups defined to CICSPlex SM.

   a. From the WUI main menu, click Administration > Basic CICS resource administration > Resource groups to open the Resource group definitions tabular view.

   b. If the current context is not EYUPLX01, specify EYUPLX01 in the Context field and click Refresh.

2. Install the programs in resource group EYUBAG01.

   a. Select the entry for EYUBAG01 and click the Install... button.
b. Complete the **Install** view as follows:

   **Resource type**
   PROGDEF

   **Target scope value**
   EYUMAS2A

   The other fields can remain unchanged.

c. Click **Yes**. All of the programs defined in EYUBAG01 are installed in EYUMAS2A and the **Resource group definition** tabular view is redisplayed.

### Installing a resource description

This example installs all of the resources associated with a given resource description into one or more active CICS systems.

1. Display a list of the resource descriptions defined to CICSPlex SM.
   a. From the WUI main menu, click **Administration > Basic CICS resource administration > Resource descriptions** to open the **Resource description definitions** tabular view.
   b. If the current context is not EYUPLX01, specify EYUPLX01 in the **Context** field and click **Refresh**.

2. Install resource description EYUBAD01.
   a. Select the entry for EYUBAD01 and click the **Install...** button. The **Install** view is displayed.
   b. Accept the supplied values and click **Yes**.

   All of the resources associated with EYUBAD01 are installed according to the target and related scopes named in that resource description. The **Resource description** tabular view is redisplayed.

### Resource assignment definitions

A resource assignment describes the characteristics of selected resource definitions and how those resources are to be assigned to CICS systems.

The resource definitions to be assigned must be of a single resource type (such as a file) and must be associated with a resource group. The resource assignment identifies which resource definitions in the group are selected and to which CICS systems they are assigned. A single resource definition can be assigned as both a local and remote resource in multiple CICS systems. A resource assignment must be associated with at least one resource description (RESDESC object) before any assignment can begin.

### Accessing resource assignment definitions

#### About this task

To access from the main menu, click **Administration > Fully functional Business Application Services (BAS) administration > Resource assignments**.

#### Creating a resource assignment

**About this task**

To define a resource assignment:

- Access the **Resource assignment definitions** view.
- To create a definition from an existing resource assignment, click on the check box and click the **Create...** button. To display a blank screen, click the **Create...** button.
- Complete the fields and click **Yes** to create the resource assignment. Click **No** to abandon the process.
Adding a resource assignment to a resource description

About this task
You can add a resource assignment to a resource description in two ways:

• Access the Resource assignment definitions view. Either:
  – Select a resource assignment by clicking the check box. Click the Add to Resource description... button. The Add to Resource description view is displayed.
  – Complete the fields and click Yes to create the association. Otherwise, click No to abandon the process.

• Or:
  – Click a resource assignment name to display the Resource assignment definitions (EYUSTARTRASGNDEF.DETAILED) view.
  – Click the Add to Resource description... button. The Add to Resource description view is displayed.
  – Complete the fields and click Yes to create the association. Otherwise, click No to abandon the process.

Note:
1. If you do not specify values for the Group name, Target scope, and Related scope fields on this view, you must do so on the associated resource description definition.
2. Adding a resource assignment to a resource description could result in inconsistent resource set or inconsistent scope errors. For information about these types of problems and how to resolve them, see “Validation of a set of resources” on page 69.

Resource assignments in resource descriptions
The Resource assignments in a resource description view describes the membership of a resource assignment (RASGNDEF object) in a resource description (RESDESC object). A Resource assignments in a resource description (RASINDSC) association is created automatically when a resource assignment is added to a resource description.

Accessing the Resource assignments in a resource description view

About this task
To display information about existing resource descriptions and the resource assignments associated with them, from the main menu, click:

• Administration > Fully functional Business Application Services (BAS) administration > Resource assignments in resource descriptions.

Updating a resource description-to-assignment association
To update a resource description-to-assignment association:

• Access the Resource assignments in resource description view and select a resource assignment by clicking the check box.

• Click the Update... button. The Resource assignments in resource description (EYUSTARTRASINDSC.CREATE) view is displayed.

• Update the fields and click Yes to update the association. Otherwise, click No to abandon the process.
Resource assignment process view

The **Resource assignment process** view (RASPROC object) displays the resources that will be selected when the specified resource assignment is processed.

Resources are selected based on the contents of the associated resource group and the selection criteria of the assignment itself.

**Accessing the resource assignment process view**

**About this task**

To display information about the expected results of the resource assignment process:

- From the main menu, click Administration views > Fully functional Business Application Services (BAS) administration views.
- From the Resources deployed by... submenu, click Resource assignments to display the Resource selected by resource assignments view.

1. Journal definitions (JRNLDEF objects), file key segment definitions (FSEGDEF objects), and session definitions (SESSDEF objects) can appear in a Resource assignment process view; this is to present a complete picture of your logical scope. Note, however, that those resources are never installed in a CICS system.

2. Connection definitions (CONNDEF objects) can be installed in a CICS system only if they have associated session definitions (as noted in the Connection name field). If the Connection name field for a session definition is blank, the connection cannot be installed.

Selecting resources by resource description

The **Resources selected by resource description** view displays the resources that will be selected when the specified resource description is processed.

Resources can be selected from:

- Resource assignments that are currently associated with the resource description
- Resource groups that are directly associated with the resource description

**Accessing resources selected by resource description**

**About this task**

You can access the Resources selected by resource description view in two ways:

- From the main menu, click Administration views. From the Administration views menu, click either Basic CICS resource administration views or Fully functional Business Application Services (BAS) administration views.
  - From the menu, click Resource descriptions to display the Resource descriptions tabular view.
  - Click a resource description name to display the Resource descriptions detailed view.
  - Click the link Associated resource definitions & systems to display the Resources selected by resource description view.
- Or:
  - From the main menu, click Administration views. From the Administration views menu, click either Basic CICS resource administration views or Fully functional Business Application Services (BAS) administration views.
  - From the menu, Under Associations, click CICS resource definitions in resource groups to display the CICS resource definitions in resource group tabular view.
  - Click a resource group name to display the Resource group definitions detailed view.
  - Click the link Resource descriptions with which this is associated to display the Resource groups in description view.
– Click a resource description name to display the Resource descriptions detailed view.
– Click the link Associated resource definitions & systems to display the Resources selected by resource description view.

**Resource descriptions**

A resource description identifies a set of logically related resource definitions that can be installed in CICS systems that support resource installation or can be named as the scope for CICSPlex SM requests.

**Accessing resource descriptions**

**About this task**

To access resource descriptions

- From the main menu, click Administration views. From the Administration views menu, click either Basic CICS resource administration views or Fully functional Business Application Services (BAS) administration views.
- From the menu, click Resource descriptions to display the Resource descriptions tabular view.

**Creating a resource description**

**About this task**

To create a resource description:

- Access the Resource descriptions view.
- Click the Create... button to display a blank Resource descriptions detailed view. Otherwise, to base the new definition on an existing definition, click the Record check box and click the Create... button.
- Complete the fields and click the Yes button to create the resource description. Otherwise, click No to end the process.

**Replacing a resource description**

**About this task**

To replace a resource description:

- Access the Resource descriptions tabular view and select a resource description by clicking the Record check box.
- Click the Replace... button to display the Resource descriptions replace view.
- Amend the fields as necessary and click Yes to replace the resource description. otherwise click No to end the process.

When you replace a resource description, CICSPlex SM attempts to replace all of the resources associated with an installed resource description with the resources associated with a new description. That is, CICSPlex SM:

- Discards any resources that are associated with the old resource description, but not the new one.
- Reinstalls any resources that are associated with both the old resource description and the new one.
- Installs any additional resources that are associated with the new resource description.

For replacement to occur, the CICS systems named in the Target and Related scope fields of both resource descriptions must be active and must be running a release of CICS that supports the EXEC CICS CREATE command.

**Note:** For information on what happens if your request does not complete successfully, see “Handling dynamic installation errors” on page 85.
**Resource groups definition view**

A resource group (RESGROUP object) is used to associate one or more related resource definitions. The resource definitions in a resource group can be for the same or different resource types.

**Accessing resource group definitions**

**About this task**

To access the resource group definitions:

- From the main menu, click Administration views.
- From the Administration views menu, click either Basic CICS resource administration views or Fully functional Business Application Services (BAS) administration views.
- Under Definitions, click Resource groups to display the Resource group definitions tabular view.

**Creating a resource group**

**About this task**

To create a resource group:

1. Access the Resource group definitions (EYUSTARTRESGROUP.TABULAR) view as described in “Accessing resource group definitions” on page 106.
2. Click the Create... button to display the Resource group definitions (EYUSTARTRESGROUP.CREATE) view.
3. Type in the attribute values.
4. Click Yes to create the resource group definition or No to return to the Resource group definitions view without creating the resource group.

**Adding a resource group to a resource description**

**About this task**

Complete these actions to add the resource group to the resource description:

1. Access the Resource group definitions (EYUSTARTRESGROUP.TABULAR) view as described in “Accessing resource group definitions” on page 106.
2. Select a resource group by clicking the box in the record column.
3. Click the Add to Resource description to display the Add to Resource description (EYUSTARTRESGRP.ADDTODSC) view.
4. Type in the name of the resource description. Optionally, supply more explanatory information in the Description field.
5. Click Yes to add the resource group to the resource description or click No to stop the process.

**Note:** Adding a resource group to a resource description might result in inconsistent resource set errors. For information about this type of problem and how to resolve it, see “Validation of a set of resources” on page 69.

**Resource groups in description view**

The Resource groups in description view describes the membership of a resource group (RESGROUP object) in a resource description (RESDESC object).

A Resource groups in description association is created automatically when a resource group is added to a resource description, that is, there is no association between the resource description and a resource assignment (RASGNDEF object).
Accessing resource groups in descriptions

About this task
To access resource groups in a resource description:
• From the main menu, click Administration views.
• From the Administration views menu, click either Basic CICS resource administration views or Fully functional Business Application Services (BAS) administration views.
• Under Associations, click Resource groups in description to display the Resource groups in descriptions tabular view.

Updating a resource description-to-group association

About this task
To update a resource description-to-group association:
• Access the Resource groups in description view.
• Select an association by clicking the Record check box and click the Update... button. The Resource groups in description create view is displayed.

Resource groups in description attributes

Description
(Optional.) A 1- to 30-character description of a resource description-to-group association.

Resource definitions in resource group view

The Resource definitions in resource group view (RESINGRP object) displays information about resource groups and the resource definitions associated with them.

A Resource definitions in resource group association is created automatically when a resource definition is added to a resource group (RESGROUP object).

Accessing resources in resource groups

About this task
To access resources in resource groups:
• From the main menu, click Administration views.
• From the Administration views menu, click either CICS basic resource administration views or Fully functional Business Application Services (BAS) administration views.
• From the menu, under Associations, click Resource definitions in resource groups to display the CICS resource definitions in resource group tabular view.

CICS system link definitions

With Business Application Services, you can create one system link (SYSLINK) for each pair of CICS regions. The system link definition describes the connection type and definitions that are required between the pair of regions. You can reuse connection definitions to create any number of system links that share the same characteristics.

You can define connections of different types using SYSLINK objects. These connections include IPIC, MRO, and ISC. The following example shows how you can reuse the same definitions for IPIC to create three different SYSLINK objects.
Figure 11. An example of reusing definitions to create connections

The APPLID and SYSID values used in the connections that are defined between the primary and secondary regions depend on when the regions were started and whether or not the APPLID and SYSIDNT values used in the CICS system definition (CICSSYS view) match the values in use by CICS:

- If the partner system is not active or not connected to CICSPlex SM, the APPLID and SYSIDNT values used for the connection definition are taken from the CICSSYS definition for the partner system.
- If the partner system is active and connected to CICSPlex SM, the APPLID and SYSIDNT used for the connection definition are the values currently in use by the partner system.

If you change the APPLID or SYSIDNT of a CICS region that is managed by CICSPlex SM, you must update the CICSSYS definition:

- After the values have been changed, the managed CICS region continues to use the old values as long as it remains active. During this time, partner systems installing system links that refer to this region use the old APPLID or SYSIDNT values.
- After the region has shut down following the change, and before it has started again, partner systems installing system links use the updated values from the CICSSYS definition.
- After the region has been restarted, it uses the new values. Partner systems installing links that refer to this region also use the new values.

The network ID, host, and port numbers of IPIC system links can also change when you install a SYSLINK resource object. These attribute values are overridden by the system definition of the primary and secondary regions, if specified, to ensure that the system link will work correctly when installed.

Limitations of viewing system definition links

A system link is identified in the data repository by both CICS region names. A given CICS region name might be the primary region for some system link definitions and the secondary region of others, depending on how the definition was created. Any definition that names that region, regardless of its position, is a valid system link. However, because the same region name can appear in either the Primary or Secondary field, the “CICS system link definitions” view of the Web User Interface has certain limitations:

- The SORT display command cannot display all the system links for a given CICS region together. You can use this command to sort records based on the contents of a single field, but the name of a CICS region can occur in either of two fields.
- A single “CICS system link definitions” view cannot display all the system links for a given CICS region to the exclusion of all other system links. Because a system can be either the primary or secondary system in a system link definition, a single “CICS system link definitions” view cannot adequately filter the records.
Viewing CICS system link definitions
You can view your system links using either the CICS Explorer or the Web User Interface.

About this task
The CICS system link definitions and related resources menu in the WUI displays information about the connections between CICS regions in a CICSpulse. From this menu, you can filter the system links based on connection type and look at related resource definitions.

To view system link definitions (SYSLINK objects) in the CICSpulse using the Web User Interface:

Procedure
1. From the main menu, click Administration and then Basic CICS resource administration or Fully functional Business Application Services (BAS) administration.
2. Select the appropriate link in the CICS system link definitions and related resources menu to view all system links or system links of a particular connection type.
   The CICS system link definitions view displays the system links.
3. Select the SYSLINK object that interests you from the list.

Installing system links using the WUI
When you install a system link, you are establishing a connection between two CICS regions that are managed by CICSpulse SM. The definitions referred to by that system link are installed in the target CICS regions.

Before you begin
You must have defined the required connection objects, as described in “Defining connections between CICS regions” on page 67.

About this task
You can install system links automatically at CICS initialization by specifying the ALWAYS attribute in the Install BAS resources option field of the CICS system definition. You can also install system links dynamically while a CICS region is active using the CICS Explorer or Web User Interface. The following procedure describes how to install system links dynamically using the WUI.

Procedure
1. From the main menu, click Administration > Basic CICS resource administration > CICS system links and related resources.
2. Select the appropriate link to display all SYSLINK objects or filter by connection type.
3. Select the check box next to the SYSLINK that you want to install and click the Install button to open an Install input panel.
4. Fill out the fields in the input panel to select the checks that CICSpulse SM will run before installing the resources:
   a) Select the type of checking to be performed before attempting to install resources in the CICS regions associated with the description.
   b) Select whether the existence and operational state of all resources are to be checked before an EXEC CICS CREATE command is issued.
   c) Select whether you want CICSpulse SM to force the installation of the resources.
      CICSpulse SM checks to see if it installed the current resource in the CICS region. If it is installed, CICSpulse SM does not install the resource, to avoid changing the attributes of an active resource.
5. Click Yes to install the system link in the active CICS regions.

Results
CICSpulse SM creates and installs the resource definitions into the specified target CICS regions to create the connection. Some of the values are altered in the target regions by the installation process.
• For an MRO or IPIC connection, the Receive count is swapped with the Send count and the Receive size is swapped with the Send size on the CONNDEF or IPCONDEF resource objects.

• For an APPC connection, the Receive size field is swapped with the Send size and the "Maximum number of sessions supported as contention winners" is recalculated by subtracting the 'Maximum number of sessions supported as contention winners' from the "Maximum number of sessions in the group" in the primary CICS region.

For IPIC connections, the TCPDEF resource object installs first followed by the IPCONDEF. If a TCPDEF resource object of the same name and port number is already installed and is in the OPEN state, CICSPlex SM does not attempt to reinstall the resource object. Some of the values are altered in the definitions for both the primary and secondary regions:

• The URM value is always set to NO when the TCPDEF resource object is installed.

• If a network ID is specified in the system definition of the secondary region, it overrides the value of the network ID in the IPIC connection definition of the primary region.

• If a host or port number is specified in the system definition of the secondary region, it overrides the value of the host and port number in the IPIC connection definition of the primary region.

• An IPIC connection definition on the secondary region inherits the host and port number from the TCPDEF resource object.

• If the host and port number are specified in the system definition of the primary or secondary region, these values override the values in the TCPDEF resource object for that region. If the TCPDEF resource object is installing on the secondary region, the host and port number are taken from the IPCONDEF definition on the primary region.

What to do next
You can verify that the connection is active by looking at the installed resources on the pair of CICS regions.

Removing a CICS system link
You can remove a CICS system link from the data repository using either the CICS Explorer or the Web User Interface.

Procedure
1. From the main menu, click Administration and then Basic CICS resource administration or Fully functional Business Application Services (BAS) administration.
2. Click System link definitions > All system links to access the System link definitions view.
3. Click the check box by the CICS system link that you want to remove.
4. Click Remove... to display the Remove view.
5. Click Yes to remove the CICS system link definition.

Results
The system link is removed from the data repository. However, removing a system link does not delete the resource objects that describe the connection from the data repository.

CICS system resources
The Resources assigned to CICS systems view displays the resources that will be assigned to a specified CICS system.

Resources are selected based on the resource descriptions currently associated with the CICS system.

Accessing the SYSRES view

About this task
To display information about the resources that will be assigned to a CICS system:
- From the main menu, click **Administration views**
- From the **Administration views** menu, click either **Basic CICS resource administration views** or **Fully functional Business Application Services (BAS) administration views**.
- In the **Resources deployed by...** submenu, click **CICS system**. The **Resource assigned to CICS systems** view is displayed

**Administering the Web User Interface**

This information provides guidance for administrators on managing the Web User Interface.

**The CICSPlex SM Web User Interface transaction (COVC)**

A CICSPlex SM Web User Interface (WUI) server controller transaction (COVC) is supplied for use by an administrator with a terminal connected to the Web User Interface server CICS region.

The functions of this transaction are:

- To start up and shut down the Web User Interface environment
- To display a summary of Web User Interface status information
- To display details of active user sessions and allow termination of individual sessions
- To import and export Web User Interface repository information including supplied and customized view and menu definitions, map objects, user objects and user group profiles.
- To set trace flags dynamically.

If you run the COVC transaction, with no further input, that is by typing COVC followed by no other command, you are presented with the CICSPlex SM Web User Interface control panel, as shown in **Figure 12 on page 111**.

**Note:** Ensure that the COVC and COVG transactions can be run only from regions that are designated as WUI server regions. Also ensure that only users who are authorized to do so can start or stop the WUI server.

<table>
<thead>
<tr>
<th>COVC</th>
<th>CICSPlex SM Web User Interface Control</th>
<th>EYUVCTR</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Trace Flags</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CICSPlex SM, an element of CICS Transaction Server for z/OS, Ver 3 Rel 2
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(C) Copyright IBM Corp. 1994, 2006. All rights reserved

Current Status : Ready
Applid : IYCQSTGW

Time : 19:01:51
Date : 05/25/2007

PF 1 Help 3 Exit 12 Return

**Figure 12. CICSPlex Web User Interface control panel**

**Starting and stopping the Web User Interface server**

If the Web User Interface server is not already started during PLT processing, you can start it by selecting the **Start Server** option from the COVC control panel. Message EYUVS0900I is issued on the control panel indicating that the Web User Interface server start has been requested.
Note: If the Web User Interface server fails to start, the CICS region will be terminated.

To stop the Web User Interface server, select the Stop Server option from the COVC control panel. Message EYUVS0901I is issued on the control panel, indicating that the Web User Interface server Stop has been requested.

Note: Stopping the Web User Interface server using the COVC transaction shuts down the CICS system acting as the Web User Interface server on completion of the COVC transaction.

You can also start the Web User Interface server by issuing the following command:

```cics
COVC START
```

You can stop the Web User Interface server by issuing the following command:

```cics
COVC STOP
```

You can issue the COVC START and COVC STOP commands from the CICS terminal or from the console using the MVS Modify command.

If you attempt to start the Web User Interface server when it has already started, message EYUVS0902W is issued indicating that the Web User Interface server is currently active. Similarly, if you attempt to stop the Web User Interface server when it has already stopped, message EYUVS0903W is issued indicating that the Web User Interface server is currently inactive.

Do not use CEMT, the CICS Explorer, or the WUI CICSRGN view to shut down a WUI server region. If you use these methods, CICSPlex SM cleanup does not take place. In this situation, you might receive messages EYUXS0910I, EYUXS1014I, EYUXS1019W, and EYUXS1016E and an SVC dump with a title similar to the following example:

```text
EYU9XSTR Dump, jobname, applid, sysname, LMAS, COVA, 000000, TRCV, EYU9XSTR, dd/mm/yyyy, hh:mm:ss
```

In addition to the SVC dump, API resources might be orphaned, as noted in the EYUXS1019W message.

Displaying status details

To display the Web User Interface server status details, select the Status Details option from the COVC control panel.

This option opens the Status Details panel, as shown in Figure 13 on page 112.

```
<table>
<thead>
<tr>
<th>COVC</th>
<th>CICSPlex SM Web User Interface Control</th>
<th>EYUVCTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status Details</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CMAS Sysid</td>
<td>QSTX</td>
<td></td>
</tr>
<tr>
<td>Server Sysid</td>
<td>QSGW</td>
<td></td>
</tr>
<tr>
<td>CICSPlex SM Release</td>
<td>0320</td>
<td></td>
</tr>
<tr>
<td>Secure Sockets</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Port</td>
<td>05126</td>
<td></td>
</tr>
<tr>
<td>Hostname</td>
<td>MVSXX.COMPANY.COM</td>
<td></td>
</tr>
<tr>
<td>TCP/IP Service Name</td>
<td>EYUWUI</td>
<td>TCP/IP Family : IPV4</td>
</tr>
<tr>
<td>TCP/IP Service Status</td>
<td>Open</td>
<td></td>
</tr>
<tr>
<td>TCP/IP Address</td>
<td>127.10.10.12</td>
<td></td>
</tr>
<tr>
<td>Current Status</td>
<td>Ready</td>
<td></td>
</tr>
<tr>
<td>Applid</td>
<td>IYCQSTGW</td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>19:04:49</td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>02/27/2007</td>
<td></td>
</tr>
</tbody>
</table>

PF  1 Help      3 Exit                                        12 Return
```

Figure 13. Status Details panel

An explanation of some of the fields shown in Figure 13 on page 112 follows:
• **CMAS Sysid**
  Is the system ID of the CMAS to which the Web User Interface server is connected.

• **Secure Sockets**
  Tells you if your Web User Interface server is using the secure sockets layer (SSL), as defined by the TCPIPSSL Web User Interface server initialization parameter.

• **Port**
  Is the TCP/IP port number specified on the TCPIPPORT Web User Interface server initialization parameter.

• **Hostname**
  Is the TCP/IP host name specified on the TCPIPHOSTNAME Web User Interface server initialization parameter.

• **TCP/IP Service Name**
  Is the name of TCPIPSERVICE being used by the Web User Interface.

• **TCP/IP Service Status**
  Is the status of TCPIPSERVICE being used by the Web User Interface.

• **TCP/IP Address**
  Is the colon hexadecimal or dotted decimal IP address of the TCPIPSERVICE being used by the Web User Interface, if you are using the CICSPlex SM element of CICS Transaction Server.

• **TCP/IP Family**
  Is the address format of the IP address of the TCPIPSERVICE being used by the Web User Interface, if you are using the CICSPlex SM element of CICS Transaction Server.

If you press PF12 to return to the control panel, message EYUVS0906I is displayed, indicating that the operation is complete.

**Viewing user sessions**
To view information about user sessions, select the **User Sessions** option from the COVC control panel.

This opens the **User Sessions** panel, as shown in **Figure 14 on page 113**.

![User Sessions panel](image)

An explanation of some of the fields shown in **Figure 14 on page 113** follows:
Maximum No. of Users
This is the maximum number of concurrent users allowed and is the value specified for the MAXUSERS initialization parameter.

Inactive Timeout
This is the period after which inactive user sessions are terminated and is the value specified for the INACTIVETIMEOUT initialization parameter. When inactive timeout is reached the user session is terminated.

Userid
The user ID of the user signed on to the Web User Interface.

UserGrp
The user group to which the user belongs.

Inact
The period that the user session has been inactive.

TimeA
The period that the user has been logged on.

Win
The number of windows that this user session currently has opened. This number is incremented every time the user selects the New window or View Editor button in the navigation frame, or the New Editor or New Home window button in the View Editor.

Note: This number is not necessarily decremented when the user closes a window. Closed windows remain active until the resources are reclaimed.

D
The data interface used indicator.

ClientIP
The client web browser or proxy TCP/IP address. If the TCP/IP address an IPv6 address, the address extends over two lines, which reduces the number of users visible per page. IPv4 addresses are displayed on a single line.

Status
The purge status indicator.

If you press PF12 to return to the control panel, message EYUVS0906I is issued.

Ending a user session
You can end a user session from the User Sessions COVC panel by typing P for purge, or F for force purge, against the user ID, then pressing the enter key.

Message EYUVS0912I is issued indicating that the purge request was successful. A message is also written to the EYULOG when the user session is terminated.

Note: Ending a user using the force purge command causes an AEXY abend and might also result in some resources not being reclaimed.

Importing and exporting WUI definitions
You can use COVC to back up and restore WUI definitions from the WUI data repository.

By using the COVC import and export functions, you can make safe copies of your WUI panel structures, and subsequently:

• Distribute them to other WUI servers.
• Apply service changes as a result of program temporary fixes (PTFs).
• Migrate definitions to other releases.

For more information about upgrading a WUI server and the contents of the WUI server repository, see Upgrade a WUI and the contents of the WUI server repository (EYUWREP).
**Importing WUI definitions using COVC**

Use the COVC import function to import WUI data repository definitions from an external file. The file can be either an MVS sequential data set, or an MVS partitioned data set member.

If the definitions are contained within a sequential file, then that data set must be associated with a CICS extrapartition data set, and imported via the CICS Transient Data Queue name that the file is linked to. You must use the `Import from a TDQ` option of the Import command panel. If the definitions are contained within members of an MVS partitioned data set, then the data set and member identifiers can be specified directly on the `Import from a data set` panel that follows the Import command panel.

The view definition data comprises:

- View sets and menus
- WUI map objects
- User objects
- User group profiles

The IBM supplied set of WUI view and menu definitions are in the SEYUVIEW partitioned data set, and so you need to specify the `Import from a data set` function from the Import command panel. The advantage of using this import option is that individual member names can be specified on this panel, and so you can selectively restore individual elements of the backed up view set content.

View sets that are exported and imported with COVC import function have specific file definition requirements:

- **Sequential files must be defined as:**
  
  
  | Record format: VB | Logical record length: 32000 | Block size: 32004 |

- **Partitioned data sets must be defined as:**
  
  | Record format: VB | Logical record length: 32000 | Block size: 32760 |

Standard transient data queue definitions are provided for the COVE and COVI TD queues, and they associate to the EYUCOVE and EYUCOVI DD names for inclusion in your WUI server JCL. You can use these TDQUEUE definitions as models for further import/export extrapartition queues.

**To import definitions from a sequential file associated with an Extra-partition TDQ:**

1. Select the Import option from the control panel or use the `COVC IMPORT` command to open the Import panel.
2. Select `Import from a TDQ` on the Import panel to open the `Import a TDQ` panel. The following illustration shows the Import from a TDQ panel:
### Figure 15. Import from a TDQ panel

3. Type in the name of the extrapartition Transient Data queue where the definitions are currently held; for example, COVI.

4. Complete the other blank fields as follows:

**Type**
- **Type** in one of the following Types:
  - **MEnu**: To import only menus.
  - **Viewset**: To import only view sets.
  - **User**: To import only user objects.
  - **USERGrp**: To import only user group profiles.
  - **MAp**: To import only map objects.
  - **All**: To import all types of definitions.

**Note:** Importing any of the Types requires UPDATE access to the associated ESM profile:
- For **MEnus**: ESM profile EYUWUI.*.MENU.menuname
- For **MAPs**: ESM profile EYUWUI.*.MAP.mapname
- For **VIEW** sets: ESM profile EYUWUI.*.VIEW.viewsetname
- For **USERs** and **USERGRPs**: ESM profile EYUWUI.*.USER
- For **ALL**: All of the above profiles

**Import option**
- Enter the action that you want the server to take if a duplicate definition is found in the input data set. That is, whether existing definitions are to be preserved, overwritten, or deleted:
  - **Skip**: If you specify **Skip**, only the definitions that do not already exist in the input data set are imported.
  - **Overwrite**: If you specify **Overwrite**, definitions that already exist in the input data set are overwritten.
DELETE
Removes matching definitions of the selected type from the repository data set. For example, to selectively remove records from the repository, you can export the objects that you want to remove and then use the exported file with the import delete function to remove them.

Note: You can have a view set and menu with the same name.

5. Press Enter to start the operation.

To import definitions from a partitioned data set:

1. Select the Import option from the control panel or use the COVC IMPORT command to open the Import panel.

2. Select Import from a data set on the Import panel to open the Import from a data set panel. The following illustration shows the Import from a data set panel:

![Import from a data set panel](image)

Figure 16. Import from a data set panel

3. Type in the name of the data set member that contains the supplied view and menu definitions to import. You can use an asterisk at the end of the input string to specify a group of data set members; for example, EYUEA* imports all of the members whose name begins with the characters EYUEA, which are all the English language menus and view sets from the IBM supplied SEYUVIEW data set.

Note: You cannot leave the member name blank. If you do the panel dialog rejects your request. If your intention is to import from a sequential file, then that file must be associated with an extrapartition TD queue, and you must use the Import from a TD Queue subfunction to transfer the records into the WUI data repository.

4. Complete the other blank fields as follows:

**Type**
Type in one of the following Types:

**MEnu**
To import only menus.

**Viewset**
To import only view sets.

**USERGrp**
To import only user group profiles.
**MAP**
To import only map objects.

**All**
To import all types of definitions.

**Note:** Importing any of the Types requires UPDATE access to the associated ESM profile:
- For MENUs: ESM profile EYUWUI.*.MENU.menuname
- For MAPs: ESM profile EYUWUI.*.MAP.mapname
- For VIEW sets: ESM profile EYUWUI.*.VIEW.viewsetname
- For USERs and USERGRPs: ESM profile EYUWUI.*.USER
- For ALL: All of the above profiles

**Import option**
Enter the action that you want the server to take if a duplicate definition is found in the input data set. That is, whether existing definitions are to be preserved, overwritten, or deleted:

**Skip**
If you specify **Skip**, only the definitions that do not already exist in the input data set are imported.

**Overwrite**
If you specify **Overwrite**, definitions that already exist in the input data set are overwritten.

**DELETE**
Removes matching definitions of the selected type from the repository data set. For example, to selectively remove records from the repository, you can export the objects that you want to remove and then use the exported file with the import delete function to remove them.

**Note:** You can have a view set and menu with the same name.

5. Press **Enter** to start the operation.

**Import completion:**
Message EYUVS1016I is issued to mark the start of the import operation and EYUVS0916I is issued on the Import panel to indicate its successful completion.

If the import fails, complete view set and menu definitions that have already been read successfully remain in the repository but the failing definition and any that follow are not imported. Message EYUVS0917E is issued to indicate that the import has failed and a message is written to the EYULOG of the WUI server or the operator log.

You can import only those view sets and menus for which you have update access. Resources for which you do not have the necessary access are skipped and EYULOG message EYUVS1014W is issued. See Controlling access to Web User Interface resources for guidance on setting levels of access to view sets and menus.

If you press PF12 to return to the control panel, message EYUVS0906I is issued.

**Exporting WUI definitions**
Use the COVC export function to export WUI data repository definitions to an external file. The file can be used as a backup to the WUI from which it was extracted, and can also be distributed to other WUI regions for replicating your customized WUI environment around your CICSplice.

The file can be either an MVS sequential data set, or a member of an MVS partitioned data set (PDS).

If the export target is an MVS sequential data set, then it should have the definition attributes of:

```
Record format: VB
Logical record length: 32000
Block size: 32004
```

If the export target is a member of a PDS, then it should have the definition attributes of:
When the export operation is complete, then the target file is an offline backup for the records that are exported, and can be used in subsequent import operations in other WUI regions to migrate your WUI definitions around your CICSpex.

**Note:** Unlike the import operation (where you can select to import from a PDS member or from an extrapartition TD queue), export operations must be only executed against a TD queue name.

If you customize your WUI panel configuration, and want to flow that configuration to other WUI regions in your CICSpex (for the purposes of view consistency or WUI version migration), you must use the COVC transaction to export WUI definitions so that you can distribute definitions to other WUI servers or transfer definitions when you upgrade to a new release.

Sample definitions are supplied for the COVI and COVE extrapartition TD queues. If you want to export different elements of your WUI definitions to different data sets, then you must provide alternative TD queues (and related data sets) as the targets for each export operation. If you execute consecutive export requests to the same target TD queue, then each operation overwrites the contents of the previous one.

To export definitions from the WUI repository select the Export option from the control panel or use the command **COVC EXPORT**. This opens the COVC Export panel, as shown in Figure 17 on page 119.

<table>
<thead>
<tr>
<th>COVC</th>
<th>CICSpex SM Web User Interface Control</th>
<th>EYUVCTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Export</td>
<td>Name of extrapartition TDQ for export</td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>MENU</td>
<td>MEnu</td>
</tr>
<tr>
<td>Name</td>
<td>*</td>
<td>Specific or generic name of a definition to export</td>
</tr>
<tr>
<td>Lock option</td>
<td>NONE</td>
<td>None</td>
</tr>
<tr>
<td>Current Status</td>
<td>Ready</td>
<td>Time</td>
</tr>
<tr>
<td>Applid</td>
<td>CICSHW61</td>
<td>Date</td>
</tr>
</tbody>
</table>

Figure 17. Export panel

Complete the blank fields in the Export panel as follows:

- The Output TDQ Name is the name of the extrapartition transient data queue where the definitions are exported to, for example, COVE.
- Type in one of the following Types:
  - **MEnu** to export only menus
  - **Viewset** to export only view sets
  - **User** to export only user objects
  - **MAp** to export only map objects.
  - **USERGrp** to export only user group profiles.
All
to export all types of definitions.

**Note:** Exporting any of the Types requires READ or UPDATE access to the associated ESM profile:
- For MENUs: ESM profile EYUWUI.*.MENU.menuname
- For MAPs: ESM profile EYUWUI.*.MAP.mapname
- For VIEW sets: ESM profile EYUWUI.*.VIEW.viewsetname
- For USERs and USERGRPs: ESM profile EYUWUI.*.USER
- For ALL: All of the above profiles

- **Name** is the specific or generic name of the object that is to be exported. The convention for using generic names, when exporting, is:
  - An asterisk (*) represents any number of characters. It must be the last or only character in the string. For example:
    - EYU* means all definitions that have a name beginning with the characters EYU
    - * means all definitions
  - If the object being exported contains an asterisk (*) as part of its name, then it can be exported only generically. For example, if there are 3 objects *GROUP1, GROUP*2 and GROUP3, a Name value of * must be used to export *GROUP1 (and objects GROUP*2 and GROUP3 are also exported).
  - A Name value of GROUP* could be used to export object GROUP*2 (which also causes GROUP3 to be exported).

- **The Lock option** enables you to apply a lock to exported definitions. When locked definitions are subsequently imported into a repository, they cannot be modified or deleted by using the view editor. Locked definitions cannot be unlocked: they can be removed only by using the delete option on the Import panel:
  - **NONE**
    - Do not lock unlocked definitions. Existing locked definitions are exported as locked definitions.
  - **LOCK**
    - Lock all exported definitions.
    - **Note:** If you overwrite a set of unlocked definitions with a locked set, the only way to remove the locks is to re-import a set of unlocked definitions to overwrite the locked set. For this reason, you might want to keep a backup set of unlocked definitions before you replace them with a locked set.

When all the fields are complete, press Enter to export the view or menu definitions.

Message EYUVS0919I is issued on the Export panel, which indicates that the export was successful, and how many objects were written across. If the export fails, the data in the TDQ that you were writing to is incomplete so must be discarded. Message EYUVS0920E is issued indicating that it has failed and a message is written to the EYULOG of the Web User Interface server.

You can export only those definitions for which you have read or update access. Resources for which you do not have the necessary access are skipped and EYULOG message EYUVS1015W is issued. See Controlling access to Web User Interface resources for more information.

If you press PF12 to return to the control panel, message EYUVS0906I is issued.

**Setting trace flags**

To set trace flags dynamically, select the Trace Flags option from the control panel.

⚠️ **Attention:** It is recommended that you activate trace only at the request of IBM support center personnel.

You are presented with the Trace Flags panel, as shown in **Figure 18 on page 121**.
You can control the amount of trace information produced by setting any of the appropriate trace flags. Thirty one independent trace flags are provided and you can overtype any of the flags, with Y or N, and press enter to change the settings.

**Web User Interface server repository**

The Web User Interface (WUI) server repository contains all the recoverable resources maintained by the WUI server.

This includes:

- View and menu definitions
- Map object definitions
- User profiles
- User group profiles.

The WUI server repository consists of a variable length record, key sequenced VSAM file created before using the WUI. By default you have one repository, which is not shared, for each WUI server.

The DDname of the WUI server repository must be included in the start-up JCL for the WUI server.

Definitions from the data repository can be imported and exported so that you can back up or distribute definitions to other Web User Interface servers, apply service changes as a result of program temporary fixes (PTFs), or migrate definitions to other releases. Exporting is carried out using the COVC transaction. Importing is carried out either using COVC or by specifying auto-import initialization parameters when you start a WUI server.

**The IBM-supplied set of view set and menu definitions**

The supplied set of view set and menu definitions including default map objects is supplied in CICSTS54.CPSM.SEYUVIEW data set.

The data set comprises a number of members. Each member contains one of the following:

- A map object definition.
- A user object definition.
- A user group profile definition.
- A menu object.
- All of the view set definitions associated with one CICSPlex SM object.
There are separate members for each of the supplied languages of which there are currently three. The data set members are named EYULtccc, where:

- 1 specifies the language; currently E for English, S for simplified Chinese and K for Japanese.
- t identifies a set of views. The current supplied WUI views and menus are all identified by the letter A.
- ccc identifies the resource with which the views are associated.

The member names match the 3-letter language identifiers that you specified on the INITPARM CICS system initialization parameter. These are as follows:

<table>
<thead>
<tr>
<th>Language</th>
<th>Language identifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>US English</td>
<td>ENU</td>
</tr>
<tr>
<td>Japanese</td>
<td>JPN</td>
</tr>
<tr>
<td>Simplified Chinese</td>
<td>CHS</td>
</tr>
</tbody>
</table>

**Supported views' naming conventions**

The names of all supplied views begin with the characters EYUSTART.

The naming convention for the supplied set of view and menu definitions is as follows:

**Views**

EYUSTARTobjectname.viewtype, where objectname is the name of a resource, and viewtype can be one of the following:

- **TABULAR**
  A tabular view.
- **DETAILED**
  A detail view. In some cases, when there is more than one associated with a tabular view, detail views are named DETAIL1, DETAIL2, and so on.
- **Name of an action**
  A data input panel for an action such as Create, or a confirmation panel

**Menus**

EYUSTARTmenuname

where menuname is the name of a menu. For example, EYUSTARTMENU displays the supplied home menu and navigation frame.

**Map objects**

EYUSTARTMAPtype, where type is one of the following:

- BAS
- MON
- RTA
- WLM

**The output log (EYULOG)**

The Web User Interface uses the CICSPlex SM EYULOG of the Web User Interface server (and not of the CMAS) to record most of its operator messages. Other messages are written to the operator log.

An EYULOG message (either EYUVS1101I or EYUVS1102I) is issued each time a view set or menu is created, modified or deleted. Message EYUVS1016I is issued to record the start of an import, and includes the user ID and source transient data queue. This provides a useful audit trail to track Web User Interface update activity.
In addition, each view set and menu definition records details of the last change including the user ID and time. This information is preserved when view sets are exported or imported.

**Source of customizable help**

The customizable view and menu help is help that you can write if you want to provide additional help for your views and menus.

The customizable view and menu help can be served in two ways:

- By the Web User Interface server. If served by the Web User Interface the customizable view and menu help consists of a set of arbitrary HTML members stored as members in a partitioned data set. The CICS Web Interface template manager is used to serve members of this partitioned data set for delivery to the web browser.
- By an arbitrary external web server.

The DDname of the partitioned data set must have been specified in the start-up JCL for the Web User Interface server.

**Access from the Web User Interface to an external server**

The Web User Interface can access other web-based tools.

You can do this by:

- Linking to the customizable view and menu help served by an external web server
- A menu choice link to pages served by an external web server

See Customizing the Web User Interface for more information.

**Providing access to WUI views and menus**

The Web User Interface is accessed using standard Web browser software. Users can link to the WUI from any location that can launch a Web browser by supplying a valid URL.

Every time you access the Web User Interface, a new window is opened showing a new instance of the data. The different instances of the data are independent of each other. See Opening a new window for information about the maximum number of windows you can have open at any one time.

The URL must be correctly formatted for a HTTP or HTTPS request using escaping for reserved and unsafe characters with standard HTTP '%nn' notation, where nn is the hexadecimal representation of a character from the ISO–8859–1 code page. For example, '%7E' represents the tilda ('~') character. Except for the 'http' or 'https' prefix, the URL, in general, is not case sensitive unless the value of any query variables is case sensitive.

For information about the HTTP standard refer to RFC2068 - Hypertext Transfer Protocol - HTTP/1.1.

The URL is constructed as follows:

```
prefix:path?selection criteria
```

**Note:** The path and the selection criteria, which are specified as HTTP query variables, are separated by a question mark (?). If selection criteria are not present, the '?' should not be specified.

**Prefix**

The prefix depends on the configuration of your WUI server. It is either http, or https, if SSL is in use.

**Path**

There are several possible configurations for the WUI server path.

The path can be one of the following:

- `//hostname:port/CICSPlexSM`
  
  This takes you to the Welcome panel that contains a Begin Signon button.
- `//hostname:port/CICSPlexSM/code page`
This takes you to the Welcome panel that contains a Begin Signon button. The code page that you specify here overrides the code page specified on the INITPARM system initialization parameter in the start-up JCL of the Web User Interface server.

You can specify the default code page by leaving code page blank. For example:

```
//hostname:port/CICSPlexSM/
```

- `//hostname:port/CICSPlexSM/code page/userid`
  
  This takes you directly to your home menu (which is the menu specified on the DEFAULTMENU system initialization parameter), if you are already signed on in the current web browser session.

  If you are not signed on in the current web browser session, you are taken through the process described in Sign on with the WUI.

- `//hostname:port/CICSPlexSM/code page/userid/MENU/menuname`
  
  This takes you directly to the menu called menuname, if you are already signed on in the current web browser session.

  If you are not signed on in the current web browser session, you are taken through the signon process described in Sign on with the WUI, before the menu specified in the URL is displayed.

- `//hostname:port/CICSPlexSM/code page/userid/VIEW/viewsetname`
  
  This takes you directly to the default view within the view set called viewsetname, if you are already signed on in the current web browser session.

  If you are not signed on in the current web browser session, you are taken through the process described in Sign on with the WUI, before the default view within the viewset specified in the URL is displayed.

- `//hostname:port/CICSPlexSM/code page/userid/VIEW/viewsetname.viewname`
  
  This takes you directly to the view called viewname contained within the view set called viewsetname, if you are already signed on in the current web browser session.

  If you are not signed on in the current web browser session you will be taken through the signon process described in Sign on with the WUI, before the view specified in the URL is displayed.

- `//hostname:port/CICSPlexSM/code page/userid/OBJECT/objectname`
  
  This takes you directly to the default view set for object objectname, if you are already signed on in the current web browser session.

  If you are not signed on in the current web browser session, you are taken through the signon process described in Sign on with the WUI, before the default view for the object specified in the URL is displayed.

You can specify any object name for object, and the default view set is EYUSTARTobjectname, where objectname is the value of the URL. Note however that not all CICSPlex SM objects have starter set view sets.

You can change the default view set for a subset of CICSPlex SM objects using the following Web User Interface server system parameters:

<table>
<thead>
<tr>
<th>WUI server system parameter</th>
<th>Objectname</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEFAULTCICSPLEX</td>
<td>CICSPLEX</td>
</tr>
<tr>
<td>DEFAULTCICSRGN</td>
<td>CICSRGN</td>
</tr>
<tr>
<td>DEFAULTCONNECT</td>
<td>CONNECT</td>
</tr>
<tr>
<td>DEFAULTCSYSGRP</td>
<td>CSYSGRP</td>
</tr>
<tr>
<td>DEFAULTDB2SS</td>
<td>DB2SS</td>
</tr>
<tr>
<td>DEFAULTEJCOBEAN</td>
<td>EJCOBEAN</td>
</tr>
<tr>
<td>WUI server system parameter</td>
<td>Objectname</td>
</tr>
<tr>
<td>----------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>DEFAULTEJDBEAN</td>
<td>EJDBEAN</td>
</tr>
<tr>
<td>DEFAULTEVENT</td>
<td>EVENT</td>
</tr>
<tr>
<td>DEFAULTLOCFILE</td>
<td>LOCFILE</td>
</tr>
<tr>
<td>DEFAULTLOCTRAN</td>
<td>LOCTRAN</td>
</tr>
<tr>
<td>DEFAULTPROGRAM</td>
<td>PROGRAM</td>
</tr>
<tr>
<td>DEFAULTREMFILE</td>
<td>REMFILE</td>
</tr>
<tr>
<td>DEFAULTREMTRAN</td>
<td>REMTRAN</td>
</tr>
<tr>
<td>DEFAULTTASK</td>
<td>TASK</td>
</tr>
</tbody>
</table>

**Note:**

1. The *hostname* and *port* represent the IP address of the CICS Web Interface listener or the secure server, and are specified on the TCPIPHOSTNAME and TCPIPPORT Web User Interface server initialization parameters, respectively.

2. You need to specify *code page* only if you want to override the code page specified on the INITPARM system initialization parameter.

**Selection criteria**

In URLs, the selection criteria are specified as HTTP query variables.

Each query variable is specified as a variable name followed by ‘=’ then a value. The variable names and values must be escaped using the HTTP standard notation, where necessary. Multiple query variables should be separated by an ampersand (&) character.

The Web User Interface supports query variables as follows:

- Query variables that can be used for menus and views
- Query variables that can be used for views only

**Query variables that can be used for menus and views**

You can use certain query variables for both menus and views.

These are:

- **CONTEXT**
  - This is the CICSpex name.
- **CMASCONTEXT**
  - This is the CMAS name.
- **SCOPE**
  - This is the CICSpex, CICS group, MAS or logical scope name.

**Query variables that can be used for views only**

Some query variables can be used for views only.

These additional query variables are as follows:

- **A_attrname**, where attrname is the name of an attribute.
  - This is an attribute filter. You can specify any number of attributes on a URL. You can specify characters, numbers, CVDA or EYUDA values. The default operator for an attribute filter is equality (=). If you want to use a different operator you can specify the operator value on the O_attrname query variable. See Table 8 on page 126 for a list of operators and their values.
- **FILTERC**, when set to 1, the request will force filter confirmation processing when the view is displayed.
If FILTERC is not present, or is not set to 1, filter confirmation might still occur depending on the GLOBALPREFILTER Web User Interface system parameter or the user group option Force filter confirmation.

- P_parmname, where parmname is the name of a parameter.
  This is a parameter filter, as used for a CICSPlex SM API GET command.
- O_attrname, where attrname is the name of an attribute.
  This is specified with the A_attrname query variable to change the equality (=) default operator. For a list of operator values that you can specify on the O_attrname query variable see Table 8 on page 126.

  **Note:** When using generic values only the equal to (=) and not equal to (<>) operators are valid.

<table>
<thead>
<tr>
<th>Operator value (mnemonic)</th>
<th>Operator value (numeric)</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>EQ</td>
<td>1</td>
<td>Equal to</td>
</tr>
<tr>
<td>NE</td>
<td>2</td>
<td>Not equal to</td>
</tr>
<tr>
<td>GT</td>
<td>3</td>
<td>Greater than</td>
</tr>
<tr>
<td>LT</td>
<td>4</td>
<td>Less than</td>
</tr>
<tr>
<td>GE</td>
<td>5</td>
<td>Greater than or equal to</td>
</tr>
<tr>
<td>LE</td>
<td>6</td>
<td>Less than or equal to</td>
</tr>
</tbody>
</table>

**Specifying WUI object names**

If you do not specify a view set name but specify an object name, the view set named on the Web User Interface server initialization operation options parameter, that represents the specified object, is opened.

If a view set has not been named to represent the specified object, the default view set, EYUSTARTobjectname is opened.

**Examples of valid URL formats**

The following examples show valid URL formats.

   
   This is a request for a user to be directly presented with a home menu called OURHOME using context FRED and scope FRED.

   
   This is a request for a user to be directly presented with the default view, in view set OURLOCTRAN, displaying all the local transactions with a TRANID beginning with the characters PAY, using context FRED and scope FRED.

   
   This is a request for a user to be directly presented with the TABLE1 view, in view set OURWLMAWAOR, displaying active workload information about workload WLPAY01, using the default context as specified in the DEFAULTCONTEXT Web User Interface server initialization parameter.


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This is a request for a user to be directly presented with the default view, in view set OURLOCTRAN, displaying all the local transactions with a TRANID that does not begin with the character P.


This is a request for a user to be directly presented with the default view, in view set OURTASK, displaying all the tasks with a PRIORITY greater than 200.


?FILTERC=1

This is a request for a user to be presented with the filter confirmation screen of the EYUSTARTPROGRAM TABULAR view.

### Setting CMAS and MAS trace flags

You can use the WUI to set CMAS and MAS trace flags.

You use the **CMAS detail** (EYUSTARTCMAS.TRACE) view to set CMAS trace flags and the **MASs known to CICSpex** (EYUSTARTMAS.TRACE) view to set MAS trace flags.

### Configuring dynamic routing

You can define a transaction to CICS as either local or remote. Local transactions always run in the requesting region; remote transactions can be routed to any CICS system connected to the routing region. Routing of remote transactions can be dynamic, static, or ATI-controlled.

### Dynamic routing with CICSpex SM

Use CICSpex SM to select the most appropriate target region for the execution of a dynamic transaction by using the workload management facility.

When a remote transaction is initiated, the CICS relay program is invoked. The CICS relay program links to the dynamic routing program EYU9XLOP. EYU9XLOP creates the environment necessary for CICSpex SM-based dynamic routing and sets up the CICSpex SM runtime environment. You must specify EYU9XLOP in the system initialization table (SIT) parameter.

- For static routing, ATI, and dynamic routing, set the DTRPGM SIT parameter that is associated with the requesting region that initiates the transaction:

  ```
  DTRPGM=EYU9XLOP
  ```

  Any target region that is also to act as a routing region must also specify DTRPGM in the SIT and must be set up as a routing region as described in **Associating a CICS system or system group with a workload specification**.

- For non-terminal-related **EXEC CICS START** commands, BTS activities, or enterprise beans, specify the system initialization parameter `DSRTPGM=EYU9XLOP` in the requesting region that initiates the request. Also set `DSRTPGM=EYU9XLOP` in all potential target regions if the DYROPTER field in the communications area or container for the routing program (mapped by the DFHDYPDS copybook) is to be set to Y.

  If you use CICSpex SM to route non-terminal-related **EXEC CICS START** commands, the DYROPTER field is always set to Y. You must therefore always specify the system initialization parameter `DSRTPGM=EYU9XLOP` and ensure that the target region is part of the workload. Failing to ensure that the target region is defined to the workload results in the started transaction waiting for the workload to become available and the transaction hangs.

**Note:** If the target region is not going to be set up as a routing region, then do not specify EYU9XLOP in the DTRPGM and DSRTPGM SIT parameters. Specifying this parameter causes an endless loop for routed transactions in EYU9XLOP waiting for the workload, which never arrives.
CICS notifies EYU9XLOP of all routing requests. These requests are as follows:

- Route selection, route selection error, and transaction termination.
- For BTS (all supported releases of CICS), transaction initiation, transaction abend, and routing attempt complete.
- For non-terminal EXEC CICS START requests (all supported releases of CICS), transaction initiation, transaction abend, and routing attempt complete.

When CICS links to EYU9XLOP, it passes the CICS communication area DFHDYPDS to it.

Control then passes to the CICSPlex SM workload management facilities. CICSPlex SM initializes the workload management MAS agent code and engages its routing action process. This process is called internally if any of the following conditions are true:

- The EYU9WRAM user-replaceable module is not defined to CICS
- EYU9WRAM is defined to CICS, but is not available
- EYU9WRAM is defined to CICS, is available, and the load module is the assembly language version of the module as distributed with CICSPlex SM.

The internal routing action process produces the same results as running the assembly language version of EYU9WRAM as it is distributed with CICSPlex SM. If no additional dynamic routing control is required at your enterprise, the internal process provides better performance.

The EYU9WRAM module, or its equivalent internal process, receives the CICSPlex SM-based communication area EYURWCOM. An entry for EYU9WRAM is added to the CICS system definition file, DFHCSD, for each CICS system during installation. As distributed with CICSPlex SM, EYU9WRAM drives CICSPlex SM workload management processing. EYU9WRAM does this by first obtaining the appropriate list of target region candidates, based on the transaction group, and the terminal ID, LU-name, user ID, or process type. Then, EYU9WRAM selects a target region from the list of candidates.

**CICS release requirements for dynamic routing**

Here are CICS release requirements for regions involved in dynamic routing.

<table>
<thead>
<tr>
<th>Release requirement for:</th>
<th>Routing regions</th>
<th>Target regions</th>
<th>Requesting regions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dynamic transaction routing</td>
<td>Any supported release of CICS</td>
<td>Any supported release of CICS</td>
<td>-</td>
</tr>
<tr>
<td>EXEC CICS START commands</td>
<td>Any supported release of CICS</td>
<td>Any supported release of CICS</td>
<td>Any supported release of CICS</td>
</tr>
<tr>
<td>CICS Business Transaction Services (BTS)</td>
<td>Any supported release of CICS</td>
<td>Any supported release of CICS</td>
<td>Any supported release of CICS</td>
</tr>
<tr>
<td>Distributed program link (DPL)</td>
<td>Any supported release of CICS</td>
<td>Any supported release of CICS</td>
<td>-</td>
</tr>
<tr>
<td>Enterprise beans</td>
<td>CICS Transaction Server for z/OS, Version 4 Release 2 or earlier</td>
<td>CICS Transaction Server for z/OS, Version 4 Release 2 or earlier</td>
<td>-</td>
</tr>
<tr>
<td>Link3270 bridge</td>
<td>Any supported release of CICS</td>
<td>Any supported release of CICS</td>
<td>-</td>
</tr>
</tbody>
</table>

**Sample source programs and copy books**

Following installation, the module EYU9WRAM is loaded into CICSPlex SM.

It is an assembler-language, command-level program; its corresponding copy books are:
EYURWCOM
Defines the communication area

EYURWCOD
Defines literals for EYURWCOM

EYURWSVE
Defines each element of a target region scope list

EYURWSVD
Defines literals for EYURWSVE

To assist you in your customization effort, sample source programs and copy books for assembler, C, COBOL, and PL/I are distributed with CICSPlex SM. Copy books are located in language-specific libraries. All samples programs are located in the SEYUSAMP library. The names of the sample programs and copy books, and the CICSPlex SM libraries in which they can be found are listed in Table 10 on page 129.

Table 10. Sample programs and copy books

<table>
<thead>
<tr>
<th>Language</th>
<th>Member name</th>
<th>Alias</th>
<th>Library</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assembler:</td>
<td>EYUAWRAM</td>
<td>EYU9WRAM</td>
<td>SEYUSAMP</td>
</tr>
<tr>
<td>Program</td>
<td>EYUAWCOM</td>
<td>EYURWCOM</td>
<td>SEYUMAC</td>
</tr>
<tr>
<td>Copybook 1</td>
<td>EYUAWCOD</td>
<td>EYURWCOD</td>
<td>SEYUMAC</td>
</tr>
<tr>
<td>Copybook 2</td>
<td>EYUAWSVE</td>
<td>EYURWSVE</td>
<td>SEYUMAC</td>
</tr>
<tr>
<td>Copybook 3</td>
<td>EYUAWSVD</td>
<td>EYURWSVD</td>
<td>SEYUMAC</td>
</tr>
</tbody>
</table>

COBOL:

| Program  | EYULWRAM  | EYU9WRAM | SEYUSAMP    |
| Copybook 1 | EYULWCOM | EYURWCOM | SEYUCOB     |
| Copybook 2 | EYULWCOD | EYURWCOD | SEYUCOB     |
| Copybook 3 | EYULWSVE | EYURWSVE | SEYUCOB     |
| Copybook 4 | EYULWSVD | EYURWSVD | SEYUCOB     |

PL/I:

| Program  | EYPWRAM   | EYU9WRAM | SEYUSAMP    |
| Copybook 1 | EYPWCOM  | EYURWCOM | SEYUP1      |
| Copybook 2 | EYPWCODE | EYURWCOD | SEYUP1      |
| Copybook 3 | EYPWSVE  | EYURWSVE | SEYUP1      |
| Copybook 4 | EYPWSVD  | EYURWSVD | SEYUP1      |

C:

| Program  | EYCWRAM   | EYU9WRAM | SEYUSAMP    |
| Copybook 1 | EYCWCOM  | EYURWCOM | SEYUC370    |
| Copybook 2 | EYCWCOD  | EYURWCOD | SEYUC370    |
| Copybook 3 | EYCWSVE  | EYURWSVE | SEYUC370    |
| Copybook 4 | EYCWSVD  | EYURWSVD | SEYUC370    |
Optimized dynamic workload routing implementation
CICSPlex SM provides dynamic workload management for CICS. CICSPlex SM can augment its workload management decisions using current status information posted directly from CICS by using a region status (RS) server.

To optimize workload routing in a sysplex, you must configure and monitor a region status (RS) server, as part of a coupling facility data table. Full workload optimization takes place automatically when all workload regions are migrated to CICS TS for z/OS, Version 4.1 and later, and when a region status (RS) server is started in the same z/OS image as each region in the workload in the CICSp Plex.

For further details, see Setting up and running a region status server and Security for coupling facility data tables.

You can mix CICS TS for z/OS, Version 4.1 and later regions in a workload with regions using a previous version of CICS TS. However, workloads will run in a non-optimized state because full workload optimization is achieved only when all regions in the workload are migrated to CICS TS for z/OS, Version 4.1 or later.

You define and modify CICSp lexes using the EYUSTARTCPLEXDEF view set. Using the CPLEXDEF detail view, you can modify the coupling facility (CF) tuning parameters for the region status (RS) server, which provide sysplex optimized workload routing.

Sysplex optimized workload routing overview
In CICS TS for z/OS, Version 4.1 and later, workload throughput is improved through a more efficient workload management optimization function. This function is most effective for distributed workloads, for which the routing and target regions are managed by different CMASs. With new CICSp lex SM WUI views, you can monitor the distribution of dynamic workloads through your CICSp lex.

Sysplex optimized workload routing is enabled at the z/OS coupling facility level by a region status (RS) server.

When a target region is running in optimized mode, the target region maintains the task count using the CICS transaction manager. The count includes all tasks in the CICS region, not just those that are dynamically routed. The load value for the CICS region, with its basic health status, is periodically broadcast to the coupling facility, where it is available for interrogation by other CICS regions and CMASs and by other CICS address spaces. If region status data is available, CICSPlex SM uses the data when it makes its dynamic routing decision.

For sysplex optimized workloads, routing regions review the same status data in the coupling facility for a potential target region regardless of which CMAS manages it. As a result, the routing region is using status data that might be updated many times a second to evaluate a target region, rather than status data that might be up to 15 seconds old. The refresh interval can vary from 2 seconds down to 1 millisecond. As the scale of this value is reduced, the usage effect on the coupling facility increases. Choose a value that provides a balance between workload throughput and the effect on the coupling facility. The default refresh value is 200 milliseconds. In an environment in which all routing targets are in a similar health and connectivity state, the spread of work across the workload target scope is more evenly balanced than in nonoptimized mode.

If the coupling facility is not available, workload routing is managed by CICSPlex SM Workload Manager using z/OS data spaces owned by a CMAS to share cross-region load and status data.

Benefits of sysplex optimized workload routing
A sysplex optimized workload is a workload that is best suited to workloads contained in a single sysplex. For a workload that runs in a CICSp lex that spans more than one sysplex, the benefits of optimized routing are reduced because region status data stored in the z/OS coupling facility is not shared across sysplexes.

Sysplex optimized workload routing is beneficial in the following scenarios:

• When a workload consists of routers and targets managed by different CMASs and the bulk of the dynamic traffic flows through the DSRTPGM exit. For example, if you use MQ triggers to feed transactional data into CICSp lexes, where the trigger regions tend to be managed by different CMASs to
the processing regions. In these instances, the benefit of running workloads in optimized state is that no workload batching occurs, and the overall workload runs through faster. Fewer, if any, routed transactions are waiting in the queue of a CICS region already at its MAXTASKS limit.

- When the topology of a CICSplex is such that regions in a workload can be managed by the same CMAS, and nondynamic throughput is a high proportion of the workload.

**Impact of sysplex optimized workload routing on the coupling facility**

Caching mechanisms are built into the coupling facility (CF) to reduce the number of I/O operations. CICS region status data is broadcast to the CF by target regions, and the data is subsequently read back by the routing regions when a route decision is being made. If CICS status data is broadcast at every change instance, and read back on every occasion that a route decision is made, the impact to the coupling facility might be considerable.

To reduce the impact to the coupling facility, CICS provides two system management parameters:

- **READRS** controls how long region status data is cached by a routing region before requesting a refresh.
- **UPDATERS** controls how often the CF is updated with task throughput data.

**Region status server, read interval parameter (READRS)**

You use the region status server read interval parameter in the CPLEXDEF, CSYSDEF, and MAS views to control how long region status data is cached by a routing region before requesting a refresh for sysplex optimized workload routing.

READRS={200|number}

In a workload running in optimized mode, the READRS value specifies the minimum interval, in milliseconds, between refreshes of a target region status from a CICS region status (RS) server. These refresh requests are issued by a routing region that is evaluating a target region for a dynamic routing request.

**Note:** You should only change the READRS value after considering the impact that the change might have on your workload and coupling facility throughput.

The value range is from 0 - 2000:

- A value of 0 means that a routing region requests a status update of a target region on every occasion that it examines the status of the target region.
- Values from 1 - 2000 specify the minimum time interval that must expire before the status of a target region can be refreshed.

A low interval value means that the RS server is polled more often for a status update. For workloads in QUEUE mode, this low value results in a smoother task load spread across the CICS regions in the workload target scope, assuming all other health and link factors are equal. However, the utilization of the RS server is correspondingly increased, which might result in higher utilization of your z/OS coupling facility.

The default value of the READRS parameter is 200 milliseconds.

The value specified in the EYUSTARTCPLEXDEF view set sets the read interval at the CICSplex level. However, you can override the interval at the CICS definition level to allow fine tuning of the value on an individual CICS target region basis.

You specify both the UPDATERS and the READRS parameters at the CICSplex definition (CplexDEF) level to establish default values for all regions in the CICSplex. You can override these values at the CICS system definition (CSYSDEF) level or at the MAS agent runtime (MAS) level.

At the CICS definition level, the value for UPDATERS and READRS is INHERIT, so that the values are adopted from the CICS system definition. By changing these values to explicit numeric values, the CICS system adopts the values specified on each successive restart. To implement a change to a running CICS region, the values must be applied using the MAS base tables or view sets. When the target region is restarted, it reemploys the specification from its CSYSDEF.
Region status server, update frequency parameter (UPDATERS)

You use the region status server update frequency parameter in the CPLEXDEF, CSYSDEF, and MAS views to control how often the coupling facility is updated with task throughput data for sysplex optimized workload routing.

**UPDATERS={15|number}**

In a workload running in optimized mode, the **UPDATERS** value indicates the frequency that the CICS region status (RS) server is called to modify the value of the task load in a target CICS region. This value is the default frequency value for all target CICS regions in the current CICSpex definition.

**Note:** You should only change the **UPDATERS** value after considering the impact that the change might have on your workload and coupling facility throughput.

The value range is from 0 - 25:

- A value of 0 means that the RS server is not notified of any task load count changes, because the optimized workload function for target regions in this CICSpex is not enabled.
  
  **Note:** A value of 0 does not suppress optimization of the workload routing function; a value of 0 suppresses only the target region RS domain broadcasting process.

- Values from 1 - 25 are applied as an arithmetic percentage to the MAXTASKS setting for a target. The resulting task count value is used as a numeric threshold to drive an update call to the RS server.

Specifying a value of zero effectively disables the optimized routing function for the target regions. For an optimized routing decision to be made, both the router and target must be in optimized mode.

For example, with a MAXTASKS setting of 120, and the **UPDATERS** set to 20, the RS server is called to update the WLM load count when the task count for a target region changes between these numbers of tasks:

- 23 and 24 tasks (20% of 120)
- 47 and 48 tasks (40% of 120)
- 71 and 72 tasks (60% of 120)
- 95 and 96 tasks (80% of 120)
- 119 and 120 tasks (100% of 120)

The RS server is updated when the task load for a target region increments or decrements across these boundaries.

If you set the **UPDATERS** parameter to a low value, the frequency of updates to the RS server increases across the task load range. For workloads in QUEUE mode, this low value results in a smoother task load spread across the target CICS regions in the workload scope, assuming all other health and link factors are equal. However, the utilization of the RS server is correspondingly increased, which might result in higher utilization of your z/OS coupling facility.

The default value for the **UPDATERS** parameter is 15.

The value specified in the EYUSTARTCplexDEF view set sets the update interval at the CICSpex level. However, you can override the interval at the CICS definition level to allow fine tuning of the value on an individual CICS target region basis.

You specify both the **UPDATERS** and the **READRS** parameters at the CICSpex definition (CPLEXDEF) level to establish default values for all target regions in the CICSpex. You can override these values at the CICS system definition (CSYSDEF) level or at the MAS agent runtime (MAS) level.

At the CICS definition level, the value for **UPDATERS** and **READRS** is INHERIT, so that the values are adopted from the CICS system definition. By changing these values to explicit numeric values, the CICS system adopts the values specified on each successive restart. To implement a change to a running CICS region, the values must be applied using the MAS base tables or view sets. When the target region is restarted, it uses the specification from its CSYSDEF.
**Region status server, bottom-tier parameter (BOTRSUPD)**
You use the region status server bottom-tier tuning parameter in the CPLEXDEF, CSYSDEF, and MAS views to control the workload distribution updates to the coupling facility (CF) during periods of low throughput.

**BOTRSUPD={1|number}**
For sysplex optimized workloads, the BOTRSUPD value is converted from a task load percentage to a real task count. That count is used to define the bottom-tier task load range, from zero up to this value.

**Note:** You should only change the BOTRSUPD value after considering the impact that the change might have on your workload and coupling facility throughput.

The value range is from 1 - 25. When the task load for a region falls within this range, the task load is then broadcast to the coupling facility (CF) for every change in the task load. When the load reaches this value, the RS server update frequency task rules are activated.

The default value of the BOTRSUPD parameter is 1%.
Change this value only after considering the impact that the change might have on your workload and coupling facility throughput. When your CICSplex consists of many target regions and you increase this value too much, you risk overloading the CF with update requests, which can result in degraded WLM and general z/OS subsystem performance.

When you need to modify the BOTRSUPD value, ensure that you monitor the performance of your coupling facility and WLM throughput capabilities for at least several days after modification.

**Region status server, top-tier parameter (TOPRSUPD)**
You use the region status server top-tier tuning parameter in the CPLEXDEF, CSYSDEF, and MAS views. It controls the workload when the workload management (WLM) max task health indicator is switched off for a target region, to limit updates to the coupling facility (CF) when the region is close to the MAXTASK (MXT) setting during periods of high throughput.

**TOPRSUPD={5|number}**
For sysplex optimized workloads, the TOPRSUPD value is converted from a task load percentage to a real task count. That count is subtracted from the MAXTASKS value for the region to determine the top-tier task load range.

**Note:** You should only change the TOPRSUPD value after considering the impact that the change might have on your workload and coupling facility throughput.

The value range is from 1 - 25. The value is applied as an arithmetic percentage to the MAXTASKS setting for a region. The task count value is then subtracted from the MAXTASKS setting for the region to establish a task load top tier. When the task load in a region runs up to its MAXTASKS limit, the task load must then drop back below this value before the MAXTASKS state for the region is switched off and broadcast to the coupling facility.

The default value of the TOPRSUPD parameter is 5%.
Change the TOPRSUPD value only after considering the impact that the change might have on your workload and coupling facility throughput. When you increase this value too much, you see a workload batching effect in the upper load range of the workload. When you decrease the value too much, the upper-tier batching effect is reduced, but updates to the coupling facility can be significantly increased.

When you need to modify the TOPRSUPD value, ensure that you monitor the performance of your coupling facility and WLM throughput capabilities for at least several days after modification.
**Optimization status**
You can use the Active workloads list view in the CICSPlex SM Web User Interface (WUI) to view the status of workloads.

**Optimization status of the workload**
You can use the Active workloads list view in the CICSPlex SM Web User Interface (WUI) to view the status of each workload active in the CICSPlex.

The **Optimization status** attribute reports the sysplex optimization status of the current workload. The value is a combination of all of the workload router optimization statuses and all of the workload target optimization statuses.

These values are possible:
- **ACTIVE**: All targets and routers in the workload are running in optimized workload state.
- **PARTIAL**: At least one target and one router are running in optimized workload mode. Use the Active routing regions and Active target regions hyperlinks to determine which regions are not running in optimized state.
- **INACTIVE**: The workload is not running in an optimized state, for one or more of the following reasons:
  - No routing regions in the workload are running in an optimized state.
  - No target regions in the workload are running in an optimized state.
  - No regions in the workload are running in an optimized state.
  - The workload is designated as being nonoptimized by specifying a value of 0 for the RS server update frequency on the CICSPlex definition or on all target CICS system definitions for this workload.

**Optimization status for a CICS region**
You can use the Routing regions or Target regions views located in the Active workloads menu to view the optimization status for the region.

The **Optimization status** attribute reports the status of the current target region for the optimized workload routing function.

These values are possible:
- **ACTIVE**: This target region is running in an optimized workload state.
- **INACTIVE**: This region can run in an optimized workload state; however, it is not currently optimized for one or more of the following reasons:
  - The region has no connection to an RS server.
  - The region is connected to an RS server; however, the server cannot connect to the z/OS coupling facility.
  - The optimization enablement setting for the region is set to Disabled. The enablement setting for the region must be set to Enabled before any optimized routing functions can be activated.

  **Note**: You can reset the optimization enablement setting in the CICS system definition view to change the value in preparation for the next region startup. The enablement setting can also be changed in an active region using the MAS view, but will revert to the setting in the CICS system definition when the region is restarted.
  - The RS server update frequency value for this region is 0, which means that the optimization capabilities for this region when acting as a routing target are not enabled.

  **Note**: You can set the `UPDATER` value to 0 for regions that are used as dynamic routers only. Setting this value to 0 prevents the region from making unnecessary region status broadcasts to the Region Status (RS) server.

- **N_A**: The target region is not at a CICS release that supports region status recording. Only nonoptimized WLM routing decisions can be made.
**Nonoptimized workload routing**

In releases before CICS TS for z/OS, Version 4.1, for nonoptimized workload management, and when a coupling facility is not available, workload routing is managed by CICSPlex SM Workload Manager using a data space owned by a CMAS to share cross-region load and status data.

Every CMAS manages a single WLM data space that it shares with every user CICS region (MAS) that it directly manages. When the CMAS initializes, it verifies and formats the data space with the structures necessary for all workloads associated with the CICS regions that it manages. When the user CICS regions begin routing dynamic traffic, the state of those CICS regions is recorded in this data space. Every 15 seconds, the CICSPlex SM agent in the user CICS region determines the task count at that time and reports to its owning CMAS. The CMAS updates the load count in the target region descriptor of its WLM data space and broadcasts that value to other CMASs participating in workloads associated with the user CICS region.

In an environment in which all user CICS regions are managed by the same CMAS, all routing and target regions refer to the same physical structures in the WLM data space. Dynamic routing decisions are based on the most current load data for a potential routing target region. A routing decision is based on a combination of factors. For details, see Factors that contribute to dynamic workload routing decisions.

Workloads are spread across multiple z/OS images, so additional CMASs are configured to manage the user CICS regions on the disparate LPARs. Each WLM data space must maintain a complete set of structures to describe every CICS region in the workload, not just the CICS regions for which each CMAS is responsible. The WLM data space owned by each CMAS must be periodically synchronized with the WLM data spaces owned by other CMASs that are participating in the workload. This synchronization occurs every 15 seconds from the MASs to their CMASs, and then out to all other CMASs in the workload.

The behavior of CICSPlex SM is different for DTRPGM and DSRTPGM requests:

- For DTRPGM requests, the routing region calls, from CICS, to decide if the target regions are synchronized with the execution of the request at the selected target, which is then followed by a call back from CICS on completion of the dynamic request. This call allows the router to increment the task load count before informing CICS of the target region system ID, and also to decrement the count on completion of the request.

- For DSRTPGM requests, the routing region calls, from CICS, to decide if targets are not synchronized with the selected target. Typically, these dynamic requests are asynchronous CICS starts. The router has no notification of when the routed transaction starts or finishes. Because of a lack of notification, CICSPlex SM stipulates that a DSRTPGM target region must also have the workload associated with the region, which transforms the targets into logical routing regions. This call allows the CICSPlex SM routing processes to determine that they are being called at the DSRTPGM target and, therefore, allows the task load count to be adjusted at transaction start and finish.

CICSPlex SM routing regions count the dynamic transaction throughput in a CICSplex, introducing an additional problem in that transactions started locally on the target regions remain unaccountable by the routing regions until a heartbeat occurs. The router transaction counts are not accurately synchronized until two heartbeats have occurred, the first to increment the count, and the second to decrement it again. This discrepancy, however, is not considered as severe as when a router and target are managed by different CMASs.

For multiple CMASs, the router regions evaluate status data for a target region as described in its local WLM data space. If that target region is managed by a different CMAS to that owned by the router, status data describing that target region can be up to 15 seconds old. For DTRPGM requests, this latency does not have a severe effect. For DSRTPGM requests, however, the effect can be significant, particularly when the workload throughput increases. The effect is known as workload batching.

For more information, see “Workload batching” on page 136.
Workload batching
Workload batching occurs in heavily used workloads in multiple CMAS environments, where dynamic distributed (DSRTPGM) routing requests are being processed.

A target region and its routing regions can be managed by different CMASes. This is always the case when the router runs in a different LPAR to the targets. In this scenario, the router is using a different descriptor structure to evaluate the target status from the real descriptor structure employed by the target itself.

The target descriptor reviewed by the router is synchronized with the real descriptor at 15-second intervals by the CICSPlex SM heartbeat. The task count for the target region, as seen by the router, is refreshed at the same time. During a 15-second heartbeat interval, the router regards the target as being relatively busy, or relatively quiet, when compared to other potential target regions in the workload.

Therefore, for that 15-second duration, the router continues to divert work towards, or away from, the target, depending on how busy it seems to be, because the current task count in the target is not seen to change until the next heartbeat. This routing, based on the previous status, can make the target very busy or unused. The router reacts to this situation by more actively routing work towards, or away from, the target, so the batching cycle continues. This state continues until activity in the workload throughput declines, which settles down the batching cycle until the throughput activity increases.

If you are monitoring the task load across the CICSpex, you see some regions running at their MAXTASKS limit and being continually given dynamically routed traffic, and others remain unused. A snapshot taken 15 seconds later might show a reversal of utilization; the busy regions might be idle and the idle regions might now be at the MAXTASKS limit.

When you start your region status servers and optimize workloads, the effects of workload batching are removed.

Modifying dynamic routing
You can customize CICSPlex SM workload management processing by modifying the module EYU9WRAM.

EYU9WRAM uses the CICSPlex SM dynamic routing application programming interface (API), which is a special-purpose, call-level interface that provides the mechanism needed to request workload management actions. All calls are constructed using standard CALL statements. The CALL statement generates the linkage between the EYU9WRAM module and the CICSPlex SM Workload Manager component. The format of the CALL statement is shown here:

```call
CALL WAPIENPT(DA_TOKEN,function)
```

where:

**DA_TOKEN**
Identifies the dynamic routing API token supplied via the EYURWCOM communication area. This token is used by EYU9WAPI and must not be altered.

**function**
Is the function to be performed, specified as:

**SM_SCOPE**
Returns a list of eligible target regions.

**SM_BALANCE**
Selects a target region from the list of eligible target regions.

**SM_ROUTE**
Routes a transaction to a specific target region.

**SM_CREAFF**
Creates an affinity.

**SM_DELAFF**
Deletes an active affinity.

You can use SM_SCOPE and SM_BALANCE together to obtain a list of target regions and then select the target region to which a transaction is to be routed.
If you know that a transaction is always to be directed to a specific target region, you can use just SM_ROUTE.

As distributed, EYU9WRAM issues SM_SCOPE and SM_BALANCE calls. It does not include any SM_ROUTE calls. It includes unexecuted calls to SM_CREAFF and SM_DELAFF. You can modify the program to issue these calls.

Although all the examples use the assembler language form of the dynamic routing API verbs, you can also use these verbs in programs written in C, COBOL, and PL/I. Sample programs distributed with CICSPlex SM contain examples of the CALL statements for each of these languages.

**Note:** If you are modifying dynamic routing, be aware that:

- If they are not set, the values for application context are either zero (for the version) or nulls/low-values (for platform, application, and operation).
- String fields are padded with nulls, not spaces.

**Important:** As distributed, EYU9WRAM handles the workload routing and separation established via the workload management definitions by using the API verbs. Any changes you make to EYU9WRAM, therefore, might adversely impact the CICSPlex SM workload management facilities. For example, if you do not use SM_SCOPE, SM_BALANCE, or SM_ROUTE, each transaction occurrence is routed to the default target region identified when the transaction was defined to CICS. Thus, all CICSPlex SM workload management definitions are bypassed.

**Nondynamic transaction considerations**

You do not have to include any calls through the API if a transaction is statically routed or is started by ATI. In these cases, the target region cannot be changed. The routing function is route notify. The route notify function is intended to notify the EYU9WRAM program that such a transaction is being routed.

If you do include any of these functions, the following occurs:

- An SM_SCOPE call returns a single entry in the SCOP_VECT. The entry is the target region associated with the statically defined transaction when it was defined, or with the destination specified on the EXEC CICS START command for ATI transactions.
- An SM_BALANCE call selects the target region associated with the transaction when it was defined to CICS. The CICSPlex SM Workload Manager will not create any affinity for the transaction.
- An SM_ROUTE call returns an exception response.

When EYU9WRAM is called for:

- Notification, any existing affinity relations are ignored and none are created.
- Route selection error, any existing affinity relations are ignored and none are created. In addition, the EYU9WRAM program as delivered will write a terminal message and terminate.
- Routing attempt complete, for CICS BTS transactions only. Any existing affinities are ignored. Any dynamic routing API function call results in a bad response. See “Non-terminal-related STARTs and CICS BTS considerations” on page 138.
- Transaction initiation, for CICS BTS transactions only. Any existing affinities are ignored. Any dynamic routing API function call results in a bad response. See “Non-terminal-related STARTs and CICS BTS considerations” on page 138.
- Transaction termination, any existing affinities are ignored. Any dynamic routing API function call results in an error response.
- Transaction abend, any existing affinities are ignored. Any dynamic routing API function call results in an error response.
Non-terminal-related STARTs and CICS BTS considerations
When routing a transaction associated with either a CICS BTS activity or a non-terminal-related EXEC
CICS START comand, the routing program, identified in the DSRTPGM SIT parameter, is invoked for both
static and dynamic routing.

In the case of statically routed transactions, the EYU9WRAM program cannot alter the target region; see
“Nondynamic transaction considerations” on page 137. In the case of dynamically routed transactions,
the EYU9WRAM program may alter the target region; see “Selecting a target region from a set of target
regions” on page 138. However, in both cases, the EYU9WRAM program is invoked only for:

• In the requesting region:
  – Notification
  – Route selection
  – Route selection error
  – Route attempt complete
• In the target region:
  – Transaction initiation
  – Transaction termination
  – Transaction abend

For details of the function of route initiation, see Dynamically routing DPL requests.

Selecting a target region from a set of target regions
As distributed, EYU9WRAM uses SM_SCOPE and SM_BALANCE to select a target region from the list of
target regions defined for a transaction. The options that you set affect the way that the target region is
chosen.

• SM_SCOPE returns a list of target regions for the current transaction occurrence. The target regions are
  those that are explicitly or implicitly associated with the requesting region by a workload
specification.
• SM_BALANCE selects a target region from the list of candidate target regions returned by SM_SCOPE.

After an SM_SCOPE or SM_BALANCE call, the result of the operation is indicated in the response and
reason fields of the EYURWCOM communication area.

Actions during route selection
A dynamic route selection occurs when a transaction or program is scheduled for routing.

• When SM_SCOPE is issued, the EYURWCOM communication area Scope Vector pointer is updated with
  the address of the target region scope list description area, SCOP_VECT. Also, the element count field is
  updated to contain the count of elements in the scope vector. Each element in the scope vector
  identifies a candidate target region and indicates its current status.

  During SM_BALANCE processing, the target region appearing first in the ordered list is selected for
  routing, unless the scope vector element EYURWSVE is marked ignore.

• When no affinity is associated with the current transaction occurrence, an SM_SCOPE call sorts the
  SCOP_VECT elements so that the target region that is the best candidate is placed first in the list.

  During SM_BALANCE processing, the APPLID and SYSID of the most suitable target region are placed in
  the fields WCOM_SEL_AOR and WCOM_SEL_SYSID, respectively. Typically, this will be the first target
  region represented in the scope vector. However, if the EYU9WRAM program has marked the WSVE-
  IGNORE field on some of the SCOP_VECT elements to denote that the target region is to be ignored, the
  first target region in the scope vector that is not marked to be ignored will be selected.

  Note:
  1. If the transaction identifier and the ids of the terminal and user associated with that transaction
match a transaction group to which an affinity is defined, the affinity is made active during
SM_BALANCE processing.
2. With DPL, you can update the transaction id before the SM_SCOPE call.

- When an affinity is associated with the current transaction occurrence, an SM_SCOPE call normally causes only the target region with which the affinity exists to be identified in SCOP_VECT. An SM_BALANCE call then selects that target region. If the target region is not available for routing, the SM_BALANCE function will set a warning indicator. It will not attempt to select another target region.

- If the transaction is defined as a DTRTRAN, the EYURWCOM communication area will contain indicators denoting that the transaction is a DTRTRAN and that it will not be rejected by the Workload Manager. Processing is generally identical to the normal, non-DTRTRAN, case. Issuing SM_SCOPE returns a SCOP_VECT. Issuing SM_BALANCE selects a target region.

The EYU9WRAM module might opt to reject the transaction before issuing the SM_SCOPE call. In this case, the Workload Manager returns to CICS with the reject indicator set to Y in the DFHDYPDS communication area. The sample EYU9WRAM program causes a DTRTRAN transaction to be rejected only if the transaction identifier is all blanks.

**Actions during notification**

Notification occurs when a static transaction or ATI transaction is being scheduled for routing.

- For statically routable transactions, ATI transactions, and BTS static routing requests, issuing SM_SCOPE causes the scope vector to contain a single target region. This is the target region associated with the transaction.

**Actions during routing attempt complete**

None, but you can tidy up and release any resources at this stage.

**Actions during route selection error**

A route selection error call occurs if the CICS link between the requesting region and target region is not available or is not defined.

- When no affinity is active: issue SM_SCOPE again. The candidate target regions identified by the SCOP_VECT it returns will not include the target region that caused the error. You can then use SM_BALANCE to select a new target region.

- When affinity became active as a result of the previous route selection:
  - If the lifetime associated with the affinity is PERMANENT, SYSTEM, ACTIVITY, or PROCESS, the target region causing the error will be included in scope list returned by SM_SCOPE. SM_BALANCE is required by affinity rules to select that target region. It also returns a warning to EYU9WRAM. EYU9WRAM should then notify the user that an error has occurred.
  - If the lifetime associated with the affinity is SIGNON, LOGON, DELIMIT, or PCONV, the active affinity status is removed before control returns to EYU9WRAM. When you reissue SM_SCOPE, the target region causing the error will not be included in the scope list. If the workload specification is defined with Create Affinity YES for the transaction group, EYU9WRAM is notified that an affinity is defined and will be activated when you issue SM_BALANCE.

- When affinity was activated by a previous transaction instance, and you issue SM_SCOPE again, the scope list returned contains the previously selected target region. Since SM_BALANCE is required by affinity rules to select that target region, a warning is returned to EYU9WRAM. EYU9WRAM should then notify the user that an error has occurred.

**Actions during transaction termination**

Transaction termination occurs when a transaction has terminated normally.

- EYU9WRAM should release any resources it may have acquired.

- Issuing SM_SCOPE or SM_BALANCE or SM_ROUTE causes an exception response to be returned.
**Actions during transaction abend**

Transaction abend occurs when a transaction has terminated abnormally.

- EYU9WRAM should release any resources it may have acquired.
- Issuing SM_SCOPE or SM_BALANCE or SM_ROUTE causes an exception response to be returned.

**Actions during transaction initiation**

Transaction initiation occurs when a CICS BTS-related transaction, or an enterprise bean-related transaction, has been routed to the target region. No specific action is taken. The call is issued for information purposes only.

**Selecting a specific target region**

SM_ROUTE requests that a specific target region is selected for routing. Use SM_ROUTE when you have application- or data-dependent requirements for explicit routing. For example, you might want to route a transaction associated with a specific user ID to a specific target region.

After an SM_ROUTE call, the result of the operation is stored in the response and reason fields of the EYURWCOM communication area.

A sample SM_ROUTE call is show here:

```
CALL WAPIENPT(DA_TOKEN, SM_ROUTE)
```

DA_TOKEN identifies the dynamic routing API token supplied via the EYURWCOM communication area. This token is used by EYU9WAPI and must not be altered.

**Actions during route selection**

The actions during route selection are:

- If there is only one connection between a requesting region and the target region, you can supply either the SYSID or the APPLID of the target region (CICSPlex SM will determine the appropriate, corresponding ID). Place the APPLID in the WCOM_SEL_AOR field of the EYURWCOM communication area. Place the SYSID in the WCOM_SEL_SYSID field.

  If there are multiple connections between a requesting region and the target region, supply both the SYSID and the APPLID, as described previously, to ensure that the correct target region is selected. Note that when both the SYSID and APPLID are supplied, they are not validated.

  The target region need not be defined to CICSPlex SM. The affinity status is not checked. Thus, no affinity is established as a result of this call and, if an affinity was in effect, it is ignored.

- Issuing SM_ROUTE during Route Notify processing causes an exception response to be returned.

**Actions during routing attempt complete**

None, but you can tidy up and release any resources at this stage.

**Actions during route selection error**

The EYU9WRAM program may issue a message and terminate. You may then issue SM_ROUTE again specifying a different target region, or issue SM_SCOPE and SM_BALANCE.

**Actions during transaction termination**

- EYU9WRAM should terminate any resources it may have acquired.
- Calling any API function causes an exception response to be returned.

**Actions during transaction abend**

- Calling any API function causes an exception response to be returned.
**Actions during transaction initiation**

At transaction initiation:

- EYU9WRAM should terminate any resources it may have acquired.
- Calling any API function causes an exception response to be returned.

**Creating an affinity**

You can use SM_CREAFF to create an affinity if one does not already exist in the transaction group established for the transaction.

The transaction group must be defined with an affinity type and lifetime. The affinity created will have the same affinity type and lifetime as defined in the transaction group.

You should review “Affinity considerations” on page 141 before using SM_CREAFF.

Before calling SM_CREAFF, you must first call SM_SCOPE to obtain a scope list. SM_CREAFF will not create an affinity to a target region that is not in the scope list. In addition, you should set the EYUWRCOM communication area fields WCOM_SEL_AOR and WCOM_SEL_SYSID to the APPLID and SYSID, respectively, of the target region for which you want the affinity created.

EYU9WRAM contains a fragment of unexecuted code that you can use as a template for implementing the SM_CREAFF function.

The SM_CREAFF function cannot be called during:

- Route termination
- Route abend
- Route notify
- Route initiate
- Route complete

**Deleting an affinity**

You can use SM_DELAFF to delete an active affinity.

You should review “Affinity considerations” on page 141 before using SM_DELAFF.

Before calling SM_DELAFF, you must first call SM_SCOPE to obtain a scope list. The WCOM_AFF_STAT field in the EYURWCOM communication area contains a value indicating whether an affinity is active or committed. An active affinity can be deleted using SM_DELAFF. A committed affinity has a lifetime of SYSTEM or PERMANENT and cannot be deleted using SM_DELAFF.

EYU9WRAM contains a fragment of unexecuted code that you can use as a template for implementing the SM_DELAFF API function.

The SM_DELAFF function cannot be called during:

- Route notify
- Route initiate
- Route complete

**Affinity considerations**

When you define an affinity, you must specify its lifetime. The affinity normally persists until its specified lifetime expires.

You can define one of the following types of lifetime:

**Activity**

- Expires when the CICS BTS activity ends

**Delimit**

- Expires when the PCONV mode of the transaction is END

**Logon**

- Expires when the terminal user logs off.
Pconv
Expires when a transaction uses EXEC CICS RETURN specifying no NEXTTRANSID or the PCONV mode of the transaction is END.

CICS does not support pseudoconversations for APPC (LTYPE6.2) devices.

Permanent
Expires when the workload of which the target region is a part terminates

Process
Expires when the CICS BTS process ends

Signon
Expires when the terminal user signs off.

System
Expires when the target region terminates

UOW
Expires when the unit of work associated with the transaction ends. The unit of work ends either when a CICS SYNCPOINT or ROLLBACK request is run, or when the originating task terminates.

There are circumstances when SM_SCOPE generates a scope list containing a single affinity target region, but the target region is not available for routing. This happens when:

• The target region is down.
• The CICS link to the target region is down.
• The target region is currently active but it was shutdown and restarted after the affinity was created.

In these cases, the EYU9WRAM default processing issues a terminal message indicating that the affinity target region is not available and causes the transaction to terminate. If the affinity lifetime is PCONV (pseudoconversation), CICSPlex SM automatically deletes the affinity because it has expired (there is no NEXTTRANSID). However, the default EYU9WRAM processing does not delete any other affinities because the characteristics of the actual affinity to the target region are unknown. For example, a LOGON affinity may involve the use of the TCTUA to pass information to the target region. If the affinity is deleted when the target region is not available, the next transaction for the transaction group would cause a new target region to be selected. The transaction might fail upon using the TCTUA contents when routed to the new target region.

The sample EYU9WRAM program, which implements the default processing, contains a subroutine that checks on affinity status after a call to SM_SCOPE. When an affinity is active to a target region, but not committed, and the affinity target region status is not OK, the subroutine sends a message to the terminal user and then exits so that the EYU9WRAM program terminates. The subroutine contains an unexecuted code fragment that can be used to delete the affinity using the SM_DELAFF call. Before the unexecuted code fragment is a series of tests for the affinity lifetime of the active affinity. One or more of the branches can be changed to jump to the code fragment. The code fragment itself deletes the affinity, issues a message, and then returns so that the EYU9WRAM program exits, thereby causing the transaction to terminate. This processing can be modified so that the affinity is deleted, no message is issued, and the subroutine exits causing the mainline process to reexecute the SM_SCOPE call. In that case, a new set of target regions is received for use by SM_BALANCE.

The same subroutine also contains an unexecuted code fragment that can be enabled to create an affinity. In this case, the subroutine has determined that an affinity is defined but not active. It then checks the WCOM_AFF_AUTO indicator to determine whether CICSPlex SM should automatically create affinities during SM_BALANCE. The subroutine exits normally no matter what the answer is. You can enable the SM_CREAFF fragment in order to cause an affinity to be created. The SM_CREAFF call may be used regardless of whether WCOM_AFF_AUTO does or does not indicate the automatic creation of affinities during SM_BALANCE. The SM_CREAFF call can therefore be used to:

• Create an affinity when CICSPlex SM will not.
• Create an affinity to a target region that CICSPlex SM would ordinarily not select.

The SM_CREAFF code fragment creates an affinity to the target region that appears first in the scope list returned by SM_SCOPE.
The following fields in the EYURWCOM communication area provide information regarding CICSPlex SM affinity processing.

- WCOM_AFF_STAT
- WCOM_AFFAOR_STAT
- WCOM_AFF_TYPE
- WCOM_AFF_LIFE
- WCOM_AFF_AUTO
- WCOM_WORK_NAME
- WCOM_TGRP_NAME

CICSPlex SM data areas

The EYU9WRAM program uses two data areas, communication area EYURWCOM and scope vector element EYURWSVE.

Literals for EYURWCOM are defined in EYURWCOD and literals for EYURWSVE are defined in EYURWSVD.

The names of the copy books that you can use to map these data areas are identified in Sample programs and copy books.

The scope vector element, EYURWSVE, contains information about the individual target regions associated with the list of candidate target regions returned by SM_SCOPE.

Creating a user-replacement module for EYU9WRAM

You can use the sample procedures provided in CICSTS54.CPSM.SEYUPROC to create replacement modules for EYU9WRAM.

The procedure members are as follows:

- Assembler: EYUEITAL
- C: EYUEITDL
- PL/I: EYUEITPL
- COBOL: EYUEITVL

1. Copy these procedures to a cataloged system procedure library. You can use the samples in Sample user-replacement modules.

2. Use the JCL samples to run the procedure and create the replacement module for EYU9WRAM. Replace the lower case values shown in the sample JCL with the appropriate values for your site. Also, you cannot use the CICSPlex SM API in EYU9WRAM.

Requesting additional dynamic routing support

This section contains Product-sensitive Programming Interface Information.

You can access the CICSPlex SM workload management facilities directly from an application program.

**Note:** If you are running CICS Transaction Server for OS/390® Version 1 Release 3 and later, it is recommended that you use the CICSPlex SM-supplied program EYU9XLOP for all your dynamic routing requirements. You need the information in this section only if you want to continue to use this function during migration to CICS Transaction Server for OS/390 Version 1 Release 3.

If your routing regions are CICS Transaction Server for OS/390 Version 1 Release 3 and later, or if you are using CICS BTS or enterprise beans, you do not need the information in this section. You should use the distributed routing facilities described in “Dynamic routing with CICSPlex SM” on page 127.

To write such a program, you should be familiar with:

- The interface between the CICS relay program and the defined dynamic routing program.
- CICSPlex SM workload management processing, as described in Introduction to workload management.
- The CICSPlex SM workload management routing action module, EYU9WRAM, as described in “Dynamic routing with CICSPlex SM” on page 127.

The primary method of invoking CICSPlex SM workload management is by defining module EYU9XLOP to CICS as the dynamic routing program. This causes EYU9XLOP to be invoked by the CICS relay program, allowing CICSPlex SM workload management to make a routing decision about each work request that can be sent to another CICS system.

If necessary, CICSPlex SM workload management can be invoked directly from an application program, without going through the CICS relay program. For CICS releases prior to CICS Transaction Server for OS/390 Version 1 Release 3, you can use CICSPlex SM Workload Management to determine the best target region for a distributed program link (DPL) from a requesting region. The application program you write must follow certain guidelines:

- The program must run in a CICS system that is defined and running as a routing region. You cannot access CICSPlex SM workload management from a target region.
- The program must issue its INIT and TERM calls from the same task. CICSPlex SM expects the program to imitate the processing done by the CICS relay program, which always calls at route initiation and route termination.

**Note:** Accessing workload management through a program that issues an EXEC CICS START command is not recommended with an asynchronous transaction start. Furthermore, EXEC CICS START commands that are not related with either a terminal or a user should not be used for transactions that have affinity relationships, as those relationships cannot be correctly resolved using this interface.

Accessing workload management from a program using a dynamic program load is not supported. CICSPlex SM workload management uses the CICS application programming interface to gather information about the current environment in which it is running. Due to DPL restrictions some of that information is not available, and unpredictable results may occur.

In order to make a routing decision, CICSPlex SM workload management needs certain information that is normally supplied by the CICS relay program. The CICS relay program derives the information from data available to CICS for the instance of the transaction being relayed. When you invoke CICSPlex SM workload management directly, you need to provide this information, including terminal-oriented data and the equivalent of a transaction name to identify the work to be routed.

**How to start CICSPlex SM workload management**

To start the CICSPlex SM workload management facilities, use an EXEC CICS LINK command, specifying EYU9XLOP as the program and identifying EYURWTRA as the communication area.

The format of the command is:

```
EXEC CICS LINK
    PROGRAM(EYU9XLOP)
    COMMAREA(EYURWTRA)
    LENGTH(=AL2(WTRA_LENGTH))
```

Much of the data normally passed from the CICS relay program to the dynamic routing program in the DFHDYPDS communication area must be generated by your program and passed to CICSPlex SM workload management. Other data that is normally derived by CICSPlex SM workload management from a transaction- and terminal-oriented environment must also be provided by your program. The assembler copy book EYURWTRA provides a map of the communication area to be passed to CICSPlex SM workload management.

The corresponding copy books and the CICSPlex SM libraries in which they can be found are:

<table>
<thead>
<tr>
<th>Language</th>
<th>Member name</th>
<th>Library</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assembler</td>
<td>EYUAWTRA</td>
<td>SEYUMAC</td>
</tr>
<tr>
<td>COBOL</td>
<td>EYULWTRA</td>
<td>SEYUCOB</td>
</tr>
</tbody>
</table>
Before invoking CICSPlex SM workload management, you must initialize the EYURWTRA communication area.

For a list of the possible response and reason code values that can be returned in WTRA_API_RESP and WTRA_API_REAS, refer to the assembler copy book member EYURWCOD.

Processing considerations
After CICSPlex SM workload management processing, the WTRA_RESPONSE field contains a return code of either zero (0) or 8.

If the return code is 0, WTRA_SYSID contains the SYSID of the selected target region, and WTRA_APPLID contains its APPLID. With that information, you can proceed to route the unit of work to the target region.

If the return code is 8, you should inspect the WTRA_API_RESP and WTRA_API_REAS fields for more information. These fields contain the last response and reason codes returned to the CICSPlex SM workload management routing action module (EYU9WRAM). In most cases, the response and reason codes describe what caused CICSPlex SM workload management to generate the return code of 8. Based on that information, you can decide how to proceed.

In some cases, however, the WTRA_RESPONSE field may contain a return code of 8, while the WTRA_API_RESP and WTRA_API_REAS fields have not been set by CICSPlex SM workload management. In those cases, an error was detected before invoking the routing action process. CICSPlex SM user trace records are written to the CICS trace data set for those types of errors. When this happens, your program should terminate processing.

When the return code is 8, you should also inspect the WTRA_OPTER field. If its value is WTRA_CALYYES:

1. Set the WTRA_FUNC field to WTRA_FUNCTRM for route termination.
2. Reinvoke CICSPlex SM workload management.
3. Terminate processing for the proposed unit of work.

If the WTRA_OPTER field contains a value of WTRA_CALLNO, terminate further processing for the proposed unit of work.

After the unit of work has completed in the target region, set the WTRA_FUNC field according to how the unit of work completed. If the unit of work completed successfully:

1. Set the WTRA_FUNC field to WTRA_FUNCTRM for route termination.
2. Optionally, set the WTRA_NEXTRAN field to the ID of the next transaction to be used in the process. If there is no next transaction, set the field to all blanks.
3. Reinvoke CICSPlex SM workload management to request termination processing for the transaction.

If the unit of work abended or generated an error that you consider abnormal:

1. Set the WTRA_FUNC field to WTRA_FUNCABD to notify CICSPlex SM workload management that the routed transaction abended.
2. Reinvoke CICSPlex SM workload management to request abnormal termination processing for the transaction.

Route error considerations
After you receive the SYSID and APPLID of a target region, you can attempt to route the unit of work to the target region.

However, the routing attempt may result in an error condition if the system is unavailable. When this happens, you should:

1. Set the WTRA_FUNC field to WTRA_FUNCERR to indicate a routing error.
2. Specify the reason for the error in the WTRA_ERR field.
3. Reinvoke CICSPlex SM workload management.

CICSPlex SM workload management provides another target from the scope list, if possible. If no other systems are available, the WTRA_RESPONSE field is set to 8 and the WTRA_API_RESP and WTRA_API_REAS fields describe the reason for the failure. You may have to invoke CICSPlex SM workload management more than once for routing errors until you receive a valid target region.

**Transaction affinity considerations**
If the WTRA_TRANID, WTRA_USERID and WTRA_LUNAME fields cause CICSPlex SM workload management to select a transaction group that includes an affinity, the rules of transaction affinities are obeyed.

In this case, you should ensure that the WTRA_NEXTTRAN field is initialized with the ID of the next transaction before calling the route termination function.

If your units of work, or any subset of them, have an affinity relation defined, be careful in how you define that affinity. Since your program cannot provide SIGNOFF or LOGOFF processing, an affinity lifetime of SIGNON or LOGON, though valid, may cause an affinity relation to be built that is not removed until either the requesting region or the target region terminates.

The WTRA_NEXTTRAN field is most useful for pseudo-conversation affinities. For this affinity lifetime, CICSPlex SM workload management normally issues the EXEC CICS ASSIGN NEXTTRANSID command to retrieve the next transaction ID, if any, for the facility. Since that command is not available when CICSPlex SM workload management is invoked by your program, it is your responsibility to provide the ID of the next transaction.

For a description of CICSPlex SM workload management affinity processing, see Taking affinity relations into consideration. For details on specifying affinity relation and lifetime values, see Creating a transaction group.

**Abend compensation considerations**
If the target region is running CICS TS, transactions initiated by your program can participate in abend compensation processing, provided that the active CICSPlex SM workload specifies it.

You should note that, if the work requests are either non-terminal-related EXEC CICS START commands, or BTS activities, the routing and target regions must be within the same MVS image for the routing region to detect that an abend has occurred.

Your program should notify CICSPlex SM workload management that a particular unit of work abended by specifying WTRA_FUNCABD in the WTRA_FUNC field. Then, if possible, CICSPlex SM workload management will tend to avoid selecting the same target region for the transaction (or set of transactions, if an affinity is defined) on subsequent route select functions.

For a description of CICSPlex SM workload management abend compensation processing, see Abend probabilities and workload management. For details on requesting abend compensation, see Creating a workload specification.

**CMAS availability considerations**
If your program issues an EXEC CICS LINK for the EYU9XLOP program, but the requesting region in which your program is running has not yet fully connected to its target CMAS, you see message EYUXL0020I, indicating that an ESSS connection is in progress.

Your program waits indefinitely until the CMAS becomes available and the requesting region is joined to a workload. If you have connected successfully to the CMAS and the MAS, but the CMAS has not installed any workload definitions to the MAS, you see a message indicating that the requesting region is waiting for a workload. You may need to set up and install workloads to rectify this situation.

**Note:** Once the requesting region has successfully connected to the CMAS, the CMAS can become inactive and workload management remains active.
Sample calling sequence
This code example illustrates a sample calling sequence for a program that accesses CICSPlex SM workload management facilities. It is not intended to be used as a sample program and is, therefore, not complete in every detail.

*---------------------------------------------------------------------*
DFHEISTG  ,                   Define Workarea
WRK_WTRA       DS   CL(WTRA_LENGTH)
                DS   0D
WRK_UOWCOMM    DS   0C
WRK_UOW_RESP   DS   F
WRK_UOWCOMM_L EQU  *-WRK_UOWCOMM
COPY  EYURWTRA                Include DSECT to map WTRA
SRVPGM   DFHEIENT EIBREG=R11,DATAREG=R13,CODEREG=R12
*---------------------------------------------------------------------*

* Initialize the WTRA COMMAREA.                                       *
*---------------------------------------------------------------------*
LA    R8,WRK_WTRA             --> WTRA
USING EYURWTRA,R8             *** USING WTRA ***
MVC   WTRA_SLENGTH,=AL2(WTRA_LENGTH)           Set length of block.
      WTRA_ARROW,C'>'         Set arrow.
      WTRA_NAME,=C'EYURWTRA'  Set the name.
      WTRA_BLANK,C' '         Set blank delimit.
      WTRA_PGMNAME,=CL8'SRVPGM '     Set program name.
      WTRA_TERMID,=CL4'TRM1'   Set TermID.
      WTRA_USERID,=CL8'USR1'   Set USERID.
      WTRA_LUNAME(8),=CL8'.NET1'     Set LUNAME.
      WTRA_TRANID,=CL8'TRN1'   Set TRANID.
      WTRA_SYSID,=C'SYS1'     Set SYSID.
      WTRA_APPLID,=C'APPLID1' Set Applid.
* Set Application Context*
  MVC   WTRA_PLATFORM,=CL64'PLATFORM_1.0.0'
  MVC   WTRA_APPLICATION,=CL64'APPLICATION_1.0.2'
  MVC   WTRA_MAJORVER,=F'1'
  MVC   WTRA_MINORVER,=F'1'
  MVC   WTRA_MICROVER,=F'1'
  MVC   WTRA_OPERATION,=CL64'PLEASE_ROUTE'
  MVI   WTRA_FUNC,WTRA_FUNCSEL  Set the Route Select Function.
  MVI   WTRA_DYRTYPE,WTRA_DYRTYPE_DYN
*---------------------------------------------------------------------*

* Invoke the WLM MAS Agent for Route Select.                          *
*---------------------------------------------------------------------*
ROUTE_SELECT   DS  0H
BAS   R5,LINK_WLM             Go do it.
CLC   WTRA_RESPONSE,=F'0'     Call go OK?
BNE   CHECK_OPTER             ..no.
BAS   R5,START_UOW            Go Start the UOW.
LTR   R15,R15                 Work Completed?
BZ    ROUTE_TERM              ..yes.
BP    ROUTE_ABND              UOW gave non zero return code.
C     R15,=F'-4'              SYSID error?
BNE   ROUTE_ABND              ..no.
*---------------------------------------------------------------------*

* Invoke the WLM MAS Agent for Route Error.                           *
*---------------------------------------------------------------------*
ROUTE_ERROR    DS  0H
MVI   WTRA_FUNC,WTRA_FUNCERR  Set the Termination Function.
MVI   WTRA_ERR,WTRA_ERRROUT   Say out of service.
B    ROUTE_SELECT            Go Get another system.
*---------------------------------------------------------------------*

* Invoke the WLM MAS Agent for Route Abend.                           *
*---------------------------------------------------------------------*
ROUTE_ABND     DS  0H
MVI   WTRA_FUNC,WTRA_FUNCABD  Set the Abend function.
BAS   R5,LINK_WLM             Go terminate.
CLC   WTRA_RESPONSE,=F'0'    OK?
BE    EXIT_ABD                ..yes.
CHECK_OPTER   DS  0H
CLI   WTRA_OPTER,WTRA_CALLYES Call WLM for Term?
BNE   WLM_CALLERR              ..no.
Administering workloads with CICSPlex SM

CICSPlex SM workload management optimizes processor capacity in your enterprise. Workload management dynamically routes transactions and programs to whichever CICS region is the most appropriate at the time, taking into account any transaction affinities that exist.

Workload management definitions and their related views

You use the Web User Interface (WUI) workload management administration views to define a variety of workload management attributes.

Figure 19 on page 149 provides an overview of the workload management views from the perspective of the CICSPlex SM object model. In addition to these views, you can use the views to display information about and manage active workloads. You can also display a visual map of your workload management definitions by using the MAP button.
Figure 20 on page 150 illustrates the relationship between the components of a workload in a CICSplex and the views used to establish the workload.

Figure 19. Views for creating workload management objects and associations
Figure 20. The relationship between a workload and the workload management views

Table 11 on page 151 shows the views you can use to create workload management definitions. It also indicates the information you can display and the actions you can perform using these views. To access these views in the Web User Interface, from the main menu, click Administration > Workload manager administration.
### Table 11. Views to create and maintain workload management definitions

<table>
<thead>
<tr>
<th>WUI view</th>
<th>Object name</th>
<th>Tasks Supported</th>
</tr>
</thead>
</table>
| Transactions in transaction groups           | DTRINGRP    | • Display all transaction groups within the current context.  
• Remove a transaction from a transaction group.  
• Display a map of workload definitions using the designated transaction group as a starting point. |
| CICS system groups associated with workload specifications | LNKSWSCG | • Display, create or remove the association between a workload specification and a CICS system group.                                           |
| CICS systems associated with workload specifications | LNKSWSCS | • Display, create, update or remove a link between a workload specification and a CICS system.  
• Display a map of workload definitions using the designated definition as a starting point. |
| Transaction groups                            | TRANGRP     | • Display, create, display, update, remove, or update a transaction group.  
• Add a transaction to a transaction group.  
• Install  
• Display a map of workload definitions using the designated transaction group as a starting point. |
| Workload definitions                          | WLMDEF      | • Create, change, or remove a workload definition.  
• Add an association between a workload definition and a workload group.  
• Install a workload definition into a workload. |
### Table 11. Views to create and maintain workload management definitions (continued)

<table>
<thead>
<tr>
<th>WUI view</th>
<th>Object name</th>
<th>Tasks Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workload groups</td>
<td>WLMGROUP</td>
<td>• Display, create, update, or remove a workload group.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Add an association between a workload group and a workload specification.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Install workload definitions associated with a workload group into a workload.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Display a map of workload definitions using the designated workload group as the starting point.</td>
</tr>
<tr>
<td>Workload definitions in groups</td>
<td>WLMINGRP</td>
<td>• Add or remove the association between a workload definition and a workload group.</td>
</tr>
<tr>
<td>Workload specifications</td>
<td>WLMSPEC</td>
<td>• Display, create, update, or remove a workload specification.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Add an association between a workload specification and a CICS system.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Add an association between a workload specification and a CICS system group.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Display a map of workload definitions using the designated workload specification as a starting point.</td>
</tr>
<tr>
<td>Workload groups in workload specifications</td>
<td>WLMINSPC</td>
<td>• Remove the association between a workload group and a workload specification.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Display a map of workload definitions using the designated definition as a starting point.</td>
</tr>
</tbody>
</table>

Table 12 on page 152 shows the views you can use to manage active workloads. It also indicates the information you can display and the actions you can perform using these views. To access these views in the Web User Interface, from the main menu, click **Active workloads (WLM)**.

### Table 12. Views to manage active workloads

<table>
<thead>
<tr>
<th>WUI view</th>
<th>Object name</th>
<th>Tasks Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active workloads</td>
<td>WLMAWORK</td>
<td>• Display active workloads within the current context.</td>
</tr>
<tr>
<td>Routing regions in an active workload</td>
<td>WLMAWTOR</td>
<td>• Display active routing regions that are associated with a workload.</td>
</tr>
</tbody>
</table>
### Table 12. Views to manage active workloads (continued)

<table>
<thead>
<tr>
<th>WUI view</th>
<th>Object name</th>
<th>Tasks Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active workload target distribution factors</td>
<td>WLMAWAOR</td>
<td>• Display target regions that are associated with a workload.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Activate a target region associated with an active workload.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Quiesce a target region associated with an active workload.</td>
</tr>
<tr>
<td>Active workload definitions</td>
<td>WLMAWDEF</td>
<td>• Display active workload definitions associated with a workload.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Discard an active workload definition.</td>
</tr>
<tr>
<td>Active workload transaction groups</td>
<td>WLMATGRP</td>
<td>• Display active transaction groups associated with a workload.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Change the status of a transaction group to active.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Change the status of an active transaction group to dormant.</td>
</tr>
<tr>
<td>Active workload dynamic transactions</td>
<td>WLMATRAN</td>
<td>• Display active transactions associated with a workload.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Discard a transaction from a transaction group.</td>
</tr>
<tr>
<td>Active workload transaction group affinities</td>
<td>WLMATAFF</td>
<td>• Display the active affinities for a transaction group associated with a workload.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Discard an affinity entity.</td>
</tr>
</tbody>
</table>

### Creating workload management definitions using the WUI

This section contains examples of the tasks involved in creating and managing workload management definitions using the WUI. Unless noted otherwise, only the context is recognized when you are creating and maintaining workload management definitions.

#### Creating a workload specification

A WLM specification identifies a workload and one or more CICS systems acting as target regions. The specification also defines the attributes of the default transaction group. You can use the WUI **WLM specifications** view to create a workload specification.

To create a workload specification and add it to the data repository:

- From the WUI main menu, click **Administration > Workload manager administration > Specifications** to open the **WLM specifications** tabular view.

  This view displays a list of existing workload specifications. It has action buttons that allow you to create, update, and remove workload specifications, and to associate CICS systems and CICS system groups with a workload specification.
• Click the Create... button. To use some of the information from an existing definition in the creation of your new definition, select an existing definition by selecting an adjacent check box in the Record column.
• Click the Create... button.
• Complete the fields and click the Yes button to create the new specification. Otherwise, click No to abandon the process.

The WLM specification view is redisplayed and includes an entry for the new definition.

**Associating a CICS system or system group with a workload specification**

Each workload specification has a default target scope and one or more CICS systems or CICS system groups associated with it.

These associated CICS systems or groups are known as the routing scope. The default target scope is identified when you create the specification. Associated CICS systems and system groups are identified when you add the routing region to the specification.

Follow this procedure to associate a CICS system group to an existing workload specification:

1. Click Administration > Workload manager administration—>Specifications to open the WLM specifications view.
   This view displays a list of existing workload specifications.
2. Select a workload specification and click the Associate CICS group... button. This opens the Associate CICS group... view.
3. In the CICS system group field, enter the specific or generic name of an existing CICS system group that represents one or more routing regions.
   **Note:** A CICS system or CICS system group acting as a routing region can be associated with only one workload specification at a time. A specification, however, can be associated with any number of CICS systems and CICS system groups.
4. Select one of the following options to indicate how the CICS systems that make up the CICS system group are to use the workload specification associated with the CICS system group:
   **FORCE**
   All CICS systems currently associated with the CICS system group are to use the workload specification. (The workload specification attribute for each CICS system changes to INHERIT, indicating that the specification was acquired from the CICS system group). If you add a new CICS system to the CICS system group, it does not automatically inherit the FORCE option. You must specify NULL or FORCE when adding a CICS system to a CICS system group.
   **NULL**
   Those CICS systems in the CICS system group that are not associated with a workload specification are to use this workload specification. (The workload specification attribute for those CICS systems changes to INHERIT, indicating that the specification was acquired from the CICS system group.)
   **NONE**
   Only the CICS system group is to be associated with the workload specification. The CICS systems in the CICS system group are not affected. That is, if there is no association between a CICS system and a workload specification, none is established; if there is an association, either explicitly established or inherited from another CICS system group, it is unchanged.

   **Note:**
   a. If the CICS system group includes other CICS system groups, all of the CICS systems, including those in subordinate CICS system groups, are affected by the value specified in this field.
   b. The CICS systems designated as the default target scope when you created the workload specification must be accessible to the CICS systems identified as the routing scope. Therefore, you should verify that the appropriate CICS connections exist between each routing region and all of the CICS systems in the target scope identified here.
5. Click **Yes** to update the workload specification in the data repository. Otherwise, click **No** to abandon the process.

Once you associate a CICS system or system group to a workload specification, the specification is automatically installed whenever an associated CICS system is started. Any workload definitions associated with the specification through workload groups are also automatically installed.

However, if you associate the workload specification with a CICS system that is already active, the new specification is not immediately available. To turn workload management on:

1. Click **Administration > Topology administration > System definitions** to display a list of active CICS systems.
2. Select the CICS system and click the **Update...** button.
3. In the **Workload manager status** field, specify **YES**, and click the **Yes** button to turn on workload management. Otherwise, click **No** to abandon the process.

### Updating a link between a WLM specification and a CICS system

**Procedure**

1. From the main menu, click **Administration > Workload manager administration.**
2. From the **Workload manager administration views** menu, click **Specifications to system links.**
   
   The **WLM specifications to CICS system links** view (LNKSWSCS object) is displayed.
3. Check the box for the WLM specification to be updated.
   
   You can check more than one box.
4. Click the **Change Spec Association** button to display the **Change Spec Association (EYUSTARTLNKSWSCS.CHGSPEC) view.**
5. Type the new name in the **New WLM specification name** field and select an appropriate inherit option.
   
   • Click **Yes** to update the link between a monitor specification and a CICS system group.
   
   • Click **No** to abandon the process.

### Updating a link between a WLM specification and a CICS system group

**Procedure**

1. From the main menu, click **Administration > Workload manager administration.**
2. From the **Workload manager administration views** menu, click **Specifications to system group links.**
   
   The **WLM specifications to CICS system links** view (LNKSWSCG object) is displayed. For more information about the LNKSxSCG parameters, see LNKSxSCG Records (LNKSMSCG, LNKSRS CG, L NKSWSCG).
3. Check the box for the WLM specification to be updated.
   
   You can check more than one box.
4. Click the **Change Spec Association** button to display the **Change Spec Association (EYUSTARTLNKSWSCG.CHGSPEC) view.**
5. Type the new name in the **New WLM specification name** field and select an appropriate inherit option.
   
   • Click **Yes** to update the link between a monitor specification and a CICS system group.
   
   • Click **No** to abandon the process.
Creating a transaction group
A transaction group is an association of logically similar transactions. The similarity can be based on workload management (WLM) or affinity requirements, common shared processing requirements, or any other user-determined characteristic.

About this task
For workload management, any WLM information you specify in the transaction group, including the routing algorithm type, overrides the defaults supplied in the associated workload specification (WLMSPEC). If you specify alternative WLM attributes in a transaction group, you can change workload routing characteristics for the associated transactions dynamically without stopping your routing region.

Procedure
1. Click **Administration > Workload manager administration > Transaction group definitions** to open the **Transaction group definitions** view.
   - This view displays a list of existing transaction group definitions. You can create, update, and remove transaction group definitions, and add a transaction to a transaction group.
2. Optional: To use information from an existing definition when you create a new definition, select the check box in the Record column next to the required existing definition.
3. Click **Create**.
4. Provide the appropriate information to create your transaction group definition.
   - See **Transaction group definitions - TRANGRP** for a description of the fields in this view.
5. Click **Yes** to create the new definition and add it to the data repository.
   - The **Transaction group definitions** view is displayed again with an entry for the new definition.

What to do next
If you modify the WLM information for an installed transaction group, you must discard its associated WLM definition (WLMDEF) then reinstall it, so that the transaction group named by the WLM definition is also refreshed. However, if you want to change the routing algorithm type (the ALGTYPE attribute), you can change it immediately without discarding and reinstalling the associated WLMDEF by using the Active workload transaction groups (WLMATGRP) views and the **SET** command.

Creating a workload definition
You can use workload definitions to route work requests to a specific set of target regions based on the terminal and user names, or the process types, associated with those work requests. This section describes how to create a workload definition and add it to the data repository.

The terminal and user names may be either specific or generic. For example, you can create a workload definition that causes all transactions initiated by any user from terminals with logical unit names starting with NET to be routed to the target scope identified as EYUCSG01.

The transaction match criteria that CICSPlex SM uses to determine if a transaction should be routed are as follows:

- Is the transaction identifier part of a transaction group associated with the workload definition?
- Is there a definition specifying separation by process type? Is there a match? If so, use this definition. If not, is there a definition specifying separation by terminal logical unit name and user ID?
- In what order should the terminal and user names associated with the transaction be evaluated; that is, which name is to be used as the primary filter?
- Do the user and terminal names associated with the transaction match the name patterns specified with the workload definition?

The rules for establishing terminal and user name patterns are:

- When there are multiple workload definitions, the field containing the name identified as the primary filter can contain the same specific or generic pattern; the contents of the field used as the secondary
filter must always be unique. For example, the following definitions are valid when USERID is the primary filter and LUNAME is the secondary filter. They are not valid, however, when LUNAME is the primary filter because the user identifiers are not unique.

<table>
<thead>
<tr>
<th>Entry Name</th>
<th>EYUWMD01</th>
<th>EYUWMD02</th>
<th>EYUWMD03</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trangroup Name</td>
<td>EYUTFG01</td>
<td>EYUTFG01</td>
<td>EYUTFG01</td>
</tr>
<tr>
<td>Terminal Luname</td>
<td>LUR*</td>
<td>LUL*</td>
<td>LUT*</td>
</tr>
<tr>
<td>User ID</td>
<td>PIE*</td>
<td>PIE*</td>
<td>PIE*</td>
</tr>
</tbody>
</table>

- When a generic name is specified, the pattern with the most matching leading characters has precedence. For example, with the following patterns:
  
  A37AR*
  A37+R*

Pattern A37AR* is selected when the input is A37AR123. Pattern A37+R* is selected when the input is A37TRAP.

- Terminal LU name patterns are matched on the concatenated values of network name and logical unit name. The following are valid terminal LU name patterns:
  
<table>
<thead>
<tr>
<th>Network Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NETWORK1.LU12345678</td>
<td>A specific luname</td>
</tr>
<tr>
<td>NETWORK1.LUI*</td>
<td>Generic lunames in the network</td>
</tr>
<tr>
<td>NETWORK1.*</td>
<td>All lunames in the network</td>
</tr>
<tr>
<td>NET*</td>
<td>All lunames in a generic network</td>
</tr>
<tr>
<td>.LU12345678</td>
<td>A specific luname within all networks</td>
</tr>
<tr>
<td>.* or *</td>
<td>All lunames within all networks</td>
</tr>
</tbody>
</table>

To create a workload definition and add it to the data repository:

1. Click Administration > Workload manager administration > Definitions to open the Workload management definition view.

   This view displays a list of existing workload management definitions. It has action buttons that allow you to create, update, remove and install workload definitions, and to add a workload definition to a workload group.

2. If you want to use some of the information from an existing definition in the creation of your new definition, select an existing definition by selecting an adjacent check box in the Record column.

3. Click the Create action button.

4. Provide the following information, as appropriate:

   **Workload management definition name**
   Specify a 1- to 8-character name for the workload definition. The name can contain alphabetic, numeric, or national characters. However, the first character must be alphabetic.

   **Description**
   (Optional) Specify a 1- to 30-character description of the definition.

   **Trangroup group name**
   (Optional) Enter the specific or generic name of a transaction group. If you enter a generic value, a list of valid transaction groups is displayed.

   If you do not identify a transaction group, the default transaction group for the specification is assumed.

   **Terminal LU name**
   Enter a specific logical unit name or a pattern, using the format:

   `[network_qualifier_name][.luname]`

   where both the network_qualifier_name and the luname are between 1 and 8 characters in length. Both the network_qualifier_name and the luname are optional, however one must be specified. If the luname is specified it must be prefixed by a period sign.
A pattern can include the characters + (plus sign), * (asterisk), or both; where the plus sign represents any non-blank character and can be specified anywhere in the pattern and the asterisk represents a range of zero or more characters that may include blanks. The asterisk must only be used at the end of the pattern.

**User ID**
Enter a specific user ID or a pattern. A pattern can include the characters + (plus sign), * (asterisk), or both.

*Note:* The Terminal Luname and User ID values are used when CICSPlex SM attempts to match a transaction with this definition.

**BTS process type**
Enter a specific process type or a pattern. A pattern may include + (plus sign), * (asterisk), or both.

*Note:* If you specify anything other than an * in this field, the luname and user id fields must be set to an *. Similarly, if there is anything other than an * in either luname and user id, this field must be set to *. You cannot separate a workload by process type, luname and user id.

**Scope name of set of target systems**
Enter the specific or generic name of a CICS system or CICS system group to be used as target regions for dynamic routing requests. If you enter a generic value, a list of valid CICS systems and CICS system groups is displayed.

*Note:* The specified CICS system or CICS system group must be accessible to the CICS systems identified as the routing scope with the workload specification to which this definition is associated. Therefore, you should verify that the appropriate CICS connections exist between each routing region and all of the CICS systems identified here as the target scope.

5. Click **Yes** to create the new definition.

The **Workload management definition** view is redisplayed and includes an entry for the new definition.

**Creating a workload group**
A workload group is used to associate one or more related workload definitions.

An example of how to use this view can be found in “Routing a specific transaction to a specific target region” on page 182. This section describes how to create a workload group definition and add it to the data repository.

- Click **Administration views—>Workload manager administration views—>Groups** to open the **WLM groups** view.

  This view displays a list of your existing workload management group definitions. It has action buttons that allow you to create, update, remove and install workload groups, and to add a group to a workload specification.

- If you want to use some of the information from an existing definition in the creation of your new definition, select an existing definition by selecting an adjacent check box in the **Record** column.

- Click the **Create** action button.

- Provide the following information, as appropriate:

  **Workload management group name**
  Specify a 1- to 8-character name for the workload group. The name can contain alphabetic, numeric, or national characters. However, the first character must be alphabetic.

  **Description**
  (Optional.) Specify a 1- to 30-character description of the workload group.

- Click **Yes** to create the new definition.

The **Workload management group** view is redisplayed and includes an entry for the new definition.
About workload view route fields

Use the "Active workload target distribution factors" and "Summarized active target region distribution trends" views together with route fields statistics displayed in the active workload views to understand what is happening in workload management.

You can use the route fields statistics information in the "Summarized active target region distribution trends" view to verify that your existing workload is running correctly, and that it is not losing transactions. The "Summarized active target region distribution trends" view also provides a new perspective on events inside WLM during the routing process.

Using the "Active workload views", you can highlight potential issues with your setup. For example, if routing is called and continually retrying to discover other available targets.

You can see counts of what is happening inside WLM; for example, the number of Route completes versus the number of Route selects. An example of this is the Route notifies field which shows you when you are linking to a program that is defined as **DYNAMIC(YES)** and you have provided a SYSID.

Using the "Summarized active target region distribution trends" view with the "Active workload target distribution factors" view can help you understand WLM routing decisions and behavior of CICSPlex SM. You might want to understand why some regions are receiving more work than others, and an analysis of Route Selections shows which regions are receiving more work than others.

Figure 21 on page 159 illustrates the route field processes involved in distributed routing.

![Diagram of route field processes](image)

**Figure 21. Conceptual view of distributed routing**

Figure 22 on page 160 illustrates the route field processes involved in dynamic routing.
Requesting/Routing Region (TOR)  Target Region (AOR)

Figure 22. Conceptual view of dynamic routing

These definitions describe the route fields:

**Route select**
Route select is updated when this region is selected as a target by CICSPlex SM workload management.

**Route initiate**
Route initiate is updated when a task routed using the distributed workload model starts on a target system.

**Route error**
Route error is updated when the region selected by CICSPlex SM is unreachable; for example, the connection is out of service, or no sessions are available. CICSPlex SM then attempts to select another region. This reselection is not counted as a Route select, and the Route select count for any subsequent region is not updated. A high number of route errors can indicate that there are insufficient sessions to run the workload. The lack of sessions can cause increased response time and CPU time because CICSPlex SM must try the routing again, potentially several times.

**Route complete**
Route complete is updated when a task that is routed using the distributed workload model starts on the target system. Route complete indicates to the routing system that its responsibility for this task is complete.

**Route notify**
Route notify is updated when a task is routed to a target region that is selected by the SYSID option on the LINK or START command. Route notify informs CICSPlex SM of the routing; CICSPlex SM does not choose the region. Route notify is a variant of static routing, in which the program or transaction is defined as Dynamic, but the API that calls it specifies a SYSID.

**Route abend**
Route abend is updated when a task is routed to a target region and subsequently abends; for example, because the transaction is not defined in that system or the program is unavailable.

**Route terminate**
Route terminate is updated when a task has completed in a target region, whether at the end of a distributed program link (DPL) or a dynamic transaction routing (DTR) request, or when a task that is routed using the distributed workload model finishes.
Managing workloads

CICSPlex SM workload management optimizes processor capacity in your enterprise. Workload management achieves this by dynamically routing transactions and programs to whichever CICS region is the most appropriate at the time, taking into account any transaction affinities that exist.

When you have identified your workload management requirements, define them to CICSPlex SM as described in Configuring workload management.

What is workload management?
The workload management (WLM) function provides the capability to control where your work requests are run, in order to optimize performance and workload throughput. WLM uses the CICSPlex SM dynamic routing program EYU9XLOP to route work requests to the most suitable target region from a predefined set of target regions.

In a CICSpex or BTS-set, resources such as transactions and programs required in one region may be owned by another. For example, you may have a terminal-owning region (TOR) that requires access to transactions owned by an application-owning region (AOR).

You can specify the location of a resource when you are designing your system. Then, requests of a specific resource are always routed to the same region. Typically, the location of the resource is specified in the installed resource definition. This is known as static routing.

With dynamic routing, the decision on where to run a piece of work is made by the user-replaceable dynamic routing program (called the dynamic transaction routing program in previous releases). The user-replaceable program EYU9XLOP creates the environment necessary for CICSPlex SM dynamic routing, and sets up the runtime environment.

The CICSPlex SM dynamic routing program supports:

- Workload separation
- Workload routing
- Inter-transaction affinity

The dynamic routing program can route:

- Transactions initiated at a terminal
- Eligible EXEC CICS START requests that are associated with a terminal
- Eligible EXEC CICS START requests that are not associated with a terminal
- Dynamic program link (DPL) requests that are received using:
  - The CICS Web Interface
  - CICS Transaction Gateway
  - External CICS interface (EXCI) client programs
  - Any CICS client workstation products using the External Call Interface (ECI)
  - Open Network Computing (ONC) RPCs
  - The Link3270 bridge
  - Any function that issues an EXEC CICS LINK PROGRAM request
- CICS business transaction services (BTS) processes and activities

In CICSPlex SM, dynamic routing is managed by the Workload Manager component of CICSPlex SM. The CICS regions involved in dynamic routing may act as one or more of the following:

Requesting region
  The CICS region in which the work request originates.

Routing region
  The CICS region in which the decision is taken on where the work will run.
Target region
The CICS region where the request is actioned.

For dynamic transaction routing, the requesting region and the routing region are typically TORs, and the target region is typically an AOR.

For inbound DPL client requests, the requesting region and the routing region are typically TORs, and the target region is typically an AOR.

For EXEC CICS START commands associated with a terminal, the requesting region is typically an AOR, the routing region is typically a TOR, and the target region is typically an AOR.

For peer-to-peer DPL requests, for EXEC CICS START commands that are not associated with a terminal, for CICS business transaction services processes and activities, and for Link3270 bridge requests, the requesting region, routing region, and target region are typically AORs.

Advantages of WLM
The WLM function in CICSPlex SM is of particular benefit in those enterprises that are running CICS on Parallel Transaction Servers (PTSs), because CICSPlex SM can route work throughout the sysplex.

With WLM in your enterprise, you have:

- The ability to route all types of program link request dynamically to improve the performance and reliability of inbound client and peer-to-peer DPLs.
- The ability to route EXEC CICS START TRANSID TERMID commands dynamically to improve the performance and reliability of the applications using these commands.
- The ability to integrate workload routing for terminal-initiated transactions, non-terminal-initiated transactions, EXCI clients, CICS clients, CICS web support, CICS Transaction Gateway, and started tasks.
- The ability to integrate BTS processes and activities fully into the workload separation and workload routing functions.
- The ability to integrate enterprise bean invocations into the workload routing and workload separation functions.
- The ability to perform workload routing and separation for Link3270 bridge requests.
- Optimum performance and response times for a variable and unpredictable workload.
- Work routed away from a failing target region to an active target region.
- Opportunities for increased throughput and improved performance.
- Reduced risk of bottlenecks
- Individual target regions taken out of service without impact to the end-user.
- Less operator intervention.

For full details, see Configuring workload management.

Dynamic routing models
You can implement dynamic routing using one of two possible models: the hub model, in which routing is controlled by a single routing region; and the distributed model, in which every CICS region can operate as a routing region.

The traditional hub model
The traditional hub model is the model used for the dynamic routing of transactions, EXEC CICS START commands associated with a terminal, and inbound client DPL requests. The request is initiated in the requesting region, typically a TOR, which also acts as the routing region. The request is routed to a target region, selected from the specified target group, where the program is executed.

The traditional hub model is shown in Figure 23 on page 163.

The “hub” model is hierarchical, in which routing is controlled by one region (the routing region, that is, the TOR). Normally, a routing program runs only in the routing region. This model has the advantage of
being relatively simple to implement. For example, compared with the distributed model, there are few inter-region connections to maintain. The disadvantages of the hub model are:

- If you use only one hub to route transactions and program-link requests across your target regions, the hub routing region is a single point-of-failure.

- If you use more than one hub to route transactions and program-link requests across the same set of target regions, you may have problems with distributed data. For example, if the routing program keeps a count of routed transactions for load balancing purposes, each hub routing region will need access to this data, which may be maintained in a local temporary storage queue.

The distributed model

The distributed model is used for the dynamic routing of EXEC CICS START requests that are not related to a terminal, BTS activities, and Link3270 bridge requests. Each CICS system in the target group may act as a requesting region, routing region, and target region. A distributed routing program runs in each region.

The distributed model is shown in Figure 24 on page 164.
The advantage of the distributed model is that there is no single point of failure. The disadvantages are:

- Compared with the hub model, there are a great many inter-region connections to maintain.
- You may have problems with distributed data. For example, any data used to make routing decisions must be available to all regions. With CICSPlex SM, this problem is solved by the use of data spaces.
Workload routing

Workload routing is the directing of transactions or programs among a group of target regions according to the availability, health, and activity levels of those target regions. You can use workload routing in addition to, or in place of, workload separation.

CICSPlex SM can route a workload among a defined group of target regions by selecting, when each transaction is initiated, the target region that is likely to deliver the best performance.

Workload routing is statistical. CICSPlex SM uses one of the following four algorithms to determine which target region processes the work:

- Goal
- Queue
- Link neutral goal
- Link neutral queue

If any transaction affinities are outstanding for the transaction being routed, the affinity target region is selected, regardless of the algorithm used.

With the goal and link neutral goal algorithms, the appropriate target region is selected based on the ability of that region to achieve the expected response time. With the queue and link neutral queue algorithms, the appropriate target region is selected such that the load is distributed across a set of target regions.

If the goal or link neutral goal algorithm does not identify a specific target region, the queue or link neutral queue algorithm, respectively, is applied to the remaining set of target regions.

If all the available target regions are equally capable of handling the work, a target region is selected randomly from the group. Therefore, in systems that are lightly loaded, there is no predetermined order in which work is allocated to equally capable target regions.

The queue algorithm and the goal algorithm allow for the type of connection between a target region and its routing region. A weighting factor is allocated to each type of connection, such that links are put in the following order of priority:

- Local
- MRO/IRC and MRO/XM (local LPAR)
- MRO/XCF (remote LPAR)
- IPIC (local LPAR)
- IPIC (remote LPAR)
- LU6.2
- Indirect

CICSPlex SM uses the weighting factor of the link as a multiplier against the task load and other factors to determine an overall routing weight. At the end of the evaluation, the region with the lightest weight is usually selected as the target region.

For example, if all other factors are equal, a target region that is connected to its requesting region by using MRO/XCF is preferred to a target region that is connected by using IPIC. IPIC connections between routing and target regions in the same LPAR have a lower weighting than IPIC connections to target regions in a different LPAR, so that if other factors are equal, local IPIC connections are preferred to remote IPIC connections.

Control level for workload routing

To use workload routing, you must specify a default routing algorithm for the workload at the workload specification (WLMSPEC) level. You can optionally specify a routing algorithm at the transaction group (TRANGRP) level. An algorithm specified in a transaction group overrides the default algorithm that is associated with the workload specification.
The default routing algorithm is applied to every routed dynamic transaction in the workload, except those transactions that are associated with a transaction group that has a routing algorithm specified. You can specify one of the following routing algorithms:

- QUEUE
- LNQUEUE
- GOAL
- LNGOAL

To change the routing algorithm specified at the workload specification level, you must close down all regions that participate in the workload so that workload is refreshed with the new algorithm specification.

At the transaction group level, you can specify a routing algorithm dynamically. The specified dynamic routing algorithm is applied to every routed dynamic transaction that is associated with the transaction group. Therefore, you can apply an alternative routing algorithm to specific transaction codes in the same workload.

If you specify an alternative routing algorithm at the transaction group level, you can change workload routing characteristics for specific target regions dynamically without stopping your routing region. If you modify an installed transaction group, you must discard its associated WLM definition (WLMDEF) and then reinstall it, so that the transaction group named by the WLM definition is also refreshed. To change the routing algorithm type immediately without discarding and reinstalling the associated WLMDEF, you can use the Active workload transaction groups (WLMATGRP) views and the `SET` command to change the ALGTYPE attribute.

You can specify one of the following routing algorithms:

- INHERIT
- QUEUE
- LNQUEUE
- GOAL
- LNGOAL

INHERIT means that transaction group uses the routing algorithm that is associated with the workload specification for the workload.

**Link neutral workload routing**

In some situations, link weighting has a strong impact on the routing behavior and can prevent CICS transaction routing across system boundaries in a single-site parallel sysplex environment. To use workload routing without link weighting, you can use the link neutral goal and link neutral queue algorithms. These algorithms are identical to the goal and queue algorithms, respectively, except that the type of connection between the routing and target region is not considered.

Link neutral algorithms can be useful to route dynamic transactions, for example those that might require services from MVS subsystems. With queue and goal algorithms, routers focus dynamic traffic on the systems with the fastest links, which probably reside in the same LPAR. This behavior might overload subsystems in the local MVS image, and underuse the remote MVS images that participate in the workload. If you assign these transactions to a transaction group that uses a link neutral algorithm, the routed dynamic traffic is routed more evenly between the local and remote LPARs, and the load on those subsystems is spread.

However, remember that with a link neutral algorithm, if other factors are equal, all target regions have equal preference. The most remote target regions, connected with the slowest telecommunications links, might have equal preference with a locally connected MRO region, or the routing region itself if it is part of the routing target scope. Therefore, consider carefully whether to specify a link neutral algorithm at the workload specification (WLMSPEC) level, because it might affect every dynamically routed transaction. As a result, the workload manager might not select the best target region for dynamic routing traffic and the overall workload throughput might deteriorate.
If you require a link neutral algorithm for a specific transaction set, assign the algorithm to the workload management transaction group (TRANGRP) that identifies those transactions.

**The queue algorithm**
When CICSPlex SM uses the queue algorithm, if the transaction being routed has no active affinities, the load is distributed across a set of target regions. Selection criteria include the current task load, the health state, and the type of connection between the router and the target region.

If the transaction being routed has no active affinities, the queue algorithm causes CICSPlex SM to select the target region that conforms to the following set of criteria:

- The region has the shortest queue of work waiting to be processed, relative to the maximum number of tasks permitted in the target region. This queue of work, also called the load count, is the count of all active and queued user tasks. By default, tasks queued for both MAXTASKS and TRANCLASS attributes are included in the load count. Use of the "Task load queue mode" attribute in the CSYSDEF resource table allows sites to exclude tasks queued for the TRANCLASS attribute from the load count. For more information about the "Task load queue mode" attribute in the CSYSDEF resource table, see CICS system definitions - CSYSDEF.
- The region is the least affected by conditions such as short-on-storage, SYSDUMP, and TRANDUMP.
- The region is the shortest path for interregion communication.
- The region has a z/OS WLM health value in the range 1-100.

The queue algorithm maximizes work throughput and standardizes response times across the CICSplex. This algorithm is very robust; it can accommodate differences in processor power, different maximum task values in the target regions, asymmetric target region configurations, and an unpredictable workload.

**The link neutral queue algorithm**
The link neutral queue (LNQUEUE) algorithm corresponds to the queue algorithm, except that the type of connection between the routing and target region is not considered.

If a transaction being routed has no active affinities, the link neutral queue algorithm causes CICSPlex SM to select the target region that conforms to the following set of criteria:

- The region has the shortest queue of work waiting to be processed, relative to the maximum number of tasks permitted in the target region. This queue of work, also called the load count, is the count of all active and queued user tasks. By default, tasks queued for both MAXTASKS and TRANCLASS attributes are included in the load count. Use of the "Task load queue mode" attribute in the CSYSDEF resource table allows sites to exclude tasks queued for the TRANCLASS attribute from the load count. For more information about the "Task load queue mode" attribute in the CSYSDEF resource table, see CICS system definitions - CSYSDEF.
- The region is the least affected by conditions such as short-on-storage, SYSDUMP, and TRANDUMP.
- The region is the least likely to cause the transaction to stop.
- The region has a z/OS WLM health value in the range 1-100.

The link neutral queue algorithm provides efficient work throughput and response times across the CICSplex. Similarly to the queue algorithm, this algorithm can accommodate differences in processor power and different maximum task values in the target regions. However, it does not allow for communications link speeds between the router and a target. Compared to the queue algorithm, this algorithm might spread a workload across a target scope more evenly, but the workload might not complete as quickly.

**The goal algorithm**
The Goal algorithm may be used when dynamic routing decisions are primarily concerned with the ability of a region to achieve response time targets.

Goal mode routing should only be employed where routers and targets are managed by the same CMAS in the following scenarios:

- Dynamic routing using DTRPGM for dynamic transactions.
• Dynamic routing using DTRPGM for EXEC CICS START TERMID over APPC or MRO connections.
• Distributed routing using DSRTPGM for business transaction service routing.

In any other dynamic routing scenario, the QUEUE or LNQUEUE algorithms should be used.

If a transaction being routed has no active affinities then the goal algorithm causes CICSPlex SM to select the target region that conforms to the following set of criteria:

• Is the least affected by conditions such as short-on-storage, SYSDUMP, and TRANDUMP.
• Is the least likely to cause the transaction to stop.
• Is the most likely to meet the transaction response-time goals (either average or percentile) set for it (and for other transactions in its class) using the Workload Manager component of z/OS.
• Is the shortest path for interregion communication.
• Is the AOR with the shortest queue of transactions, relative to MAXTASK, waiting to be processed.
• Has a z/OS WLM health value in the range 1 - 100.

The link neutral goal algorithm

The link neutral goal (LNGOAL) algorithm corresponds to the goal algorithm, except that the type of connection between the routing and target region is not considered.

If a transaction being routed has no active affinities, the link neutral goal algorithm causes CICSPlex SM to select the target region that conforms to the following set of criteria:

• The region is the least affected by conditions such as short-on-storage, SYSDUMP, and TRANDUMP.
• The region is the least likely to cause the transaction to stop.
• The region is the most likely to meet the transaction response-time goals, either average or percentile, set for it (and for other transactions in its class) using the Workload Manager component of z/OS.
• The region is the AOR with the shortest queue of transactions, relative to MAXTASK, waiting to be processed.
• The region has a z/OS WLM health value in the range 1-100.

Effect of the z/OS WLM health service on CICSPlex SM workload routing

In a CICS region, if the z/OS Workload Manager (z/OS WLM) health service is active, CICSPlex SM WLM takes account of the region’s z/OS WLM health state in the routing decision.

Prerequisite:

For CICSPlex SM WLM to take into account the z/OS WLM health state of the target regions, the following conditions apply:

• Both the routing and target regions must be at a minimum of CICS TS V5.4 (CICS and CICSPlex SM libraries); otherwise, the z/OS WLM health state will be ignored, and the target regions are deemed as ready to receive work.
• The z/OS WLM health service must be enabled in the CICS region. It is enabled by default. If the service is disabled, the region is also deemed as ready to receive work. To activate this service, you must set the WLMHEALTH system initialization parameter.

How the z/OS WLM health state of CICS regions affects CICSPlex SM routing decisions

The z/OS WLM health state of a region is reflected by a z/OS WLM health value in the range 0 - 100. When deciding where to route work, CICSPlex SM WLM might assign an additional weight in the routing algorithm for the target region, based on its health value:

• If the target region has a z/OS WLM health value of zero, it is not eligible to receive work. CICSPlex SM WLM will not route work to this region. Any workload affinities that are associated with this region will remain and be honored; however, workload routing based on those affinities will fail while the health value is zero, and will result in either message EYUWR0003W or a SYSIDERR condition. Message EYUWR0003W indicates that the EYU9WRAM program was in effect and the affinity AOR was not.
available. To resolve such routing failures, initiate a warm-up for the region so that the health value is non-zero, and then rerun your workload. See Initiating a CICS system warm-up.

- For any target region with a health value between 1 and 99, CICSPlex SM WLM assigns an additional weight in the routing algorithm, based on the health value. The greater the health value, the lower the weight, which makes this region more favorable in the routing decision. Likewise, the lower the health value, the greater the weight, which reduces the chances of this region to receive more work. Note that a region that is assigned a high additional weight remains active and might still receive work if no other healthier regions are available in the same scope.
- When a target region has a health value of 100, no additional weight is assigned.

During the CICS warm-up or cool-down process, CICS adjusts the z/OS WLM health value of the region. As a result, this affects the routing decision of CICSPlex SM WLM, which restricts workload into the region during that process. In general, when a region is warming up, its health value increases periodically, and the region might gradually receive a larger workload; when a region is cooling down, its health value decreases periodically, and the region might gradually receive less work until it becomes ineligible as a target. For more information about what happens during CICS warm-up or cool-down, see CICS warm-up and cool-down by use of z/OS Workload Manager health service.

Making a region ineligible as a workload routing target

You can deliberately make a region ineligible as a workload routing target in CICSPlex SM routing decisions by setting its z/OS WLM health open status to CLOSE in the MVS workload management (MVSWLM) view. This will gradually make the region less favorable until the region's z/OS WLM health value drops to 0, indicating that the region becomes ineligible. Additionally, you can change a region's z/OS WLM health value to zero immediately, by setting its z/OS WLM health open status to IMMCLOSE.

Workload separation

Workload separation routes work from a requesting or routing region among a set of target regions, but the requirements of users, terminals, the transactions themselves, and their BTS process type, can influence which target region set is used.

The routing of particular transactions or programs to a particular group of target regions is based on any combination either of user ID, terminal ID, and transaction group. For BTS processes, routing is based on a combination of transaction group and process type. For enterprise bean-related transactions, routing is based on transaction group. For Link3270 bridge requests, separating by terminal luname is subject to some restrictions. See Separating Link3270 bridge workloads for more information.

For example, you can specify that:

- Any transaction initiated by users whose user IDs begin with the characters "PAY" must be routed to a target region in CICS system group AORPAY1.
- Any transaction initiated from a terminal whose LU name begins with the characters "NYORK" must be routed to a target region in CICS system group AORNWYK.
- Any transaction belonging to the transaction group ACCOUNTS must be routed to a target region in CICS system group AORACCNT.
- All processes associated with a BTS process type TRAVEL are routed to a target region in one BTS-set, and all processes associated with BTS process-type PAYROLL are routed to another BTS-set.
- All enterprise bean-related transactions belonging to transaction group STOCK are routed to any target region in CICS system group STOCKTG, if the user id matches that in the workload definition.

The decision as to which region is selected from the group of target regions that meet the workload separation criteria is based on the same routing criteria as described in "Workload routing" on page 165. The algorithm that is applied when making the routing decision can either be specified at the individual workload separation level or can be left to default to the algorithm used by basic workload routing.

Inter-transaction affinity

An inter-transaction affinity is a relationship between transactions, of a specified duration, that requires them to be processed by the same target region. For example, you might have a pseudoconversation made up of three separate transactions, and each transaction passes data to the next transaction in the
sequence via a temporary storage queue (which may be shared in the distributed model). You would then specify that all three transactions must be processed by the same target region, and that this affinity lasts for the duration of the pseudoconversation.

(If you did not define this affinity to CICSPlex SM, each transaction could be routed to a different target region and would therefore be unable to access temporary-storage data left by the previous transaction.) The target region itself is selected by CICSPlex SM from the specified target scope.

Workload management and the IBM CICS Interdependency Analyzer for z/OS understand affinities between BTS processes and activities. BTS itself does not introduce affinities, and discourages programming techniques that do, but it does handle existing code that may introduce affinities. You should define such affinities to workload management, so that it can make sensible routing decisions. It is particularly important to specify each affinity’s lifetime; failure to do so may restrict unnecessarily workload management’s routing options.

Workload management and the IBM CICS Interdependency Analyzer for z/OS do not understand affinities between routable non-terminal-related EXEC CICS START commands, or between DPLs not associated with a user id or a terminal. You should take steps either to remove any affinities from your applications, or to ensure that your applications honor any affinities.

Note that, if data is passed between transactions via the COMMAREA on the EXEC CICS RETURN command, no such affinity exists: the COMMAREA is passed back to the requesting region, and so can be passed to the target selected to process the next transaction in the sequence.

How inter-transaction affinities are honored
When the first transaction from a group of related transactions is started, CICSPlex SM selects an appropriate region from the specified target scope.

If there is more than one suitable region in the target scope, CICSPlex SM selects one using the current workload routing algorithm. Subsequent transactions in the same group that meet the affinity criteria are directed to the same region as the first transaction. If subsequent transactions do not meet the affinity criteria (for example, if the same pseudoconversation is started from a different user ID), the selection process for a suitable region starts again.

Factors that contribute to dynamic workload routing decisions
CICSPlex SM workload routing makes a routing decision based on a combination of factors.

The following factors are taken into consideration in the routing decisions:

The number of tasks in the region
Factored as a percentile value, calculated by dividing the target region MAXTASKS setting with the current task count.

The health status of the region
Factored by assigning arithmetic weights, depending on whether the region is short-on-storage, taking a transaction dump, taking a system dump, running at its MAXTASKS limit, in a non-responsive state, or in a CICSPlex SM stall.

Note: Health is assessed independently of system availability monitoring (SAM) and is not influenced by SAM settings.

The speed of the link between the router and the target
Factored by assigning arithmetic weights, depending on whether the target region is linked to the target by an MRO connection, an XCF connection, an LU6.2 connection, an IPIC connection, or if the target region is the router itself.

Note: The link speed is not used for link-neutral algorithms.

The z/OS WLM health state of the region
Factored by assigning additional weights, depending on the z/OS WLM health value (in the range 0 - 100) of a region provided by the z/OS WLM health service. The z/OS WLM health state is factored in only when the z/OS WLM health service is on.
• A region with a health value of zero is not eligible to receive work. Any workload affinities that are associated with this region will remain and be honored; however, workload routing based on those affinities will fail while the health value is zero, and will result in either message EYUWR0003W or a SYSIDERR condition. Message EYUWR0003W indicates that the EYU9WRAM program was in effect and the affinity AOR was not available. To resolve such routing failures, initiate a warm-up for the region so that the health value is non-zero, and then rerun your workload. See Initiating a CICS system warm-up.

• A region with a health value of 100 is not assigned with additional weight and is fully capable of receiving work.

• For any target region with a health value between 1 and 99, CICSPlex SM WLM assigns an additional weight in the routing algorithm, based on the health value. The greater the health value, the lower the weight, which makes this region more favorable in the routing decision. Likewise, the lower the health value, the greater the weight, which reduces the chances of this region to receive more work. Note that a region that is assigned a high additional weight remains active and might still receive work if no other healthier regions are available in the same scope.

### Outstanding CICSPlex SM Realtime Analysis (RTA) Events associated with the workload, if any

Factored by assigning arithmetic weights depending on the severity of the events outstanding. These events are factored in only when Event name is specified in the WLM specification for the workload or any Transaction Group definitions associated with it.

### Any transaction affinities, if any, that are outstanding to override the dynamic routing decision

Regardless of any other factors, if the routing request has an outstanding affinity associated with it, that affinity always overrides the route decision.

### Workload management resources

You can set up and manage your workload environment using the workload management WUI view sets and resource objects.

<table>
<thead>
<tr>
<th>WUI view set</th>
<th>Object name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transactions in transaction groups</td>
<td>DTRINGRP</td>
<td>This object displays information about the transactions associated with one or more transaction groups.</td>
</tr>
<tr>
<td>WLM specifications to system group links</td>
<td>LNKSWSCG</td>
<td>CICS system groups associated with workload specifications</td>
</tr>
<tr>
<td>WLM specifications to CICS system links</td>
<td>LNKSWSCS</td>
<td>CICS systems associated with workload specifications</td>
</tr>
<tr>
<td>Transaction groups</td>
<td>TRANGRP</td>
<td>A transaction group is an association of logically similar transactions. The similarity may be based on affinity requirements, common shared processing requirements, or any other user-determined characteristics. The transaction group is included as part of the workload definition, which in turn defines the CICS system group to be used as the target region. Any transaction that is not specifically associated with a transaction group is assigned to the default transaction group.</td>
</tr>
<tr>
<td>Active workload transaction group affinities</td>
<td>WLMATAFF</td>
<td>This object shows information about the active affinities for a transaction group associated with a workload within the CICSPlex identified as the context. An affinity becomes active when the first transaction associated with the transaction group is dynamically routed to a target region.</td>
</tr>
</tbody>
</table>
Table 13. WUI view sets and resource objects for managing workloads (continued)

<table>
<thead>
<tr>
<th>WUI view set</th>
<th>Object name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active workload transaction groups</td>
<td>WLMATGRP</td>
<td>This object shows information about transaction groups associated with a workload that is within the CICSpex identified as the context.</td>
</tr>
<tr>
<td>Active workload dynamic transactions</td>
<td>WLMATRAN</td>
<td>This object shows information about all active transactions associated with a workload that is within the CICSpex identified as the context.</td>
</tr>
<tr>
<td>Active workload target distribution factors</td>
<td>WLMAWAOR</td>
<td>This object shows information about all target regions that are associated with a workload that is within the CICSpex identified as the context.</td>
</tr>
<tr>
<td>Active workload definitions</td>
<td>WLMAWDEF</td>
<td>This object shows information about active workload definitions associated with a workload that is within the CICSpex identified as the context.</td>
</tr>
<tr>
<td>Active workloads</td>
<td>WLMAWORK</td>
<td>This object shows information about active workloads within the CICSpex identified as the context. A workload is active within a CICSpex as long as:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• A CICS system that is acting as a routing region or target region, and is participating in the workload, is connected to that CICSpex.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Any transaction causes an affinity lifetime of PERMANENT to be established.</td>
</tr>
<tr>
<td>Routing regions in an active workload</td>
<td>WLMAWTOR</td>
<td>This object shows information about routing regions that are associated with a workload that is within the CICSpex identified as the context.</td>
</tr>
<tr>
<td>Workload definitions</td>
<td>WLMDEF</td>
<td>This object identifies which transactions are to be routed to which CICS system group. You identify the transactions by transaction group, and within the group either by LU name and user id, or by process type.</td>
</tr>
<tr>
<td>Workload groups</td>
<td>WLMGROUP</td>
<td>This object is used to associate one or more workload definitions.</td>
</tr>
<tr>
<td>Workload definitions in groups</td>
<td>WLMINGRP</td>
<td>This object displays the names of workload groups and the workload definitions associated with them.</td>
</tr>
<tr>
<td>Workload groups in workload specifications</td>
<td>WLMINSPC</td>
<td>This object displays the names of workload specifications and the workload groups associated with them.</td>
</tr>
<tr>
<td>Workload specifications</td>
<td>WLMSPEC</td>
<td>A workload specification identifies a workload and one or more CICS system groups acting as target regions. It also defines the attributes of the default transaction group.</td>
</tr>
</tbody>
</table>

The WLM object model is shown in Figure 25 on page 173. For each object, the name of the WUI view is followed by the resource name in parentheses.
Planning for WLM
This section provides some instructions to help you determine the extent to which you can use CICSp lex SM workload management in your enterprise.

Workload routing or workload separation?
Use workload routing wherever possible because it makes the best use of the available CICS systems, and provides opportunities for increased throughput and improved performance. Implement workload separation (by process type, user, terminal, and transaction) only where strictly necessary because it prevents full exploitation of CICSp lex SM workload routing functions.

If you have defined more than one CICSp lex, and have made the division to reflect use of CICS systems by different groups of users, for example, it is possible that you will be able to use simple workload
routing rather than workload separation in the CICSplex. For example, if you have separated the CICS systems used by group A from the CICS systems used by group B by defining two CICSplexes, you can implement workload routing in each CICSplex. If you have not taken this approach, you might consider it necessary to recognize such groupings by implementing workload separation.

There are two major activities in your planning for WLM:

- Identifying the workloads in your enterprise.
- Identifying inter-transaction affinities and trying to remove them.

**Identifying the workloads**

To plan for WLM, you shall begin by identifying the workloads processed in your enterprise. The workloads are certain to be apparent in any underlying TOR–AOR–FOR configurations. Next, confirm that the current CICSPlex SM configuration of CICS systems supports the identified workloads.

In particular:

- Routing regions and target regions from a single workload must be in the same CICSplex. That is, the supplied dynamic routing program cannot route transactions beyond the confines of the CICSplex. (It is possible to route transactions outside of the CICSplex by customizing the supplied dynamic routing program. Customization of the supplied dynamic routing program is described in Modifying dynamic routing.)
- A routing region must be:
  - a CICS TS region.
  - a local MAS, that is, the routing region cannot be running on an MVS image on which there is no CMAS.
  - in only one workload, that is, the routing region can be associated with only one active workload specification at a time.
- A target region can be:
  - a local MAS
  - in multiple workloads
  - any CICS system managed by CICSPlex SM

**Identifying inter-transaction affinities**

Inter-transaction affinities, which require related transactions to be processed by the same target region, prevent optimum workload distribution. In general, they arise either because of the way in which one transaction passes data to another, or because of a requirement to coordinate the processing of two or more transactions. Identifying affinities isn't always easy, but there are some methods you can use.

For example, you can review application design documentation or source code; you can run CICS traces; or you can use the IBM CICS Interdependency Analyzer for z/OS.

Having identified any affinities in a workload, you should make every attempt to remove them. If you cannot remove them completely, gauge the duration of the affinity and try to minimize it. You can define an inter-transaction affinity to CICSPlex SM as lasting:

- While the user's session is active
- For the duration of the terminal session
- While the target region remains active
- While the workload is active
- For the duration of a pseudoconversation
- While the BTS activity is active
- While the BTS process is active

Be aware that CICSPlex SM must honor an active affinity: if an affinity is active but the target region becomes unavailable, the transaction isn't routed. In the case of a BTS transaction, BTS will wait for the region to start.
Implementing WLM

What you have to do to use CICSPlex SM workload management functions varies depending on whether you want to implement workload routing only, or whether you also want to implement some workload separation, and possibly define one or more transaction affinities in the same CICSpex.

You will get the best results if you follow this process:

1. Identify candidates for dynamic routing
2. Implement workload routing for each workload in the CICSpex where dynamic routing is possible.
3. Add any necessary workload separation requirements.
4. Define any inter-transaction affinities.

Each step is described in the remainder of this section.

Identifying dynamic routing candidates

Not all work requests are candidates for dynamic routing. The conditions that have to apply for a work request to be eligible are listed in Dynamic Routing.

For further details:
• See EXEC CICS LINK and EXEC CICS START commands.
• See EXEC CICS RUN ASYNCHRONOUS command.
• See Resource definitions and Administering BAS for information about CICS and CICSpex SM resources.
• See Deploying applications to a JVM server for information about Java™.
• See Overview of CICS external interfaces for more information about the Link3270 bridge.

Implementing workload routing

To implement workload routing for a group of target regions, you must associate a routing region or a routing system group with a workload specification. Optionally, you can apply alternative routing to a specified group of transaction in the workload.

About this task

To use workload routing, you specify routing characteristics in the workload specification (WLMSPEC object). These characteristics apply to all of the transactions in the workload.

However, you can override these routing characteristics by supplying associated pairs of WLM definitions and transaction group definitions (WLMDEF and TRANGRP objects) that specify a specialized routing evaluation to be applied to one or more transactions. For workload routing, you specify a different routing algorithm in a transaction group definition. If you specify an alternative routing algorithm at the transaction group level, you can change workload routing characteristics dynamically without stopping routing regions.

Procedure

1. If there is more than one routing region in a single workload, create a CICS system group of those routing regions, using the CICS system group (CSYSGRP) object.
2. Create a CICS system group of the target regions to which the routing regions can route transactions, again using CSYSGRP.
   This group could include every CICS system in the CICSpex.
3. Create one workload specification for each workload in the CICSpex, using the workload management specification (WLMSPEC) object.
   In the workload specification:
   a) Specify the name of the target system group as the target scope value.
   b) Identify which routing algorithm to use for workload routing.
      You can use one of the following algorithms:
4. Associate the routing region, or the routing system group, with the workload specification.

You can have multiple workloads in a single CICSpinx, but a routing region or group of routing regions can belong to only one active workload specification at a time.

5. Optional: Override the routing algorithm for specific transactions in the workload by specifying a different routing algorithm in a transaction group definition.

See Creating a transaction group.

If you modify an installed transaction group, you must discard its associated WLM definition (WLMDEF) and then reinstall it, so that the transaction group named by the WLM definition is also refreshed. To change the routing algorithm type immediately without discarding and reinstalling the associated WLMDEF, you can use the Active workload transaction groups (WLMATGRP) views and the SET command to change the ALGTYPE attribute.

Adding workload separation requirements

To implement workload separation in the same workload, by any combination either of user id, terminal id, and transaction group, or of process type and transaction group, do the following:

1. Create a CICS system group for each set of target regions, using the System group definitions view (CSYSGRP object). For example, if:
   - Transactions initiated by users ABC* from terminals NETA* must be routed to target regions 2 through 7
   and
   - Transactions initiated by users HIJ* from any terminal must be routed to target regions 5 through 9
two target system groups must be defined: one group includes target regions 2 through 7, and one group includes target regions 5 through 9.

2. Define a transaction group, using the Transaction groups view (TRANGRP object), if workload separation by transaction is to be implemented. For example, if transactions EFG1, EFG2, and EFG3 must be routed to a specific group of target regions, you must define a transaction group to include those transactions.

3. Create one workload definition, using the Workload definitions view (WLMDEF object), for each user, terminal, and transaction group combination. For the example in item “1” on page 176 (above):
   - One workload definition would be required for the combination of any transaction, users ABC*, and terminals NETA*.
   - One workload definition would be required for the combination of any transaction, users HIJ*, and any terminal.

A third workload definition would be required to support the workload separation by transaction described in item “2” on page 176. In each workload definition, include the name of the appropriate target region system group to which eligible transactions are to be routed.

4. If the workload definitions are to be installed automatically when the first requesting region in the workload starts, you should use the Workload groups view (WLMGROUP object) to:
   a. Create a workload group.
   b. Add the workload definitions to the workload group.
   c. Associate the workload group with the workload specification.
Automatic installation of the workload definitions is likely to be required, because workload separation is usually a regular and consistent requirement. However, you can also install a workload group or individual workload definitions manually for immediate effect.

**Defining inter-transaction affinities**

If there is a requirement for multiple transactions in the workload to be processed by the same target region, then do the following:

1. Create a transaction group, using the **Transaction groups** view (TRANGRP object), for each set of transactions within the workload that share an affinity. For example, if transactions MNO1, MNO2, and MNO3 must be processed by the same target region (perhaps because they run in sequence and leave data for the next transaction), define a transaction group to include those three transactions specifying the affinity type and its duration.

2. If you want to implement workload separation, create a workload definition for each transaction group and user or terminal pattern, using the **Workload definitions** view (WLMDEF object). For example, if the inter-transaction affinity described in item “1” on page 177 (above) applies to any user from terminals NYORK*, the workload definition must include that information. In addition, the workload definition identifies the set of target regions from which CICSPlex SM can select one. This could be every target region in the CICSPlex, or some subset of target regions.

   Note that you can define an inter-transaction affinity to CICSPlex SM without also implementing workload separation. In this case, no workload definition is required and CICSPlex SM routes the first transaction in the group to a suitable target region from the set identified in the workload specification. Subsequent transactions in the transaction group are routed to the same target region while the affinity is active.

3. If the workload definitions are to be installed automatically when the first routing region in the workload starts, you should use the **Workload groups** view (WLMGROUP object) to:
   
   a. Create a workload group.
   
   b. Add the workload definitions to the workload group.
   
   c. Associate the workload group with the workload specification.

   You can also install a workload group or individual workload definitions manually for immediate effect.

**Note:** It’s important that you define routing regions and target regions in groups, to ensure that changes to the composition of those groups are automatically reflected in CICSPlex SM workload management.

**A recommended approach**

You can click the **Map** button to display a visual map of the WLM definitions in your data repository. When you decide to implement WLM functions in your enterprise, you should begin by defining the appropriate objects.

You should:

- Use the **WLM definitions** view to create a workload definition (WLMDEF object).
- Use the **WLM groups** view to create a workload group (WLMGROUP object).
- Use the **WLM specifications** view to create a workload specification (WLMSPEC object).

Then, to create associations between these objects:

- Use the **WLM definitions** view to add the workload definition to the workload group (WLMINGRP object).
- Use the **Workload groups** view to add the workload group to the workload specification (WLMINSPC object).
- Use the **Workload specifications** view to associate the workload specification with a CICS system (LNKSWSCS object) or CICS system group (LNKSWSCG object). For more information about the LNKsxSCG parameters, see LNKsxSCG Records (LNKSMSCG, LNKSRSCG, LNKSWSCG).

If you want to see a list of the objects and associations you have already defined, use one of the following views:
Example CICSPlex SM workload management tasks

All the workload management examples are based on the same configuration. The CICSpool, PLXPROD1 consists of one TOR, CICSPT01, and three AORs, CICSPA01, CICSPA02, and CICSPA03. You will see how the roles played by these CICS regions vary, depending on the nature of the individual task.

These sections include a number of typical workload management example tasks and illustrates how these tasks can be carried out using the Web User Interface (WUI).

For any task, you must be aware of the scope, that is, of the CICS systems, with which you are working. If the scope is a single CICS system, any data you retrieve from CICSpool SM relates to that single system. If the scope is a group of CICS systems, the data relates to all of the systems in the group. If the scope is a CICSpool, the data relates to every system in that CICSpool. For all of the examples in these sections, the initial scope is CICSpool PLXPROD1.

Before you begin

To support optimized workload management, a CICS region status server must be set up and running in the CICSpool to share CICS region status data rapidly. For detailed instructions, see Setting up and running a region status server.

Managing a workload

This example describes how to use the Web User Interface (WUI) to get CICSpool SM to manage a workload: that is, to route all work from a single routing region to a suitable target region.

For this task, a "suitable" target region is the one with the shortest queue of work requests, relative to the maximum number of tasks permitted in the target region. This queue of work, also called the load count, is the queue of all active and queued user tasks. By default, tasks queued for both MAXTASKS and TRANCLASS are included in the load count. Use of the "Task load queue mode" attribute in the CSYSDEF resource table allows sites to exclude tasks queued for TRANCLASS from the load count. For more information about the "Task load queue mode" attribute in the CSYSDEF resource table, see .

The TOR (CICSPT01) is the requesting region and the routing region, and the three AORs (CICSPA01, CICSPA02, and CICSPA03) are all target regions. None of the CICS regions are currently running.

If some of your work requests can't be routed freely (perhaps you want work requests from a particular user always to go to the same target region, for example), don't worry. You'll see how to add that requirement in a later example task ("Routing a specific transaction to a specific target region" on page 182).

1. Create a CICS system group that will include all of the target regions among which the work requests ("the workload") can be routed dynamically.
   • From the main menu, click Administration > Topology administration > System groups to open the System group definitions tabular view.
     If the current context is not PLXPROD1, specify PLXPROD1 in the Context field and click Refresh.
   • Click Create to open the System group definitions create view.
   • Type the following:
     System group name    CSGTGS1
     Description           All target regions in CICSpool PLXPROD1
   • Click Yes to create the system group
The **System group definitions** tabular view is redisplayed, this time showing an entry for CICS system group CSGTGTS1.

At this point, the group CSGTGTS1 exists, but is empty.

2. Specify to CICSPlex SM which target regions belong to the group. To add target regions to CICS system group CSGTGTS1:

   - From the main menu click **Administration > Topology administration > System definitions** to open the **CICS system definitions** tabular view.
   - Select the entries for the CICS systems CICSPA01, CICSPA02 and CICSPA03 and click **Add to CICS system group**.
   - In the **Group which member will join** field, type CSGTGTS1 and click **Yes to 3 remaining**. This adds the three selected systems to your new group.

3. Create a workload specification:

   - From the main menu click **Administration > Workload manager administration > Specifications** to open the **WLM specifications** tabular view.
   - Click **Create**, and type the following information:

```
WLM specification name       WLSPAY01
Description                  Manage payroll workload in PLXPROD1
Primary search criterion     USERID
Default target scope         CSGTGTS1
Algorithm type               QUEUE
```

Leave the remaining fields empty or accept the defaults.

**Note:**

- A **Primary search criterion** value of USERID is shown in this example, though in fact it does not matter whether you specify USERID or LUNAME, because the **Primary search criterion** value has no effect on simple workload searching. It is used only for some kinds of workload separation, which is the subject of a later example. You must supply a value because CICSPlex SM doesn’t know, at this stage, that you aren’t going to use this workload specification for workload separation.

- The **Default target scope** value is the name of the single target region, or group of target regions, to which work requests can be routed.

- The **Algorithm type** value, QUEUE, tells CICSPlex SM to select the target region that has the shortest queue of work requests.

- The **Description** is optional, but is worth providing. (When you are confronted with a list of specification names, and have no way of telling one from another, you will appreciate its value.)

Click **Yes**. The **WLM specification** tabular view is redisplayed, this time showing an entry for the new WLM Specification, WLSPAY01.

4. Tell CICSPlex SM about the region that is going to be routing the work requests to the target regions in group CSGTGTS1. To associate the workload specification with a routing region:

   - In the **WLM specifications** view, select the entry for the WLSPAY01 specification, and click **Associate CICS system**.
   - In the **CICS system** field, enter the name of the routing region (CICSPT01, in this example) and click **Yes**.

To check that the association between the routing region and the workload specification has worked:

- On the **WLM specifications** tabular view, click the name **WLSPAY01** to show the details of this specification.
• Click the link **CICS systems associated with this workload specification** to show the WLM specifications to CICS system links tabular view (LNKSWSCS object).

**Note:** You can also access this view from the main menu by clicking **Administration > Workload manager administration > Specifications to system links.**

5. Activate workload management in the routing region:

- From the main menu click **Administration > Topology administration > System definitions** to open the **CICS system definitions** tabular view.
- Select the entry for CICSPT01 and click **Update**, to open a detail view of CICSPT01.
- Change the **AOR dynamic routing mode** field to **YES**. Click **Yes** to return to the **CICS system definition** tabular view.

This change takes effect when the target region CICSPT01 is next started.

6. Activate workload management in the target regions:

- From the **CICS system definitions** tabular view, select the entry for CICSPA01 and click **Update** to open a detail view of CICSPA01.
- Change the **Workload manager status** field to **YES**. Click **Yes** to return to the **CICS system definitions** tabular view.

This change takes effect when the target region CICSPT01 is next started.

Repeat this step for target regions CICSPA02 and CICSPA03.

When the routing region and the target regions have been started, you can check that the workload is active from the main menu by clicking **Active workloads (WLM) > Active workloads**. This opens the **Active workloads** tabular view, showing the workload specification WLSPAY01 as active.

To see which target regions are being routed to, click **Active workloads (WLM) > Active workload target distribution factors**. The displayed view shows all active target regions being routed to by workload WLSPAY01. All of the target regions listed belong to the CICS system group CSGTGTS1.

**Adding a region to an existing target region scope**

This example describes how to use the Web User Interface (WUI) to increase the number of regions in an existing target scope without disrupting an existing workload.

Assume that you have implemented workload routing in CICSplex PLXPROD1, via workload specification WLSPAY01, and that work requests are being routed among target regions CICSPA01, CICSPA02, and CICSPA03. These target regions all belong to CICS system group CSGTGTS1. Now you want to add a fourth region CICSPA04 to group CSGTGTS1. Region CICSPA04 has been defined to CICSplex PLXPROD1 and is running and is linked to the routing region CICSPT01.

1. Add target region CICSPA04 to CICS system group CSGTGTS1:

   a. From the Web User Interface main menu click **Administration > Topology administration > System definitions** to open the **CICS system definitions** tabular view.

      If the current context is not PLXPROD1, specify PLXPROD1 in the **Context** field and click **Refresh**.

   b. Select the entry for CICSPA04, and click the **Add to CICS system group** button. The **Add to CICS system group** view is displayed.

   c. In the **Group which member will join** field, enter the name CSGTGTS1 and click **Yes**.

2. Update the CICSplex SM definition of target region CICSPA04:

   a. From the **CICS system definitions** tabular view, select the entry for CICSPA04 and click **Update**.

   b. Change the **Workload manager status** field to **YES** from the menu. Click **Yes** to confirm the update.

   This change takes effect when the target region CICSPA04 is next started.

When the target region CICSPA04 has been started, you can check that the workload is active by clicking **Active workloads (WLM) > Active workload target distribution factors**. This opens the **Active workload
Removing a region from a target region scope
CICS system group CSGTGTS1 contains four target regions (CICSPA01, CICSPA02, CICSPA03, and CICSPA04) in CICSpex PLXPROD1. Work requests are routed among these target regions, and the routing is controlled by workload specification WLSPAY01.

This example describes how to use the Web User Interface (WUI) to remove region CICSPA04 from the group CSGTGTS1, without disrupting the active workload.

1. Remove target region CICSPA04 from CICS system group CSGTGTS1:
   • From the Web User Interface main menu click Administration > Topology administration > System groups to open the System group definitions tabular view.
     If the current context is not PLXPROD1, specify PLXPROD1 in the Context field and click Refresh.
   • Click CSGTGTS1 in the System group name field to open a detail view and click the CICS systems in this CICS system group link. This opens the CICS system to CICS system group links tabular view.
   • Click the Record check box beside the entry for CICSPA04 and click the Remove... button. This opens the Remove confirmation view.
   • Click Yes to confirm the update.

2. To check that CICSPA04 has been removed, from the main menu click Active workloads (WLM) > Active workload target distribution factors. This opens the Active workload target distribution factors view showing all target regions to which the workload can be routed. CICSPA04 should not appear in the list.

Adding a routing region to an active workload
Use the Web User Interface (WUI) to add a second routing region to an active workload, without disrupting that workload.

Assume that you are still routing the workload in CICSpex PLXPROD1, via workload specification WLSPAY01, and that work requests are being routed by CICSP01 among the target regions in CICS system group CSGTGTS1. Now you want to add a second routing region - CICSPT02 - to the workload. Region CICSPT02 has been defined to CICSpex PLXPROD1 (using the CICS system definitions views), is running, and is linked to the target regions CICSPA01, CICSPA02, and CICSPA03.

1. Update the CICSpex SM definition for CICS system CICSPT02:
   • From the Web User Interface main menu click Administration > Topology administration > System definitions to open the CICS system definitions tabular view.
     If the current context is not PLXPROD1, specify PLXPROD1 in the Context field and click Refresh.
   • Select the record for CICSPT02 and click the Update... button.
   • Change the AOR dynamic routing mode field to YES.
   • Click Yes to confirm the update. This change takes effect when routing region CICSPT02 is next started.

2. Associate CICSPT02 with workload specification WLSPAY01:
   • From the main menu, click Administration > Workload manager administration > Specifications.
   • On the WLM specifications view, click the Record check box beside the entry for WLSPAY01 and click Associate CICS system....
   • In the CICS system field, type in CICSPT02 and click Yes to confirm the update.

When CICSPT02 has been restarted, you can verify that it has been added to WLSPAY01 as follows:
   • Open the WLM specification tabular view and click the entry for WLSPAY01. This opens a detail view.
   • Click the CICS systems associated with this workload specification link. Both CICSP01 and CICSPT02 should be listed in the WLM specifications to CICS system links tabular view.
To check that CICSPT02 is part of the active workload, from the main menu, click **Active workloads (WLM) > Routing regions in an active workload** This opens a tabular view showing entries for both CICSPT01 and CICSPT02.

**Quiescing a target region in an active workload**
This example describes how to use the Web User Interface (WUI) to quiesce the target region CICSPA03, which belongs to the active workload WLSPAY01.

You might need to do this so that you can apply maintenance to a region, for example. The regions CICSPT01 and CICSPT02 are routing work requests among three target regions (CICSPA01, CICSPA02, and CICSPA03) when you perform this task.

If you want to prevent work routing to a region, regardless of whether work is already running there, you can set the region’s z/OS WLM health open status to CLOSE or IMMCLOSE. For more information, see “Effect of the z/OS WLM health service on CICSPlex SM workload routing” on page 168.

1. List the target regions associated with workload WLSPAY01.
   - From the Web User Interface main menu click **Active workloads (WLM) > Active workload target distribution factors** to open the **Active workload target distribution factors** view.
     - If the current context is not PLXPROD1, specify PLXPROD1 in the **Context** field and click **Refresh**.
   - In the **Workload name** field type WLSPAY01 and click **Refresh**. This redisplays the **Active workload target distribution factors** view. The three CICS regions CICSPA01, CICSPA02 and CICSPA03 are listed. Their status is active.

2. Quiesce target region CICSPA03:
   - On the **Active workload target distribution factors** view, select the entry for target region CICSPA03 and click the **Quiesce...** button. This opens the **Quiesce** confirmation view.
   - Click **Yes** to confirm the action. The **Active workload target distribution factors** view is redisplayed, showing the **Target region status** value for CICSPA03 changed to QUIESCED. No new work requests are routed to the target region, though any work already running there is allowed to complete.

**Routing a specific transaction to a specific target region**
Use the Web User Interface (WUI) to define some workload separation requirements to CICSPlex SM.

This example describes how to use the Web User Interface (WUI) to always route the transaction PAY1 to the target region CICSPA02, which belongs to CICS system group CSGTGTS1. You are still working in CICSPlex PLXPROD1, and workload routing, from a single CICSPT01 among target regions in the group CSGTGTS1, is in effect.

1. If the transaction to be routed is to be started with EXEC CICS START, it should be defined as ROUTABLE.

2. Create a transaction group:
   - From the main menu, click **Administration > Workload manager administration > Transaction group definitions**. This opens the **Transaction group definitions** view.
     - If the current context is not PLXPROD1, specify PLXPROD1 in the **Context** field and click **Refresh**.
   - Click the **Create...** button, and provide the following information:

     | Name                        | Description                       | Affinity relation and lifetime checking status | Primary search criterion |
     |-----------------------------|-----------------------------------|-----------------------------------------------|--------------------------|
     | TRGPAY01                    | Send PAY1 to CICSPA02             | ACTIVE                                        | USERID                   |

     You can leave the remaining fields blank or accept the defaults.

Click **Yes**. The **Transaction group definitions** view is redisplayed, now showing the name of the transaction group TRGPAY01.
3. Add transaction PAY1 to transaction group TRGPAY01:
   - In the Transaction group definitions view, select the entry for TRGPAY01, and click the Add transaction... button.
   - In the Transaction name field, type the name PAY1 and click Yes to confirm. The Transaction group definitions view is redisplayed.

4. Create a workload definition:
   - From the main menu, click Administration > Workload manager administration > Definitions. This opens the WLM definitions view, listing any workload definitions already created in PLXPROD1.
   - Click the Create... button, and provide the following information:
     - Workload management definition: WLDPAY01
     - Description: Separate TRGPAY01 to CICSPA02
     - Transaction group name: TRGPAY01
     - Scope name of set of target systems: CICSPA02
   - Click Yes to confirm.

5. Create a workload group. (A workload group is essential if you want a workload definition to be installed automatically when the routing region that's routing the transactions is started.)
   - From the main menu, click Administration > Workload manager administration > Groups. This open the WLM groups view, listing any workload groups already created in PLXPROD1.
   - Click the Create... button, and type in the following:
     - Workload management group: WLGPAY01
     - Description: Workload group for WLDPAY01
   - Click Yes to confirm. The WLM groups view is redisplayed.

6. Add the workload group WLGPAY01 to the existing workload specification WLSPAY01:
   - In the WLM groups view, select the entry for WLGPAY01, and click the Add to WLM specification... button.
   - In the Specification name field, enter the name of the existing workload specification, WLSPAY01 and click Yes. The WLM groups view is redisplayed.

7. Add the workload definition to the workload group:
   - From the main menu, click Administration > Workload manager administration > Definitions to open the WLM definitions view.
   - Select the entry for WLGPAY01, and click the Add to WLM group... button.
   - In the Resource group name field, type WLGPAY01 and click Yes. The WLM definition view is redisplayed.

8. Install the workload group into the active workload.
   Because the workload WLSPAY01 is already active, you have to install the new workload group WLGPAY01 explicitly. If you did not install WLGPAY01, it would not take effect until the routing region CICSPT01 and the target regions in CICS system group CSGTGTS1 were next started.
   - From the main menu, click Administration > Workload manager administration > Groups to open the WLM groups tabular view.
   - Select the entry for WLGPAY01 and click the Install... button.
   - In the Workload name field, type WLSPAY01, and, in the Workload owner field, type in the SYSID of the system on which the workload specification WLSPAY01 was created.
   Click Yes to confirm
Because you are reusing a workload specification that is already active in CICSpex PLXPROD1, and have installed the workload group, the workload separation you have defined in this example takes immediate effect.

You can check that the new workload definition WLDPAY01 is active by opening the WLM definitions view. This should include an entry for WLDPAY01 in workload WLSPAY01. When transaction PAY1 is next started, by any user and from any terminal, CICSpex SM will route it to target region CICSPA02.

Routing particular transactions from a given user to a specific target region
This example describes how to use the Web User Interface (WUI) to route particular transactions from a given user to a specific target region.

This example task again describes how to use the Web User Interface in a refinement of the previous example (“Routing a specific transaction to a specific target region” on page 182). This time, the user ID value is to be an additional factor in determining where transactions are to be routed: transactions PAY6, PAY7, PAY8, and PAY9, when started from user ID USRPAY03, must be routed to target region CICSPA03 in CICSpex PLXPROD1.

1. Create a transaction group.
   - From the Web User Interface main menu, click Administration > Workload manager administration > Transaction group definitions. This opens the Transaction group definitions tabular view.
     If the current context is not PLXPROD1, specify PLXPROD1 in the Context field and click Refresh.
   - Click the Create... button, and provide the following information:
     - Name: TRGPAY02
     - Description: Send USRPAY03’s transactions to CICSPA03
     - Affinity relation and lifetime checking status: ACTIVE
     - Primary search criterion: USERID
     You can leave the remaining fields or accept the defaults.
     - Click Yes to confirm. The Transaction group definitions tabular view is redisplayed.
   2. Identify the transactions that belong to group TRGPAY02:
     - In the Transaction group definitions tabular view, select the entry for TRGPAY02, and click the Add transaction... button.
     - In the Transaction name field, type in the name of the first transaction PAY6, and click Yes to confirm.
     Repeat this step for three more transactions: PAY7, PAY8, and PAY9.
   3. Create a workload definition:
     - From the main menu, click Administration > Workload manager administration > Definitions. This opens the WLM definitions tabular view, listing any workload definitions already created in PLXPROD1.
     - Click the Create... button, and provide the following information:
       - Workload management definition: WLDPAY02
       - Description: Separate TRGPAY02 to CICSPA03
       - Transaction group name: TRGPAY02
       - User ID: USRPAY03
       - Scope name of set of target systems: CICSPA03
     - Click Yes to confirm.
4. Add the workload definition to the existing workload group:
   - From the main menu, click Administration > Workload manager administration—>Definitions to open the WLM definitions view.
   - Select the entry for WLPAY0 and click the Add to WLM group button.
   - In the Resource group name field, type WLPAY01 (the name of the workload group you created in the previous example). Workload group WLPAY01 is already associated with the active workload specification WLPAY01.
   - Click Yes to confirm.

5. Install the new workload definition into the active workload:
   Because group WLPAY01 is already associated with the active workload WLPAY01, changes you make to that group will not take effect until the routing region CICSPT01, and the target regions in CICS system group CSGTGTS1, are next started. To make the new workload definition take effect immediately, you must install it explicitly in WLPAY01:
   - Open the WLM definitions view again, select the entry for WLPAY02, and click the Install... button.
   - In the Workload name field, type in WLPAY01 and in the Workload owner field, type in the SYSID of the system on which the workload specification WLPAY01 was created.

Because you have explicitly installed the workload definition WLPAY02 in the active workload WLPAY01, the workload separation requirements you have defined in this example take immediate effect.

Honoring a pseudoconversational transaction
This example describes how to use the Web User Interface (WUI) to ensure that multiple transactions, among which there is an affinity, are routed to the same target region.

As before, you are working in CICSpex PLXPROD1 and are routing transactions from CICSPT01 to the target regions in CICS system group CSGTGTS1.

1. Create a transaction group:
   - From the main menu, click Administration > Workload manager administration > Transaction group definitions. This opens the Transaction group definitions tabular view.
     - If the current context is not PLXPROD1, specify PLXPROD1 in the Context field and click Refresh.
     - Click the Create... button, and provide the following information:
       - Name: TRGPAY03
       - Description: Pseudoconversational transaction
       - Affinity relation and lifetime checking status: ACTIVE
       - Primary search criterion: USERID
       - Affinity relationship: USERID
       - Affinity lifetime: PCONV

     Notice that the Affinity relationship and Affinity lifetime fields must be completed. These values tell CICSpex SM that the transactions in this group constitute a pseudoconversational transaction (PCONV), and that this affinity lasts while those transactions are coming from the same user ID (USERID). If one of them is initiated from a different user ID, CICSpex SM can select a different target region. Of course, the same type of affinity will then come into play in that second target region. You can ignore any fields that have been left blank or accept the defaults.
   - Click Yes to confirm. The Transaction group definitions tabular view is redisplayed.

2. Identify the transactions that belong to group TRGPAY03:
   - In the Transaction group definitions tabular view, select the entry for TRGPAY03 and click the Add transaction... button.
• In the **Transaction name** field, type in the name of the first transaction PAY2 and click **Yes** to confirm.

Repeat this step for three more transactions: PAY3, PAY4, and PAY5.

You can see that PAY2 starts the pseudoconversation and PAY5 ends it.

3. Create a workload definition:
   • From the main menu, click **Administration > Workload manager administration > Definitions**. This opens the **WLM definitions** view, listing any workload definitions already created in PLXPROD1.
   • Click the **Create...** button, and provide the following information:
     
     | Field                        | Value                          |
     |-------------------------------|--------------------------------|
     | Workload management definition| WLDPAY03                       |
     | Description                   | TRGPAY03 to the same target region |
     | Transaction group name        | TRGPAY03                       |
     | Scope name of set of target systems | CSGTГTS1                      |

   • Click **Yes** to confirm.

4. Add the workload definition to the workload group:
   • From the main menu, click **Administration > Workload manager administration > Definitions** to open the **WLM definitions** tabular view.
   • Select the entry for WLDPAY03 and click the **Add to WLM group...** button.
   • In the **Resource group name** field, type WLGПAY01.
   • Click **Yes** to confirm.

5. Because group WLGПAY01 is already associated with the active workload WLSPAY01, changes you make to that group will not take effect until the routing region CICSPT01, and the target regions in CICS system group CSGTГTS1, are next started. To make the new workload definition take effect immediately, you must install it explicitly in WLSPAY01. To install the new workload definition into the active workload:
   • Open the **WLM definitions** view again, select the entry for WLDPAY03, and click the **Install...** button.
   • In the **Workload name** field, type in WLSPAY01, and in the **Workload owner** field, type in the SYSID of the system on which the workload specification WLSPAY01 was created.

Because you have explicitly installed the workload definition WLDPAY03 in the active workload WLSPAY01, CICSPlex SM is able to honor this pseudoconversational transaction immediately. Be aware that you are able to use the single workload specification WLSPAY01 for both workload routing and workload separation because you did *not* specify default **Affinity relationship** and **Affinity lifetime** values in WLSPAY01. Had you done so, you would have had to create different workload specifications for workload routing and workload separation.

**Deactivating a workload definition**
This example describes how to use the Web User Interface (WUI) to deactivate a workload definition.

This example describes how to use the Web User Interface (WUI) to deactivate the workload definition WLDPAY02 created in the example “Routing particular transactions from a given user to a specific target region” on page 184.

1. Display active workload definitions:
   • From the main menu, click **Active workloads (WLM) > Definitions**. This opens the **Active workload definitions** view.
     
     If the current context is not PLXPROD1, specify PLXPROD1 in the **Context** field and click **Refresh**.
   • In the **Active workload definitions** view, type WLSPAY01 and click **Refresh**. The active workload definitions associated with workload specification WLSPAY01 are listed.

2. Discard workload definition WLDPAY02:
a. Select the entry for WLDPAY02, and click the Discard... button. This opens the Discard confirmation view.

b. Click Yes to confirm the action.

Be aware that, when you deactivate an active workload definition, you also deactivate any transaction groups associated with it if they aren't referenced by another workload definition in the same workload.

**Updating an active workload definition**

This example describes how to use the Web User Interface (WUI) to update an active workload definition and then reinstall it in the active workload.

In the example “Routing particular transactions from a given user to a specific target region” on page 184, you created the transaction group TRGPAY02 and named it in the workload definition WLDPAY02. In this example, you'll see how to remove TRGPAY02 and replace it with a new transaction group, TRGPAY04, which has already been created.

1. Display active workload definitions:

   • From the main menu, click Active workloads (WLM) > Definitions. This opens the Active workload definitions tabular view.
     
   If the current context is not PLXPROD1, specify PLXPROD1 in the Context field and click Refresh.

   • In the Active workload definitions view, type WLSPAY01 and click Refresh. The active workload definitions associated with workload specification WLSPAY01 are listed.

   Make a note of the value in the System ID of workload owner field for WLDPAY02 (CM1B, in this example).

2. Update workload definition WLDPAY02.

   • From the main menu, click Administration > Workload manager administration > Definitions to open the WLM definition tabular view.

   • Select the entry for WLDPAY02 and click the Update... button. The WLM definitions create view is displayed.

   • In the WLM definitions create view, change the Transaction group name to TRGPAY04 and change the Description text to "Separate TRGPAY04 to CICSPA03"

   • Click Yes. The WLM definitions tabular view is redisplayed.

3. Install the updated workload definition in WLSPAY01:

   In the WLM definitions tabular view, select the entry for WLDPAY02 and click the Install... view. The Install view is displayed. In the Workload name field, type WLSPAY01. In the Workload owner field, type the 4-character ID of the workload owner that you made a note of in step “1” on page 187. Click Yes. The updated workload definition is installed in workload WLSPAY01.

4. Check that the updated workload definition has been installed:

   • From the main menu, click Active workloads (WLM) > Definitions. This opens the Active workload definitions tabular view showing the updated definition. Check that TRGPAY02 has been replaced by TRGPAY04.

5. Check that transaction group TRGPAY02 is inactive and that transaction group TRGPAY04 is now active:

   • From the main menu, click Active workloads (WLM) > Transaction groups to view the status of the two transaction groups.

**Note:**

Updating the User ID, Terminal LU name, BTS process type, or Scope name of set of target systems fields in a workload definition prevents the workload definition from being reinstalled dynamically. To reinstall the workload definition into an active workload, you must:

• From the Active workload definitions tabular view, click the Discard... button to discard the active workload definition.
From the workload management Definitions view, click the Install... button to install the workload definition into the workload.

Alternatively, to reinstall workload definitions with changed attributes, use a batch API program to disable access to the affected application, discard the Active workload definitions view, install the WLM definitions view, and re-enable the affected application.

**Discarding an active transaction from a workload**

This example describes how to use the Web User Interface (WUI) to discard an active transaction from a workload.

1. Display active transactions.
   - From the main menu, click Active workloads (WLM) > Dynamic transactions.
     - If the current context is not PLXPROD1, specify PLXPROD1 in the Context field and click Refresh.
     - The Active workload dynamic transactions tabular view shows the active transactions associated with workload specification EYUWLS02.

2. Discard transaction PAY2:
   - From the Active workload dynamic transactions view, select transaction PAY2, and click the Force... button. The Force confirmation view is displayed.
   - Click Yes to confirm the action.

**Updating a workload specification**

This example describes how to use the Web User Interface to update a workload specification.

**About this task**

In this example, the workload specification to be updated is WLSPAY01, which you created in the example “Managing a workload” on page 178.

Consider the effects of this task carefully. In particular, the updated workload specification cannot take effect immediately. For the update to take immediate effect, you must stop and then restart both the routing region with which the workload specification is associated and the target regions to which the routing region routes transactions.

**Procedure**

1. Update workload specification WLSPAY01.
   - From the Web User Interface main menu, click Administration > Workload manager administration > Specifications to open the WLM specifications (WLMSPEC) tabular view.
     - If the current context is not PLXPROD1, specify PLXPROD1 in the Context field and click Refresh.
   - Select the entry for WLSPAY01 and click the Update button.
   - Change the Algorithm type field from QUEUE to GOAL.
   - Click Yes. The view is redisplayed showing the updated entry for WLSPAY01.

2. Display the Active workload view:
   - From the main menu, click Active workloads (WLM) > Active workloads.
     - In the Active workloads tabular view, type in the workload name WLSPAY01 and click Refresh.
     - The Active workloads tabular view is redisplayed. You will see that the algorithm type for WLM specification WLSPAY01 is still QUEUE. This is because region CICSPT01 doesn't know about the changes you've made.

**What to do next**

If you want the updated workload specification to take effect immediately, use the CICS regions view to stop the routing regions and the target regions to which they route, and then restart them. The regions...
must all be shut down together and not restarted until each CMAS that had CICS elements participating in the named workload issues message EYUWM0410I confirming that the workload specification has terminated successfully. If CICS regions that are members of the workload restart before receiving message EYUWM0410I, the existing workload specification will continue to be used and the updates to the workload specification will not be in effect. After the routing regions are restarted, display the Active workloads tabular view and you will see that the Algorithm type field has been updated to GOAL.

Using real-time analysis to select a target region for workload routing

Use CICSPlex SM's real-time analysis functions to produce data that will help in the selection of a target region during workload routing.

The number of items on the temporary storage queue will be monitored for each target region to which work can be routed. When the number of items rises above 50, a real-time analysis event notification (severity HS) and an external message will be issued. When an event notification is issued, CICSPlex SM's workload-routing function is notified and uses the information, in addition to the standard queue algorithm criteria, in selecting the best target region.

A CICS system group CSGTGT3 has already been created and contains four target regions (CICSPA01, CICSPA02, CICSPA03, and CICSPA04). The target regions are currently running. Work is currently being routed among these target regions by the routing region CICSPT03.

1. Create a real-time analysis evaluation definition:

   • From the main menu, click Administration > RTA MAS resource monitoring > Evaluations. This opens the Evaluation definitions tabular view, listing any evaluation definitions already created in PLXPROD1.

      If the current context is not PLXPROD1, specify PLXPROD1 in the Context field and click Refresh.

   • Click the Create... button, and provide the following information:

      | Name               | RTEPAY15 |
      |--------------------|----------|
      | Description        | TSQ NUMITEMS > 50 |
      | Sample interval    | 300      |
      | Resource table name| MTSQGBL  |
      | Instance identifier of evaluated resource | * |
      | Method of evaluating results in result set | ANY |
      | Separate task indicator | NO |
      | Name of field being evaluated | PUTQAUX |
      | Evaluation type    | VALUE    |
      | Evaluation logical operator | GT |
      | Evaluation data value | 50 |
      | Severity assigned when result meets criteria | HS |
      | Name of a view that may provide extra information | MTSQGBL |

      • Click Yes to create the new evaluation definition.

2. Create a real-time analysis action definition:

   • From the main menu, click Administration > RTA MAS resource monitoring > Actions. This opens the Action definitions view.

      • Click the Create... button, and provide the following information:

      | Action               | RTAPAY15 |
      | Description          | NUMITEMS IN TSQ > 50 |
Generate event option YES
Name of view that may provide useful information TSQ
Action priority 255
Message to send when event occurs AUX TSQUEUE PUTQ ITEMS > 50
Generate external message option YES
External message sent when event occurs AUX TSQUEUE PUTQ ITEMS > 50
External message sent when event is cleared AUX TSQUEUE PUTQ ITEMS < 50
Generate SNA generic alert option NO
MVS automatic restart NO

- Click Yes to create the new RTA action definition. The Action definitions tabular view is redisplayed.

3. Create an analysis definition:
- From the main menu, click Administration > RTA MAS resource monitoring > Definitions. This opens the RTA definitions view.
- Click the Create... button, and provide the following information:

<table>
<thead>
<tr>
<th>Name</th>
<th>RTDPAY15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>TSQ NUMITEMS FOR WLM /RTA</td>
</tr>
<tr>
<td>Execute evaluation modification string</td>
<td>NO</td>
</tr>
<tr>
<td>Analysis interval</td>
<td>300</td>
</tr>
<tr>
<td>Action definition name</td>
<td>RTAPAY15</td>
</tr>
<tr>
<td>Count of true evaluations before VLS raised</td>
<td>0001</td>
</tr>
<tr>
<td>Count of false evaluations before VLS resolved</td>
<td>0001</td>
</tr>
<tr>
<td>Count of true evaluations before LS raised</td>
<td>001</td>
</tr>
<tr>
<td>Count of false evaluations before LS resolved</td>
<td>001</td>
</tr>
<tr>
<td>Count of true evaluations before LW raised</td>
<td>001</td>
</tr>
<tr>
<td>Count of false evaluations before LW resolved</td>
<td>001</td>
</tr>
<tr>
<td>Count of true evaluations before HW raised</td>
<td>001</td>
</tr>
<tr>
<td>Count of false evaluations before HW resolved</td>
<td>001</td>
</tr>
<tr>
<td>Count of true evaluations before HS raised</td>
<td>001</td>
</tr>
<tr>
<td>Count of false evaluations before HS resolved</td>
<td>0001</td>
</tr>
<tr>
<td>Count of true evaluations before VHS raised</td>
<td>0001</td>
</tr>
<tr>
<td>Count of false evaluations before VHS resolved</td>
<td>0001</td>
</tr>
<tr>
<td>Count of false evaluations before VHS resolved</td>
<td>0001</td>
</tr>
</tbody>
</table>

- Click Yes to create the new analysis definition. The Analysis definitions tabular view is redisplayed.

4. Create an analysis group:
- From the main menu, click Administration > RTA MAS resource monitoring > Groups. This opens the RTA groups tabular view.
- Click the **Create...** button, and provide the following information:

<table>
<thead>
<tr>
<th>RTA group</th>
<th>RTGPAY09</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>RTA/WLM Group</td>
</tr>
</tbody>
</table>

- Click **Yes** to create the new analysis group. The **RTA groups** tabular view is redisplayed.

### 5. Add the analysis definition to the analysis group:

- From the main menu, click **Administration > RTA MAS resource monitoring > Definitions**. This opens the **RTA definitions** view.
- Click the record check box beside the entry for RTDPAY15 and click the **Add to RTA group...** button. The **Add to RTA group** view is displayed.
- In the **Resource group name** field, type RTGPAY09 and click **Yes**. The **RTA definitions** tabular view is redisplayed.

### 6. Create an analysis specification:

- From the main menu, click **Administration > RTA MAS resource monitoring > Specifications**. This opens the **RTA specifications** tabular view.
- Click the **Create...** button, and provide the following information:

<table>
<thead>
<tr>
<th>RTA specification name</th>
<th>RTSPAY09</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Workload routing with RTA</td>
</tr>
</tbody>
</table>

- Click **Yes** and the **RTA specifications** tabular view is redisplayed, listing the new RTA specification.

### 7. Add the analysis group to the analysis specification:

- From the main menu, click **Administration > RTA MAS resource monitoring > Groups**. This opens the **RTA groups** tabular view.
- Click the record check box beside the entry for RTGPAY09 and click the **Add to RTA specification...** button. The **Add to RTA specification** view is displayed.
- In the **RTA specname** field, type RTSPAY09 and click **Yes**. The **RTA groups** tabular view is redisplayed.

### 8. Set the scope of the analysis specification:

- From the main menu, click **Administration > RTA MAS resource monitoring > Specifications**. This opens the **RTA specifications** tabular view.
- Click the record check box beside the entry for RTGPAY09 and click the **Associate CICS group...** button. The **Associate CICS group** view is displayed.
- In the **CICS system group** field, type CSGTGTS3 and select the **Force** option. Click **Yes** and the **RTA specifications** tabular view is redisplayed.

### 9. Activate real-time analysis in the target regions in CSGTGTS3:

- From the main menu, click **Administration > RTA system availability monitoring > CICS system definitions**. This opens the **CICS system definitions** tabular view.
- Click the record check box beside the entry for CICS system CICSPA01, click the **Update...** button, and provide the following information:

<table>
<thead>
<tr>
<th>CICS system definition name</th>
<th>CICSPA01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Target region 1 on System A</td>
</tr>
<tr>
<td>Real time analysis status</td>
<td>YES</td>
</tr>
<tr>
<td>Severity for system availability monitoring event</td>
<td>NO</td>
</tr>
<tr>
<td>Severity for short-on-storage (SOS) event</td>
<td>NO</td>
</tr>
<tr>
<td>Severity for system dump event</td>
<td>NO</td>
</tr>
</tbody>
</table>
Severity for transaction dump event | NO  
Severity for CICS-at-maximum-tasks event | NO  
Severity for CICS-stalled event | NO  

- Click **Yes** to confirm the change. The CICS system definition is updated and the change, which is permanent, takes immediate effect. You do not have to restart CICS system CICSPA01. Repeat this step for the target regions CICSPA02, CICSPA03, and CICSPA04.

10. The workload specification WLSPAY02 is already being used for workload routing among the target regions in CSGTGTS3. You must update the specification to add the real-time analysis data to the standard target region selection criteria. To update the workload specification:

- From the main menu, click **Administration > Workload manager administration > Specifications.** This opens the **WLM specifications** tabular view.
- Click the record check box beside the entry for WLSPAY02, click the **Update...** button, and provide the following information:

  | Name | WLSPAY02 | Description | Workload using RTA for target region selection | Primary search criterion | USERID | Default target scope | CSGTGTS3 | RTA event name | RTDPAY15 | Acceptable level of abend probability | 0 | Acceptable abend load threshold | 0 | Algorithm type | QUEUE |

- Click **Yes** to update the specification.

  Notice that the **RTA event** field value is the name of the analysis definition you created in step “3” on page 190.

When the routing region CICSPT03 and the target regions in CICS system group CSGTGTS3 are next started, the routing region routes transactions among the target regions using both the standard queue algorithm criteria and the analysis definition RTDPAY15 to select a target region.

**Dynamic routing with EXEC CICS START TERMID**

Use the Web User Interface (WUI) to set up dynamic routing capability for a transaction started with **EXEC CICS START**, that specifies a terminal ID and a transaction ID, and to use the GOAL algorithm to select the target region.

**Note:** You should check the system requirements before trying to route **EXEC CICS START TERMID** dynamically. See CICSpless SM workload requirements.

In this example, a program running in CICSPA01 begins with **EXEC CICS START**, which is associated with terminal TRM1, to run transaction PAY1, for which you require a 2-second response time. Terminal TRM1 is associated with region CICSPT01. Transaction PAY1 may execute in any region connected to CICSPT01, that is, in CICSPA01, CICSPA02, or CICSPA03.

This example uses the environment that has already been created as part of earlier examples. You are working in CICSpless PLXPROD1, which comprises TOR CICSPT01 and AORs CICSPA01, CICSPA02, and CICSPA03 in CICS system group CSGTGTS1. Transaction group TRGPAY03 has transactions PAY1, PAY2, PAY3, and PAY4 associated with it. Workload definition WLDPAY03 was defined to tell CICSpless SM that transactions in group TRGPAY03 must be routed to a target region in CICS system group CSGTGTS1.

As you want to use the **GOAL** algorithm, you need to define, in MVS Workload Manager, a Service Class with the required response time and allocate that Service Class to transaction PAY1. For example, you could specify:
• A Service Class of Fast that has an average response time of 2 seconds.
• A classification rule that associates Classification Subsystem CICS with transaction ID PAY1 and Service Class Fast.

For more information about Service Classes, see the information about the goal algorithm in Management of the work in a workload.

In CICSPlex SM:
1. Create a workload specification.
   • From the main menu, click Administration > Workload manager administration > Specifications. This opens the WLM specifications tabular view.
   If the current context is not PLXPROD1, specify PLXPROD1 in the Context field and click Refresh.
   • Click the Create button, and provide the following information:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Description</td>
<td>Dynamic routing START</td>
</tr>
<tr>
<td>Primary search criterion</td>
<td>Value = USERID</td>
<td>USERID</td>
</tr>
<tr>
<td>Default target scope</td>
<td>CSGTGTS1</td>
<td></td>
</tr>
<tr>
<td>Acceptable level of abend probability</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Acceptable abend load threshold</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Algorithm type</td>
<td>GOAL</td>
<td></td>
</tr>
</tbody>
</table>

   • Click Yes to create the specification.

You must supply:
• A name for the specification (WLSDYN01 in this example).
• A Primary search criterion value. USERID is shown in this example, though in fact it doesn't matter whether you specify USERID or LUNAME, because the Primary search criterion value has no effect on simple workload routing. It is used only for some kinds of workload separation, but you have to supply a value because CICSPlex SM doesn't know, at this stage, that you aren't going to use this workload specification for workload separation.
• A Default target scope value, which is the name of the single target region, or group of target regions, to which transactions can be routed.
• An Algorithm type value. For this example, use GOAL, because the criteria for selecting the target region are based on the requirement that the transaction has a response time of 2 seconds.

When you click Yes, the WLM specifications tabular view is redisplayed, this time showing an entry for the new workload specification, WLSDYN01.
2. The next step is to tell CICSPlex SM about the region that's going to be routing the work requests to the target regions in group CSGTGTS1. To associate the workload specification with a routing region:
   • On the WLM specifications tabular view, click the Record check box beside the entry for the WLSDYN01 specification and click the Associate CICS system button.
   • Type WLSDYN01 in the CICS system field and click Yes. The WLM specifications tabular view is redisplayed and you can check that the association between the routing region and the workload specification has been created.
3. Activate workload routing in the routing region:
   • From the main menu, click Administration > Topology administration > System definitions. This opens the CICS system definitions tabular view.
   • Click the Record check box beside the entry for CICSPT01 and click the Update button.
• In the **Workload manager status** field, select YES from the drop-down menu. This change takes effect when CICSPT01 is next started.

4. Activate workload routing in the target regions.
   • From the main menu, click **Administration > Topology administration > System definitions**. This opens the **CICS system definitions** tabular view.
   • Click the Record check box beside the entry for CICSPA01 and click the **Update** button.
   • In the **AOR dynamic routing mode** field, select YES from the drop-down menu. This change takes effect when the target region CICSPA01 is next started.

Repeat this step for target regions CICSPA02 and CICSPA03.

5. Install program definitions:
   • From the main menu, click **Administration > Basic CICS resource administration > Resource definitions > Program definitions**. This opens the **Program definitions** tabular view.
   • Click the Record check box beside the entry for CICSPA01 and click the **Update** button.
   • Set the **Dynamic routing status** field to NO from the drop-down box.
   • Click **Yes** to confirm. The **Program definitions** tabular view is redisplayed.
   • Click the Record check box beside the entry for CICSPA01 and click the **Install** button.
   • Type CICSPA01 in the **Target scope value** field and click Yes to confirm.

Repeat this step for CICSPA02 and CICSPA03.

6. Install transaction definitions:
   • From the main menu, click **Administration > Basic CICS resource administration > Resource definitions > Transaction definitions**. This opens the **Transaction definitions** tabular view.
   • From the **Transaction definitions** view, select PAY1 and click the **Install** button. Type CICSPA01 in the **Target scope value** field.
   • Click Yes to confirm.

You can either update the transaction definitions to specify these field values, or you can specify override values when you install the transaction definitions.

In this example task, a program running in CICSPA01, the requesting region, issues an **EXEC CICS START** command that specifies a transaction ID of PAY1 and a terminal ID TRM1. The START command is function shipped to CICSPT01, the TOR that owns the specified terminal. CICSPT01 acts as the routing region and invokes the dynamic routing exit, which selects the target region. All the AORs in CICS system group CSGTGS1 are possible target regions; the actual target region is selected on the basis of the GOAL criterion of a response time of 2 seconds. CICSPlex SM obtains the Service Class of transaction PAY1 and the identity of the target region to which that Service Class is allocated, from a CICSPlex SM-maintained table.

**Dynamic routing of an inbound client DPL request**
This example describes how to use the Web User Interface (WUI) to set up dynamic routing capability for a DPL request from a CICS client, and to use the GOAL algorithm to select the target region.

**Before you begin**
You should check the system requirements before trying to dynamically route inbound client DPL requests. See CICSPlex SM workload requirements.

**About this task**
In this example, a request is received to run transaction PAY1 to invoke client program PAYPROG1. PAYPROG1 issues an **EXEC CICS LINK** command to server program PAYPROG2. You require transaction PAY1 to have a 2-second response time.

This example uses the environment that was used for “Dynamic routing with **EXEC CICS START TERMD**” on page 192.
As you want to use the GOAL algorithm, you need to define, in MVS Workload Manager, a Service Class with the required response time and allocate that Service Class to the transaction. For example, you could specify:

- A Service Class of Fast with an average response time of 2 seconds.
- A classification rule that associates Classification subsystem CICS with transaction ID PAY1 and Service Class Fast.

For more information about Service Classes, see the information about the goal algorithm in Management of the work in a workload.

Perform the following procedure in CICSPlex SM.

**Procedure**

1. Set the dynamic routing status value for program PAYPROG1.
   a) From the main menu, click Administration > Basic CICS resource administration > Resource definitions > Program definitions >.
      This opens the Program definitions tabular view.
   b) If the current context is not PLXPROD1, specify PLXPR0D1 in the Context field and click Refresh.
   c) Click the Record check box beside the entry for PAYPROG1 and click the Update button. From the drop-down box, set the Dynamic routing status field to NO.
   d) Click Yes to confirm.

2. Install program definitions.
   a) From the Program definitions tabular view, click the Record check box beside the entry for PAYPROG1 and click the Install button.
   b) Type CICSPA01 in the Target scope value field.
   c) Click Yes to confirm.
      Repeat this step to install PAYPROG1 in target scopes CICSPA02 and CICSPA03.
      For details of defining and installing program definitions, see Creating resources with BAS: PROGRAM resource definitions.

3. Install the transaction definition.
   a) From the main menu, click Administration > Basic CICS resource administration > Resource definitions > Transaction definitions.
      This opens the Transaction definitions tabular view.
   b) If the current context is not PLXPROD1, specify PLXPR0D1 in the Context field and click Refresh.
   c) From the Transaction definitions view, click the Record check box beside the entry for PAY1 and click the Install button.
   d) Type CICSPA01 in the Target scope value field.
   e) Click Yes to confirm.
      Repeat this step to install PAY1 in target scopes CICSPA02 and CICSPA03.
      The transaction definition should point to the mirror program DFHMIRS. For details of defining and installing transaction definitions, see Creating resources with BAS: Transaction resource definitions.

**Dynamic routing of a peer-to-peer DPL request**

This example describes how to use the Web User Interface (WUI) to set up dynamic routing for a peer-to-peer DPL request, and to use the GOAL algorithm to select the target region.

**Note:** You should check the system requirements before trying to dynamically route peer-to-peer DPL requests. See CICSPlex SM workload requirements.

In this example, transaction PAY1 runs program PAYPROG1, which issues an \texttt{EXEC CICS LINK} command to program PAYPROG2. You require transaction PAY1 to have a response time of 4 seconds.
This example uses the environment that was used for “Dynamic routing with EXEC CICS START TERMID” on page 192. However, because this is a peer-to-peer dynamic linking request, only the AORs are involved and each AOR may act as a requesting, routing, or target region.

As you want to use the GOAL algorithm, you need to define, in MVS Workload Manager, a Service Class with the required response time and allocate that Service Class to the transaction. For example, you could specify:

- A Service Class of Medium with an average response time of 4 seconds.
- A classification rule associating Classification Subsystem CICS with transaction ID PAY1 and Service Class Medium.

For more information about Service Classes, see the information about the goal algorithm in Management of the work in a workload.

In CICSPlex SM:

1. The first step is to set the dynamic routing status value for program PAYPROG1. To do this:
   - From the main menu, click Administration > Basic CICS resource administration > Resource definitions > Program definitions. This opens the Program definitions tabular view.
     - If the current context is not PLXPROD1, specify PLXPROD1 in the Context field and click Refresh.
     - Click the Record check box beside the entry for PAYPROG1 and click the Update... button.
     - Set the Dynamic routing status field to NO from the drop-down box.
     - Click Yes to confirm.

2. Install program definitions:
   - From the Program definitions tabular view, click the Record check box beside the entry for PAYPROG1 and click the Install... button.
   - Type CICSPA01 in the Target scope value field.
   - Click Yes to confirm.
   - Repeat this step to install PAYPROG1 in target scopes CICSPA02 and CICSPA03.

For details of defining and installing program definitions, see Creating resources with BAS: PROGRAM resource definitions.

You don’t need to install program definition PAYPROG2 in the regions, but if you do, PAYPROG2 should be defined as dynamic.

3. Install the transaction definition:
   - From the main menu, click Administration > Basic CICS resource administration > Resource definitions > Transaction definitions. This opens the Transaction definitions tabular view.
     - If the current context is not PLXPROD1, specify PLXPROD1 in the Context field and click Refresh.
     - From the Transaction definitions tabular view, Click the Record check box beside the entry for PAY2 and click the Install... button.
     - Type CICSPA01 in the Target scope value field.
     - Click Yes to confirm.

   The transaction definition should point to the mirror program DFHMIRS.
   - Repeat this step to install PAY2 in target scopes CICSPA02 and CICSPA03.

Routing CICS BTS activities
Use the Web User Interface (WUI) to route a CICS BTS-related workload.

This example uses the configuration that has been used for earlier examples. You are working in CICSPlex PLXPROD1, which comprises AORs CICSPA01, CICSPA02, and CICSPA03 in CICS system group CSGTGT51. These three systems may act as routing and target regions. In addition, it is assumed that the
RLS file for the BTS process type is accessible to all CICS system in CICS system group CSGTGTS1, and that all the systems in CICS system group CSGTGTS1 are interconnected.

**Note:** You should check the system requirements before trying to dynamically route CICS BTS activities. See “Separating CICS BTS activities” on page 198 and CICS release requirements for dynamic routing.

1. Activate workload routing for the systems in CSGTGTS1.
   
   • From the main menu, click **Administration > Topology administration > System definitions**. This opens the **System Definitions** tabular view.
   
   If the current context is not PLXPROD1, specify PLXPROD1 in the **Context** field and click **Refresh**.
   
   • Click the record check box beside the entry for CICSPA01 and click the **Update...** button.
   
   • Select YES from the drop-down box for both the **Workload manager status** field and in the **AOR dynamic routing mode** field. These changes takes effect when the target region CICSPA01 is next started.

   Repeat this step for target regions CICSPA02 and CICSPA03.

2. Create a workload specification:
   
   • From the main menu, click **Administration > Workload manager administration > Specifications**. This opens the **WLM specifications** tabular view.
   
   • Click the **Create...** button, and provide the following information:

   ```
   Name          WLSCBTS
   Description    Routing CICS BTS activity
   Primary search criterion USERID
   Default target scope CSGTGTS1
   Acceptable level of abend probability 0
   Acceptable abend load threshold 0
   Algorithm type LNQUEUE
   ```

   • Click **Yes** to confirm. The **WLM specifications** tabular view is redisplayed.

   You must supply:

   • A name for the specification (WLSCBTS in this example).

   • A primary search criterion value. USERID is shown in this example, though in fact it does not matter whether you specify USERID or LUNAME, because the primary search criterion value has no effect on simple workload routing. It is used only for some kinds of workload separation, but you have to supply a value because CICSPlex SM cannot determine, at this stage, that you are not going to use this workload specification for workload separation.

   • A default target scope value, which is the name of the single target region, or group of target regions, to which transactions can be routed. In this example, use CSGTGTS1.

   • An algorithm Type value. For this example, use LNQUEUE. The LNQUEUE (link neutral queue) algorithm ignores the type of link between routing and target regions but otherwise uses the same routing criteria as the QUEUE algorithm.

3. Associate the workload specification with routing region scope CSGTGTS1.
   
   • Click the Record check box beside the entry for WLSCBTS and click the **Associate CICS system...** button.

   • In the **CICS system** field, type CSGTGTS1.

   • Click **Yes** to confirm. The **WLM specifications** tabular view is redisplayed.

4. Specify the system initialization parameter DSRTPGM is set to EYU9XLOP.
You can do this either in the system initialization parameter of each region in the CICS system group, or by using the CICS system definitions view.

5. Activate workload management:
   - From the main menu, click CICSPlex SM operations > MASs known to CICSpex. This opens the MASs known to CICSpex tabular view.
   - Click CICS system name CICSPA01 open the MASs known to CICSpex detailed view for CICSPA01.
   - In the Workload manager status field, select YES from the drop-down list to start managing workloads for this CICS system.
   - Click Apply changes.

Repeat this step to activate workload management for CICSPA02 and CICSPA03.

6. Program your BTS activities to run asynchronously.

When the routing and target regions in system group CSGTGS1 are next started, BTS activities are routed among the target regions.

Separating CICS BTS activities
This example describes how to use the Web User Interface (WUI) to separate a CICS BTS-related workload.

In this example, BTS activity BTSACT1 has an affinity of LIFETIME and runs under transaction ID BTS1 and process type SALES. This example uses the configuration that has been used for the example in “Routing CICS BTS activities” on page 196. Similarly, the system initialization parameter DSRTPGM must be set to EYU9XLOP.

Note: You should check the system requirements before trying to dynamically route CICS BTS activities. See CICS release requirements for dynamic routing.

1. Create a transaction group:
   - From the main menu, click Administration views > Workload manager administration views > Transaction groups definitions. This opens the Transaction group definitions tabular view.
   - If the current context is not PLXPROD1, specify PLXPROD1 in the Context field and click Refresh.
   - Click the Create... and provide the following information:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRGCBTS1</td>
<td>CICS BTS transaction group</td>
</tr>
<tr>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>Affinity relation</td>
<td>ACTIVE</td>
</tr>
<tr>
<td>Affinity lifetime</td>
<td>ACTIVITY</td>
</tr>
<tr>
<td>Acceptable level of</td>
<td>0</td>
</tr>
<tr>
<td>Acceptable abend</td>
<td>0</td>
</tr>
<tr>
<td>Algorithm type</td>
<td>QUEUE</td>
</tr>
</tbody>
</table>

You can ignore any fields that have been left blank.

- Click Yes to redisplay the Transaction group definitions tabular view, now showing the name of the transaction group TRGCBTS1.

Notice that the Affinity relationship and Affinity lifetime fields must be completed. These values tell CICSPlex SM that the transactions in this group constitute a BTS affinity, and that this affinity lasts while those transactions are coming from the same BTS application. If one of them is initiated from a different BTS application, CICSPlex SM can select a different target region. Of course, the same type of affinity will then come into play in that second target region.
2. Identify the transactions in group TRGCBTS1:
   - From the Transaction group definitions view select the entry for TRGCBTS1 and click the Add transaction... to open the Add transaction tabular view.
   - In the Transaction name field, type BTS1 and click Yes to add the transaction to the Transaction group. The Transaction group definition view is redisplayed.

3. Create a workload definition:
   - From the main menu, click Administration > Workload manager administration > Definitions. This opens the WLM definitions tabular view.
   - Click the Create... button and provide the following information:
     
     | Workload management definition | WLDCBTS3 |
     |---------------------------------|----------|
     | Description                     | Separate CICS BTS activities |
     | Transaction group name          | TRGCBTS1 |
     | BTS process type                | SALES    |
     | Scope name of set of target systems | CSGTGTS1 |

   - Click Yes and the WLM definitions tabular view is redisplayed.
   These values tell CICSPlex SM that transactions in group TRGCBTS1, and of process type SALES, must go to a target region in group CSGTGTS1. CICSPlex SM can select the most appropriate target region at the time the transaction is initiated.

4. Add the workload definition to the workload group:
   - In the WLM definition tabular view, click the Record check box beside the entry for the WLDCBTS1 and click the Add to WLM group... button. The Add to WLM group view is displayed.
   - In the Resource group name field, type WLGCBTS1 and click Yes. The WLM definitions tabular view is redisplayed.

5. Add the workload group to a workload specification:
   - From the main menu, click Administration views > Workload manager administration views > Groups. This opens the WLM group tabular view.
   - In the WLM group view, click the Record check box beside the entry for the WLDCBTS1 and click the Add to WLM specification... button. The Add to WLM specification view is displayed.
   - In the Specification name field, type WLGCBTS1 and click Yes. The WLM groups tabular view is redisplayed.

Managing a Link3270 bridge workload
These examples describe how to use the Web User Interface (WUI) to manage a Link3270 bridge workload.

In the case of Link3270 bridge requests, the client application in the requester region calls the Link3270 bridge using EXEC CICS LINK, EXCI or ECI, and passes a communication area to the bridge router program, DFHL3270, which runs in the router region. The transaction ID that is used for Link3270 bridge workload routing is the name that is passed to DFHL3270 in the communication area and is not necessarily the same as the transaction name entered at the terminal or workstation. The target regions contain the bridge environment in which the target transaction runs.

When CICSPlex SM is in use and the CICSPlex SM routing exit, EYU9XLOP, is specified as the DTRPGM system initialization parameter, DFHL3270 uses CICS distributed program linking to pass control to EYU9XLOP. The mirror program, DFHMIRS, passes the following information to EYU9XLOP in the DFHDYPDS communication area:
   - A DYRTYPE value of 8, which indicates a Link3270 bridge request type
   - An eight-character bridge token in the DYRBRTK field
   - The transaction ID of the transaction that is to run in the target region in the DYRTRAN field.
For more information about the Link3270 bridge, see Introduction to the 3270 bridge.
For more information about CICS distributed program linking, see CICS distributed program link.

Routing a Link3270 bridge workload
In this example CICSPT01 is the router region and the target regions are CICSPA01, CICSPA02 and CICSPA03.
1. If the current context is not PLXPROD1, specify PLXPROD1 in the Context field and click Refresh.
2. Set the DTRPGM system initialization parameter to EYU9XLOP in all regions.
3. Update definitions
   a. From the Web User Interface main menu, click Administration > Topology administration > System definitions to open the CICS system definition tabular view.
   b. Select the entry for CICSPT01 and click Update to open a detail view of CICSPT01.
   c. Scroll down to the Workload manager status field and select YES from the menu.
   d. Scroll down to the AOR dynamic routing mode field and select YES from the menu.
   e. Click Yes at the bottom of the view to return to the CICS system definitions tabular view. See Administering CICSPlex SM for a description of the CICS system definition view.
      This change takes effect when the target region CICSPA01 is next started.
      Repeat this for the regions CICSPA01, CICSPA02 and CICSPA03.
4. Create a CICS system group
   a. From the main menu click Administration > Topology administration > System groups to open the System group definitions tabular view.
   b. Scroll to the bottom of the view and click Create, to create a system group called CSGTGTS1
      CSGTGTS1, in this example, is to contain the regions that are to act as targets. See Administering CICSPlex SM for a description of the System group definitions view.)
5. Add the target regions to CSGTGTS1.
6. Create a workload specification
   a. From the main menu click Administration > Workload manager administration > Specifications to open the WLM specifications tabular view (WLMSPEC object).
   b. Scroll to the bottom of the view, click Create, and provide the following information:
      
      WLM specification name
      BRSPEC01
      Description
      Link3270 Bridge Workload
      Primary search criterion
      USERID
      Automatic affinity creation option
      N/A
      Default target scope
      BRITGTS1
      Algorithm type
      QUEUE
      Leave the remaining fields empty or accept the defaults.
      You must supply:
      • The name of the workload specification. In this example it is called BRSPEC01.
      • A Primary search criterion value. USERID is shown in this example, though in fact it doesn't matter whether you specify USERID or LUNAME, because the Primary search criterion value has no effect
on simple workload routing. It is used only for some kinds of workload separation, but you have to supply a value because CICSPlex SM doesn't know, at this stage, that you aren't going to use this workload specification for workload separation.

- **A Default target scope**, which is the name of the region or group of regions (BRITGTS1 in this example) to which work is to be routed.

- **An Algorithm type.** This example uses QUEUE but you can specify either QUEUE, LNQUEUE, GOAL, or LNGOAL for Link3270 bridge requests.

7. Associate the workload specification with the routing region scope

   - On the WLM specifications tabular view, select the record for BRSPEC01 and click the Associate CICS system... button.
   - Enter the routing region scope into the CICS system field and click Yes.

When the regions are next restarted, the workload will be routed across the target regions. You can use the Active workloads view (WLMAWORK object) to check that workload specification BRSPEC01 is active. You can use the Active workload target distribution factors view (WLMAWAOR object) to see to which target regions workloads are being routed.

**Separating a Link3270 bridge workload**

You can separate Link3270 bridge workloads by user ID, transaction group, or LU name.

**About this task**

You can separate by LU name only if you are overriding the NETNAME that the bridge generates automatically. Be aware of the restrictions on the use of LUNAME when separating Link3270 bridge workloads. For more information, see Separating Link3270 bridge workloads. For Link3270 bridge workloads, the LU name is the eight-character NETNAME of the terminal running the client transaction that started the Link3270 bridge, rather than the NETNAME of the bridge facility itself.

To separate by bridge facility NETNAME, you must modify the EYU9WRAM module. For more information, see Separating Link3270 bridge workloads. CICS routes all transactions running under the same bridge facility to the same target region. You cannot force them to go to different regions.

The following example describes how to separate a bridge workload by userid and transaction group. The example uses the same configuration as that described in “Creating workload management definitions using the WUI” on page 153.

Add the following definitions to the definitions that you created in “Creating workload management definitions using the WUI” on page 153.

**Procedure**

1. Create a transaction group.

   a) From the Web User Interface main menu, click **Administration > Workload manager administration > Transaction group definitions**.

      The Transaction group definition view opens, listing any transaction groups already defined in PLXPROD1.

      If the current context is not PLXPROD1, specify PLXPROD1 in the Context field and click Refresh.

   b) Scroll to the bottom of the view, click Create, and provide the following information:

      **Transaction group name**

         TRGBRI01

      **Description**

         Link3270 bridge transaction group

      **Affinity relation and lifetime checking status**

         ACTIVE

      **Primary search criterion**

         User ID
Automatic affinity creation option
N/A
You can leave the remaining fields or accept the defaults.
c) Click Yes.

The Transaction group definition view is redisplayed, now showing the name of the transaction group TRGBRI01.

Leave the Affinity relationship and Affinity lifetime fields blank and the Automatic affinity creation option field set to N/A because CICSPlex SM does not handle affinities between Link3270 bridge transactions.

**Note:** If you want to separate by LUNAME, you must enter LUNAME in the Primary search criterion field of the Transaction group definition create view.

2. Identify the transactions in group TRGBRI01.
   a) In the Transaction group definition view, select the entry for TRGPAY03, and click Add transaction.
   b) Type the name BRI1 in the Transaction name field, and click Yes to confirm.

   The Transaction group definition view is redisplayed.

3. Repeat the previous two steps for any further transactions that you want to be routed to different regions.

4. Create a workload definition.
   a) From the main menu, click Administration > Workload manager administration > Definitions.
   The Workload management definition view opens.
   b) Scroll to the bottom of the view, click Create, and provide the following information:

   **Workload management definition name**
   WLDDBRI01

   **Description**
   Separate Link3270 bridge activities

   **Transaction group name**
   TRGBRI01

   **Terminal LU name**
   *

   **User ID**
   BRIUSER1

   **BTS process type**
   *

   **Scope name of set of target systems**
   CICSPA01

   These values indicate that transactions in group TRGBRI01 entered by BRIUSER1 are to be routed to CICSPA01.
   c) Click Yes to confirm.

   **Note:** If you want to separate by LUNAME, you must enter the LUNAME in the Terminal LU name field of the Workload management definition create view.

5. Repeat the previous step for any further transaction groups you have created for transactions that are to be routed to different regions.

6. Create a workload group.
   A workload group is essential if you want a workload definition to be installed automatically when the routing region that is routing the transactions is started.
   a) From the main menu, click Administration > Workload manager administration > Groups.
The Workload management group view opens, listing any workload groups already created in PLXPROD1.

b) Click Create and type in the following information:

- **Workload management group name**
  WLGBRI01
- **Description**
  Workload Group for WLDBRI01

c) Click Yes to confirm.

The Workload management group view is redisplayed.

7. Add the workload definition WLDBRI01 and any other workload definitions you have created to WLGBRI01.

a) From the main menu, click **Administration > Workload manager administration > Definitions**.

   The Workload management definition view opens.

b) Select the entry for WLDBRI01, click **Add to WLM group**, and provide the following information:

- **Workload management definition name**
  WLDPAY01
- **Description**
  Link3270 bridge workload definition
- **Resource group name**
  WLGBRI01

c) Click Yes to confirm.

d) Repeat for any additional workload definitions that you created earlier.

8. Add workload group WLGBRI01 to workload specification BRSPEC01.

a) From the main menu, click **Administration > Workload manager administration > Groups**.

   The Workload management (WLM) group view opens.

b) Select the entry for WLGBRI01, click **Add to WLM specification**, and type BRSPEC01 in the **Specification name** field.

c) Click Yes to confirm.

9. Install definition into the active workload.

a) From the main menu, click **Administration > Workload manager administration > Definitions**.

   The Workload management definition view opens.

b) Select the entry for WLDBRI01, and click **Install** to install it into the active workload. Click Yes to confirm.

   The workload separation definitions you created take effect immediately.

c) Click Yes to confirm.

What to do next

You can check that the workload definition is active using the Workload definition installed in active workload view.

Administering resources with CICSPlex SM

You can manage all of your CICS and CICSPlex SM resources through any of the following interfaces; the CICS Explorer, the CICS Management Client Interface (CMCI), a WUI view, or using the CICSPlex SM API.

Manage your resource definitions in the following ways:

- Using the CMCI, which accepts HTTP requests from your application.
• Using the CICS Explorer, which takes advantage of CMCI.
• Using the CICSPlex SM Web User Interface (WUI).
• Adding CICSPlex SM API commands directly to your application.

Managing and installing resources
Use Business Application Services (BAS) to manage and install CICS resources that are stored on the CICSPlex SM data repository.

Use CSD to manage and install CICS resources that are stored on the CICS System Definition (CSD) repository.

You must define a CSDGROUP for a CSD resource and a DEFVER for a BAS resource.

Managing resources using Business Application Services (BAS)
Business Applications Services is the component of CICSPlex SM that you use to manage the CICS resource definition and installation process for business applications at your enterprise.

What is Business Application Services (BAS)?
Business Application Services (BAS) is an alternative to resource definition online (RDO) that enables you to manage CICS resources in terms of the business application to which they belong, rather than their physical location in the CICSplex.

A business application can be any set of resources that represent a meaningful entity in your enterprise. Within the application, you can group together resources of a particular type and define the run-time characteristics of that group. At run-time, you can refine the selection of resources to be installed by using a filter expression, and you can change the resource attributes by using an override expression.

Limitations of RDO
RDO is the traditional CICS method of defining resources to CICS systems.

With RDO, resource definitions are tied to a single group and groups that are processed sequentially from a group list. Any duplicate definition found later in the process overrides any earlier one. In addition, the very nature of the definitions that RDO requires and the extent to which they are available to multiple CICS systems can prove limiting. RDO has several disadvantages in a CICSPlex SM environment:

• Resources are assigned to groups that are assigned to specified CICS systems.
• Resource definitions have to be duplicated across CICS systems, unless the CSD is shared.
• Each end of every communications link has to be defined explicitly.

BAS concepts
BAS enables you to view and manage your resources in terms of their use in your business, and independently of their physical location.

This section introduces the basic concepts of the BAS function.

Logical scoping
Once your CICS resources are defined to CICSPlex SM, you can monitor and control resources in terms of their participation in a named business application, rather than their physical location in the CICSpex.

Logically-related resources can be identified and referred to as a set, regardless of where they reside at any given time.

Sets of definitions can be reused and associated with any number of other logical associations of resources that reflect your business needs, rather than your system configuration.

If you set the scope to be your application, any operation or monitoring views will display only those resources that satisfy your selection criteria. This gives you the power to control precisely how those resources are managed.
Multiple versions of a resource definition

With BAS, you can have multiple versions of the same resource.

Each time you create a new definition for the same resource and the same name, BAS allocates a new version number. Note that a new version number is not created if you update the resource. You can specify a specific version of a resource definition by its version number.

Version support allows you to develop resource definitions as your business applications develop. You can then have, for example, a single version of a resource in multiple groups, or multiple versions of the resource throughout the CICSpex. Note that you can install only one version of a resource in a CICS system at one time.

Centralized resource definition

RDO definitions are held in a CICS System Definition (CSD) file. BAS resources are held on a central data repository that is accessed by all the CICS systems in the CICSpex.

The CICSpex SM data repository (EYUDREP) serves as the central repository for all your CICS resource definitions. This minimizes the number of resource definitions you need for your CICSpex by:

- Providing a single system image approach to defining CICS resources across all supported platforms.
- Producing both local and remote instances of a resource from a single definition.
- Managing multiple versions of a definition. For example, you can have different versions of the resources for an application as it progresses through a number of test phases.
- Generating multiple CICS communication links from a single set of connection and session definitions.

CICS system links

With Business Application Services, you can create one set of BAS resource objects to define the connection definitions and reuse them in many CICS regions by using a system link (SYSLINK) object. The established method of defining connections between CICS regions is to use RDO to manually create and install definitions that describe the connection. Each resource definition is unique to the CICS region and cannot be reused in other regions.

The system link definition describes the type of connection and connection definitions that are required to create a connection between a pair of CICS regions. You can use these connection definitions as a model to create any number of system links that share the same characteristics.

You can define different types of connections using SYSLINK objects:

- MRO or ISC connections require CONNDEF and SESSDEF resource objects to describe the CONNECTION and SESSION resources.
- IPIC connections require IPCONDEF and TCPDEF resource objects to describe the IPCONN and TCPIPSERVICE resources.

When you install a SYSLINK that uses these model definitions, the resource definitions are installed in the CICS regions automatically to create the connection.

Distributed resource installation

Resources that are defined to CICSpex SM must still be installed in the appropriate systems, either by CICS or by CICSpex SM.

You can use BAS to install your resources either automatically, at CICS initialization, or dynamically, while a system is running. A single resource can be installed in multiple CICS systems either locally or remotely, as appropriate.

Two forms of BAS

You can use BAS in two ways; The migration form, or in the full-function form. You can use either or both of these forms, depending on the situation and degree of precision you require.

- Migration form, in which resource groups are associated with resource descriptions. In this form, resource descriptions are similar to group lists. See Figure 26 on page 207 and “Using migration form BAS” on page 215.
• Full-function form, in which resource assignments are used to qualify the contents of resource groups and resource descriptions, and to control the assignment of resources to CICS systems. See Figure 27 on page 208 and “Using full-function form BAS” on page 215.

The simplest form is the migration form using resource descriptions. You create resource definitions and resource groups, and associate them with one or more resource descriptions. It is the resource description that defines the logical scope for the resources. The resources are assigned to specific CICS systems and you therefore still need separate definitions for a resource that is local to one system and remote to another. This approach to BAS is similar to using RDO, in that the resource description is analogous to the group list. You in effect create a version of your CSD on the CICSPlex SM data repository. Though this is a good position from which to establish your CICSPlex SM resources environment, you cannot take advantage of all the facilities offered by BAS.

To take advantage of the facilities offered by BAS to manage your resources in terms of the business application rather than location, you need to use resource assignments. A resource assignment selects resources of a particular type from a group, and assigns them to the appropriate CICS system. A resource assignment is associated with a resource description. The resource description then no longer functions like a group list, but becomes a user-defined, logical set of resources, such as an application.

Using resource assignments allows you to manage your individual resources and change their attributes for individual systems, or to suit special circumstances. You can:

• Control resources of a given type in a given group.
• Identify resources as either local or remote, and assign them to various CICS systems with a single resource definition.
• Process selected resources from a group by specifying a filter expression.
• Modify resource attributes for a particular use by specifying override expressions.
Figure 26. Migration form BAS
Advantages of using BAS
The BAS approach to the management of resources offers several advantages over RDO.

The advantages are as follows:

- A familiar, RDO-like definition process with a choice of interfaces (WUI, batch or API).
- Logical scoping, that allows you to handle your resources in terms of business application rather than location.
- A common definition repository for all resources in a CICSplex, across all supported CICS platforms.
- A reduction in the number of definitions required, with the ability to reuse definitions and override individual attributes as needed.
- Consistent resource definitions and a great deal of control over the definition process.
- A resource can be added to additional regions by adding it to the groups that define where the application will run.
- Because the application is known to CICSPlex SM, commands can be directed to a scope that matches the application, not to an arbitrary group of regions.
Managing BAS
Your BAS environment is set up and managed using these WUI view sets and resource administration objects.

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<tr>
<th>WUI view set</th>
<th>Object name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resource assignment definitions</td>
<td>RASGNDEF</td>
<td>A resource assignment describes the characteristics of the selected resource definition type, and how those resources are to be assigned to CICS systems. The assigned resources must all be of one type, for example, files, and must belong to a resource group. A resource can be assigned as both local and remote in one or more CICS systems. Before you can use the resource assignment, you must associate with a resource description; see the Resource description definitions (RESDESC) view. This object is also used to identify the attributes to be used in selecting the resources to be assigned and any attribute values to be changed when the resources are assigned.</td>
</tr>
<tr>
<td>Resource assignments in resource description</td>
<td>RASINDSC</td>
<td>This view displays information about resource descriptions, and the resource assignments associated with them. This information includes, for each resource, its resource group and any assigned CICS system to CICS system group.</td>
</tr>
<tr>
<td>Resource selected by resource assignments</td>
<td>RASPROC</td>
<td>This view displays the resources that will be processed when the specified resource assignment is processed. The resources displayed are selected from those in the associated resource group, using any supplied selection criteria.</td>
</tr>
<tr>
<td>Resource selected by resource description</td>
<td>RDSCPROC</td>
<td>This view displays the resources that will be selected when a specified resource description is processed. The resources can be selected from resource groups that are directly related to the resource description, as in migration form BAS, and from resource assignments, using any selection criteria currently in effect.</td>
</tr>
<tr>
<td>Resource description definitions</td>
<td>RESDESC</td>
<td>A resource description identifies a set of resource groups, and hence resource definitions. You use this object to specify whether or not you want to use logical scoping for this resource description, and the CICS systems for the associated resource groups.</td>
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<tr>
<td>Resource group definitions</td>
<td>RESGROUP</td>
<td>This object is used to associate one or more related resource definitions. The resource definitions may be of the same or different types.</td>
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<tr>
<td>Resource groups in descriptions</td>
<td>RESINDSC</td>
<td>This view displays information about existing resource descriptions and the resource groups associated with them.</td>
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<tr>
<td>Resource definitions in resource groups</td>
<td>RESINGRP</td>
<td>This view displays information about existing resource groups and the resource definitions associated with them.</td>
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<tr>
<td>CICS system link definitions</td>
<td>SYSLINK</td>
<td>This view displays information about the links that exist between CICS systems in the CICSPlex. The information includes the names of the CICS systems and the names of the connection and session definitions used in defining the link.</td>
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<td>WUI view set</td>
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<tr>
<td>CICS system resources</td>
<td>SYSRES</td>
<td>This view displays the resources that will be assigned to a specified CICS system. The resources are selected on the basis of the resource descriptions currently associated with the CICS system.</td>
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<td>WUI view set</td>
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<tr>
<td>Resource definitions</td>
<td>resDEF</td>
<td>For each resource definition type, there is a resource definition object that defines the attributes for that definition. The available resource types (shown in parentheses) and the WUI views used to define them for CICSPlex SM are:</td>
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<td>• Atomservice definitions view (ATOMDEF object)</td>
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<td>• Terminal definitions view (TERMDEF object)</td>
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<td></td>
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<td>• Transaction definitions view (TRANDEF object)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Transaction class definitions view (TRNCLDEF object)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Temporary storage model definitions view (TSMDEF object)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Typeterm definitions view (TYPTMDEF object)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• IBM MQ connection definition view (MQCONDEF object)</td>
</tr>
</tbody>
</table>
The object models showing the relationships between these objects are shown in Figure 28 on page 212 and Figure 29 on page 213. The view titles are followed by the resource name in parentheses.

Figure 28. The migration form BAS object model
Migrating your resource definitions
You do not have to re-create your resource definitions and resource groups in BAS. You can migrate your existing CSD structures.

About this task
To move your resource definitions and resource groups from your CSDs to the data repository, use the following process. This process maintains the relationship between resources and groups. You can migrate all or part of a CSD, or more than one CSD, at any one time.

Procedure
1. Use the EXTRACT command of the DFHCSUDP utility routine to read the CSD records.
2. Use the CICSPlex SM extract routine EYU9BCSD to create batched repository-update facility commands.

3. Input these commands to The batched repository-update facility in Administering to create resource definitions and resource groups, and the objects that link them.

Defining resources
You can use BAS to define and maintain resource definitions across a CICSpex. By creating resource definition objects in the data repository, you can use these objects as templates for creating large numbers of resource definitions.

The definition of resources for CICSPlex SM is similar to CICS RDO. To define a resource, you create a resource definition object. You describe the attributes of the resource in the definition but you do not have to define every occurrence of every resource; you can use a small number of resource definitions as templates for the creation of large numbers of resources. The resource definitions are stored in the data repository for the CICSpex.

The differences between CICSPlex SM resource definition objects and CICS resource definitions are:

- The same resource definition can be used by any CICS region in the CICSpex, across all supported platforms.
- You can define to CICSPlex SM all the attributes of each resource, including both local and remote values. CICSPlex SM determines the correct subset of attributes to use when the resource definition is assigned to a CICS region.
- You do not have to define every instance of your resources from scratch. You can create a resource definition as a “template” for many resources with similar, even identical, attribute values. You can specify temporary or permanent variations, called overrides, for CICSPlex SM to create resources with different sets of values.
- You can create multiple versions of the same named resource definition. Each version is effectively a different resource definition, and can be used by different CICS systems or for different system requirements. For example, you might have different resource requirements for development and test systems. See “Validating resources” on page 214.

You can create resource definition objects in three ways:

- Using the administration views in CICS Explorer or the BAS administration and definition views in the Web User Interface
- Using the batched repository-update facility (see The batched repository-update facility)
- Using the CICSPlex SM API; see Developing CICSPlex SM applications.

Validating resources
BAS performs many of the same resource definitions checks as RDO does.

As individual resources are defined and installed, BAS checks:

- Individual attributes of a resource
- Interdependent resources attributes
- Release-specific resource attributes

In addition, BAS checks that each set of resources is consistent. Every time you make a change to a resource set, BAS checks that the resource being added or updated is not in conflict with a resource already in the CICS system. For example, you would get an inconsistent set error if you tried to assign different versions of the same resource to the same CICS system, or assign a resource as both local and remote.

BAS also provides a MAP function that allows you to check that your resource associations are what you want. You use this facility to display the structure of your resource associations, starting at any point in hierarchy.
**Defining resource groups**

A resource group is a set of related resource definitions that you want to manage as a unit. Resources groups are defined using the **Resource group** view (RESGROUP object). The resource definitions in a group may be of the same type or of different types, but usually have something in common. They might be logically related by their use in a given application or communications network, or geographically related by their use at a given site.

There is no real limit to the number or combination of resource definitions that can make up a group. However, only one version of any given resource can be included in a resource group at one time. You have to maintain each version of a resource definition in a different resource group.

**Using migration form BAS**

With migration form BAS, your resource groups are associated directly with **resource descriptions**.

A resource description specifies whether or not you are using logical scoping, and the CICS systems for the resource groups associated with the resource description. See Figure 28 on page 212.

When you have migrated or defined your resources and resource groups, you need to create resource descriptions to define your applications. Resource descriptions are defined using the RESDESC object. A resource description is directly related to one or more resource groups that are to be managed as an entity. In the migration form BAS model, this relationship can be considered to represent a logical scope, but the resource description is really analogous to a RDO group list, in that all the resources are tied to a given CICS system or CICS system group.

**Using full-function form BAS**

With full-function form BAS, resource groups are not associated directly with resource descriptions.

An additional object, the **resource assignment** (RASGNDEF), defines the characteristics and usage of a selected resource type from a resource group. The resource assignment is associated with a resource description, which can then be used to represent a business application. See Figure 29 on page 213.

These objects are used to define your resources in terms of their business application.

**Using resource assignments**

Power and flexibility in the management of resources is offered by the **resource assignment** (RASGNDEF) object.

**Note**: If you are using the migration form of BAS, you do not use resource assignments.

Each resource assignment relates to one resource type within a resource group, and it must be associated with a resource description, if it is to be used in logical scoping or automatically installed. Each resource group can be in more than one resource assignment.

You can further refine the selection of resources within the type specified by the resource assignment by using a filter expression, and you can change the resource attributes using an override expression. You can combine in the expression an unlimited number of attribute values, using the logical operators AND, OR, and NOT. When the resource description is specified as the scope, CICSPlex SM processes only those resources that meet the specified selection criteria. This gives you a great deal of control over the management of your resources.

Each resource assignment must be added to a resource description, if it is to be installed and used in logical scoping. Creating resource assignments and adding them to a resource description enables you to manage sets of resources with a logical scope that can span many CICS systems. In this case, the resource description becomes, in effect, a user-defined, logical set of resources, such as an application.

You might have several different resource descriptions associated with a given CICS system, each one representing a different set of resources.

For example, with a resource assignment, you can:

- Select specific resources from a resource group.
- Identify the CICS systems where local and remote instances of a resource should be assigned.
• Temporarily override the values of specific resource attributes.

The resources selected by a resource assignment cannot be managed independently. The resources must be members of a resource group and the resource assignment must be associated with at least one resource description.

**Using resource descriptions**

With full-function BAS, a resource description represents an application, that is, a set of logically-related resources that can span more than one CICS system. The resource description thus identifies the logical scope of the application.

Each resource group to be used as part of the application must be added to the resource description. You can associate whole resource groups with a resource description to create a larger set of resources (much like a CSD group list). This allows you to manage the resources more efficiently. The set of resources identified in a resource description can be:

- Identified as a logical scope (such as an application) for use in subsequent CICSPlex SM requests
- Installed either automatically, when the CICS system identifies itself to CICSPlex SM as a MAS, or dynamically, while the CICS system is up and running.

The BAS objects that are used for creating and managing these resource associations shown in Figure 28 on page 212 and their functions are summarized in Table 14 on page 209.

**Installing applications and resources**

Optionally, as an alternative to installing resources from the CSD, you can use BAS to install your resources, from the data repository.

BAS allows you to install all the resources associated with an application, by installing the resource description, or one resource group. BAS applies any resource assignments you have associated with the application resource description or resource group, and selects the actual resources to be installed on the basis of those criteria. Alternatively, you can install an individual resource into one or more CICS systems, either locally or remotely, as appropriate.

BAS can install resources either automatically at system initialization time or dynamically into an active CICS system. Before installing a resource, CICSPlex SM performs checks to determine whether the resource already exists in the CICS system. The normal situation is that if the resource exists, the new resource is considered a duplicate and is not installed. However, when you dynamically install resources, BAS offers the option of bypassing the duplicate resource checking and forcing the unconditional installation of resources.

**Automatic installation**

When a CICS system initializes and identifies itself to a CMAS, BAS reviews the resources associated with that system and decides the set of resources to be installed.

**Dynamic installation**

You can install resources dynamically into an active CICS system by clicking the install button either from the appropriate resource definition view, or from one of the following views:

- **Resource group definitions** view.
- **Resource description definitions** view.
- **System link definitions** view.

**Security considerations**

Because of the importance of resource definitions to your CICSPlex SM environment, you need to consider carefully the implications of allowing users access to certain types of resource or to certain functions.

You can allow a user to have access to all resource definition views and their related administration views, or you can restrict access to the definition views for a particular resource type. You can also define the type of access a user has, for example, one user might have read-only access to ISC/MRO connection definitions views (CONNDEF object) and Session definitions views (SESSDEF object), but update access (which permits creation and administration of resources) to all other resource types. You need to make
sure that the BAS views are adequately protected, so that unauthorized users cannot create and administer resources.

You should also take care if you are running CICS TS, and are using the EXEC CICS CREATE command to build new resources. Any definition created with the CICSpex as the context is automatically distributed to all CMASs in the CICSpex. Therefore, giving a user authority to create BAS objects is potentially equivalent to giving authority to install resources on any CICS system in the CICSpex. When the CICS system starts, there is no check on who installed the resource in the system.

For details on setting up security for CICSpex SM at your enterprise, see BAS security considerations.

Planning for BAS

BAS allows you to create CICSpex SM objects that define your resources and to group them in such a way that you have close control over the running of your applications.

You do not have to transfer all your CSD resources to CICSpex SM at the same time, neither do you have to decide at the outset which approach you will use. You can extract the resource definition records from one or more CSDs, or only a subset of records from one CSD. You can move directly to using full-function BAS, or you can use migration form BAS, and gradually move towards full-function BAS. You can use RDO, migration form BAS, and full-function BAS in the same CICSpex.

This section poses some of the questions you might like to consider when you start planning to implement BAS in your enterprise:

• If you are going to use the extract facilities:
  – In what order do you want to extract your CSDs?
  – Do you want all the records from a CSD or a subset?
  – Are you going to extract more than one CSD at a time?
• Are you going to use the migration form approach?
• Are you going to implement full-function BAS? You then need to think about how your business applications use resources and the assignments you need to create.
• Which resources are to be installed automatically and which are to be installed dynamically?
• Which definitions are required before PLT processing? Definitions required before PLT phase 2 processing must be in the CSD.
• Where are the resources to be installed?
• Do you need to define manually any resources that are not defined in the CSD?
• What security measures do you need to implement? (See “Security considerations” on page 216).

The CICS Interdependency Analyzer can assist you in the planning and understanding of your application resource flow; it shows you:

• Transaction resource dependencies; that is, the sets of resources used by individual CICS transactions, and on which the transactions depend in order to run successfully
• Transaction affinities; that is, those groups of transactions that have affinities with each other, meaning that the whole group must be installed in the same region, or in a particular region

For more information about CICS Interdependency Analyzer, see CICS Interdependency Analyzer for z/OS.

Implementing BAS

This section describes a route you could take to implement BAS on your CICSpex.

Creating migration for BAS

The first stage in the process of moving to using BAS is to migrate your resources from CICS to CICSpex SM:

• Move your resource definitions, resource groups, and the relationships between them, from the CSD to the CICSpex SM data repository. This process, which is described in “Migrating your resource
definitions” on page 213, gives you an intermediary resource hierarchy that is very like CEDA, in that each resource definition is in a resource group.

• Create definitions and groups for any resources that are not held on the CSD.
• Create applications by associating each resource group with a resource description.

There are no resource assignments and, although you can now run your CICSPlex SM system perfectly satisfactorily, you will not be taking advantage of the special functionality offered by BAS.

Once you have extracted your CEDA definitions, you can proceed to migrate your resource definitions to full BAS function, as described in “Migrating to the use of resource assignments” on page 218.

Migrating to the use of resource assignments
You don't have to migrate all your resources to resource assignments at the same time.

You can identify certain resources in which you are interested, remove them from direct association with resource definitions, and create resource assignments, using the **Resource assignment definitions** view (RASGNDEF object) for them. When you are happy with the resource assignments, you can move on to defining another set of resource definitions.

As you move towards processing your resource definitions more full-functionally, you should remove resource groups from direct association with a resource description and identify them instead in one or more resource assignments.

**Note:** You can use the same resource description to manage both whole resource groups and selected resources identified in resource assignments. As you begin to take advantage of the resource assignment capabilities, you may have to update some of the underlying resource definitions. For example, a resource definition that was previously associated as is with a CICS system might require additional attributes before it can be assigned as both a local and remote resource in different CICS systems.

A recommended approach
When you decide to implement BAS functions in your enterprise, you should begin by defining the appropriate objects.

This section summarizes the preceding sections. You should:

• Extract resource definitions and resource groups from the CSD, as described in “Migrating your resource definitions” on page 213. Alternatively:
  – Use the appropriate resource definition views to create resource definitions.
  – Use the **Resource group definitions** view to create resource groups (RESGROUP objects).
• Use the **Resource assignment definitions** view to create resource assignments (RASGNDEF object).
• Use the **Resource description definitions** view to create resource description to associate the definitions and assignments just created (RESDESC object).

Then, to create associations between these objects:

• Use the appropriate resource definition view to add resource definitions to a resource group (RESINGRP object).
• Use the **Resource group definitions** (RESGROUP) view to add the resource group to a resource description (RESINDESC object).
• Use the **Resource assignment definitions** view (RASGNDEF object) to associate the resource assignment with a resource description (RASINDSC object).
• Use the **Resource assignment definitions** view (RASGNDEF object) to associate the resource assignment with a CICS system or CICS system groups.

You can use the Map action button to display a visual map of the BAS definitions in your data repository. If you want to see a list of the objects and associations you have already defined, use the **Resource definitions in resource groups** view (RESINGRP object).
Where next?
Once you have identified your BAS requirements, you need to set up your resources and their associations. This is described in Creating resources with BAS.

The Discovery Library Adapter for CICS

The Discovery Library Adapter (DLA) for CICS is a utility that collects information during runtime about CICS and CICSpHlex SM resources. It generates XML files that can be used by a discovery library reader to track these resources and their interdependencies across your enterprise.

The CICS DLA uses CICSpHlex SM services to generate XML files that conform to the Discovery Library IdML XML schema and Common Data Model. The XML files called discovery library books can be loaded by several products including Tivoli® Change and Configuration Management Database (CCMDB) and Tivoli Business Service Management (TBSM).

The CICS DLA operates against all the CICSpHlexes that are associated with a specified CMAS. The specified CMAS must be running at the current release level; however, the CICS regions discovered by the DLA can be at earlier release levels, as allowed by the cross-release support rules for CICSpHlex SM.

To use the CICS DLA you run EYUJXDD0 as a batch job on a z/OS system. Running the DLA creates IdML discovery library books in a PDS data set. The DLA also writes control files and debug information to this data set.

When you run the DLA, it can generate three types of discovery library books:

- One CTSPLEX discovery library book containing summary information about discovered CICSpHlexes
- One or more CICSPLEX discovery library books containing information about the CICS system topology in a CICSpHlex and also the CICSpHlex SM logical scopes and their associated resources.
- One or more CICSREGION discovery library books containing information about CICS resources associated with a CICS region

The DLA also generates FTP PUT and RENAME statements to facilitate the transfer of the discovery library books to the discovery library file store (DLFS) located on your local system or accessible through a network connection. You control whether the FTP transfer is carried out as part of the DLA run or is done later as an independent operation.

From the DLFS you can load the discovery library books into CCMDB or TBSM using FTP or another transfer mechanism.

You control the output of the DLA using input parameters. These parameters control the range and depth of the discovery and specify which discovery library books are created. The parameters also set general options about the operating environment, including the name of the CMAS under which the discovery takes place. You can supply these parameters in startup JCL or in an input file referred to by the parameter DD statement in the JCL.

You can run the DLA in either create mode or refresh mode:

- Create mode is the default. In this mode, the DLA produces a snapshot of your CICSpHlexes. The DLA produces discovery library books that might not contain information about all affected resources because some are not currently active.
- In refresh mode, the discovery library books contain everything known about the environment. The reader treats as obsolete anything that was previously loaded from a similar discovery library book and is not in this discovery library book. CCMDB and TBSM support refresh mode by deleting these obsolete resources. Refresh mode can be useful when there has been a significant configuration change but you should use it with caution because of the large amount of processing that might be involved.
Running the CICS DLA

To use the CICS DLA, you specify the necessary DLA parameters with startup JCL file, run the DLA utility as a batch program, then transfer the discovery library books in the resulting data set to the discovery library file store for exploitation by a discovery library reader.

Before you begin

- Ensure that CICS and CICSPlex SM are properly installed and configured. You must install CICSPlex SM because the CICS DLA uses the CICSPlex SM API.
- Ensure that you have the necessary update access to the partitioned data set used for the IdML output of the DLA.

About this task

This task assumes that you want to use FTP to transfer the DLA output to your DLFS. If you use a transfer mechanism other than FTP, you must ensure the discovery library books are saved in the DLFS using the correct naming conventions.

To run the DLA:

Procedure

1. Open the sample JCL file EYUJXDD0 in the SEYUSAMP library for editing.
   EYUJXDD0 contains startup JCL and sample input parameters for controlling the operation of the DLA.
2. Enter high-level qualifiers for CICS, CICSPlex SM, and for the CICS DLA partitioned data set by overtyping the parameter values in CPSMHLQ=@thlq@.CPSM, CICSHLQ=@thlq@.CICS with your own values.
3. Specify the CMAS, your z/OS IP host name, and your organization name using the mandatory SET CMAS, SET HOSTNAME, and SET ORGNAME parameters respectively.
4. Ensure that the SET FTP parameter is set to YES, the default.
   With this parameter set to YES, if the operation runs successfully, the DLA automatically transfers the discovered data to the DLFS as part of the DLA operation. FTP PUT and RENAME statements are always generated as part of the DLA run regardless of the SET FTP parameter.
5. Specify the remaining SET parameters. If you want to accept the default values, you do not have to make any changes. If you want to make changes to any parameters, overtype the defaults with your own values. For example, if you want to run the DLA in refresh mode, specify SET REFRESH YES.
6. Specify the BOOK TYPE parameters.
   These three parameters control which of the three types of discovery library books are generated, and also which information the discovery library books contain.

You can include multiple instances of each of these parameters and use the optional cplexname or cics_name attributes to include or exclude the specific CICSPlexes or CICS regions from the information gathering process. The default for each of these parameters is YES, which means that all discovery library books of the specified type are included in the discovery. If you want to select specific discovery library books, set the parameter to NO, to suppress the discovery of all discovery library books of that type, and then add one or more subsequent parameters specifying the discovery library books to be selected. For example, if you want to select only the CICSPLEX discovery library book named pllex1 specify:

<table>
<thead>
<tr>
<th>BOOK TYPE</th>
<th>CICSPLEX</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOOK TYPE</td>
<td>CICSPLEX.plex1</td>
<td>YES</td>
</tr>
</tbody>
</table>

   If you specify BOOK TYPE CICSPLEX.plex1 NO, the DLA generates an discovery library book for each CICSPlex associated with the CMAS except CICSPlex plex1.
You can also specify partial CICSplex or CICS region names. For example, to select only CICS regions beginning with the letter a, specify:

<table>
<thead>
<tr>
<th>BOOK TYPE CICSREGION NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOOK TYPE CICSREGION.a YES</td>
</tr>
</tbody>
</table>

If you omit `cplexname` or `cics_name` attributes, the parameter applies to all of the CICSplexes or CICS regions associated with the CMAS.

Using multiple instances of the same `BOOK TYPE` parameter can lead to consequences that are difficult to predict. The DLA processes these parameters in the order that they are included in the input file. It is therefore possible for one parameter to conflict with an earlier one.

7. Save and submit the EYUJXDD0 module to start the DLA operation.

The DLA populates a partitioned data set with discovery library books containing the discovered data. The default name of the data set is `hlq.cmas.CICSTS.DLAnnn.IDML`, where `hlq` is the high-level qualifier you supply, `cmas` is the name of the CMAS specified in the `SET CMAS` parameter, and `nnn` is the CICS version number, for example 660. If the data set already exists, its contents are overwritten with the newly discovered data.

The DLA also creates FTP PUT and RENAME statements in to facilitate the transfer of the data.

If the DLA operation is successful, it generates a return code of zero, then continues and transfers the discovered data to the DLFS using the FTP statements in the data set member @FTPRUN.

If the DLA generates a nonzero return code, or if you have specified `SET FTP NO`, the DLA does not carry out the FTP part of the operation. You can run the EYUJXDD1 module at any time to carry out the FTP step independently. In this case, the DLA uses the FTP statements from the @FTPALLP or @FTPCHGP data set members to transfer the data.

**Results**

After transferring the DLA output, your DLFS contains the discovery library books required for validation and exploitation by your discovery library reader.

### The CICS DLA package

The CICS DLA is shipped as a series of modules in the SEYUAUTH, SEYULOAD, SEYUSAMP, and SEYUPROC CICSplex SM libraries.

**Table 15. DLA modules**

<table>
<thead>
<tr>
<th>Modules</th>
<th>Library</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EYU9XDDA</td>
<td>SEYULOAD</td>
<td>Includes the main program and any other EYU9XDDc programs it calls.</td>
</tr>
<tr>
<td>EYUJXDD0</td>
<td>SEYUSAMP</td>
<td>Batch JCL for calling procedure EYUJXDDP to run the DL and transfer the IdML members to the DLFS.</td>
</tr>
<tr>
<td>EYUJXDD1</td>
<td>SEYUSAMP</td>
<td>Batch JCL to transfer the IdML members to the DLFS as a stand-alone job.</td>
</tr>
<tr>
<td>EYUJXDDP</td>
<td>SEYUPROC</td>
<td>Procedural JCL for running the DLA.</td>
</tr>
<tr>
<td>EYUMC1</td>
<td>SEYUAUTH</td>
<td>Simplified Chinese message load modules.</td>
</tr>
<tr>
<td>EYUMC2</td>
<td>SEYUAUTH</td>
<td>English language message load modules.</td>
</tr>
<tr>
<td>EYUMC3</td>
<td>SEYUAUTH</td>
<td>Japanese Kanji message load modules.</td>
</tr>
</tbody>
</table>
CICS DLA sample module EYUJXDD0

EYUJXDD0 contains JCL for starting EYUJXDDP to run the DLA.

```
//EYUJXDD0 JOB CLASS=A,MSGCLASS=A,NOTIFY=&SYSUID
//  JCLLIB ORDER=(@thlq@.SEYUPROC)
//*
****************************************************************************
//* MODULE NAME = EYUJXDD0 *
//* DESCRIPTIVE NAME = %PRODUCT CPSM Batch Utility Program
*   Sample JCL for invoking EYU9XDDA *
//* @BANNER_START  02 *
//* Licensed Materials - Property of IBM *
//* "Restricted Materials of IBM" *
//* 5665-M15 *
//* (C) Copyright IBM Corp. 1990, 2006 *
//* @BANNER_END *
//* STATUS = %EUR *
//* CHANGE ACTIVITY :
*  $MOD(EYUJXDD0),COMP(DAT),PROD(%PRODUCT): *
*  **
*  PN= REASON REL YYMMDD HDXIII : REMARKS *
*  $L0= 906  %EU 080723 HDJXSRW: Walkthrough updates *
*  $P1= D22432 %EU 081009 HDJXSRW: Sample JCL changes *
*  $P2= D22801 %EU 081128 HDGFCAI: Correct DLA JCL *
*  $P3= D26484 %EU 091049 HDGPGKR: JCL Error in EYUJXDD0 *
*  $P4= D26354 %EU 090505 HD4HAPF: JCL errors *
*  **
*****************************************************************************
//* Member EYUJXDD0 required variables are: *
//* @thlq@  - High level target library index *
//* @hlq@   - A user defined qualifier for the DLA *
*****************************************************************************
//* The following in-stream procedure is executed by step EYUJXDD0. *
//* The parameters should be defined before execution, including *
//* the parameter outlined in the SYSIN statement. Also SET any *
//* optional input parameters required in the SYSIN statement. *
*****************************************************************************
//EYUJXDD0 EXEC EYUJXDDP,REGION=4096K,
//     CPSMHLOQ=@thlq@.CPMS,
//    CICSHLOQ=@thlq@.CICS
//EYU9XDDA.SYSIN DD *
SET CMAS CMASNAME
SET HOSTNAME HOST_NAME
SET ORGNAME ORGANIZATION_NAME
//
//EYU9XDDA Syntax Quick Reference:
//
/*comments: a * in column one indicates a comment line
/*wildcards: resource_type and resource_id may be set to a * to *
/* indicate a generic value.
/*
/*SET MESSAGE_LANGUAGE CHS|ENU|JPN
/* Sets the required language for message outputs. The default is
/* English (ENU).
/*
/*SET CMAS CMASNAME
/* Sets the CMAS name for which the CICS TS DLA run is to be
/* performed.
/*
/*SET FEEDBACK QUIET|VERBOSE
/* Controls the amount of information displayed by EYU9XDDA
/* when a CICSPlex SM API error occurs:
/* QUIET (the default) only basic error messages are
/* written.
/* VERBOSE CICSPlex SM Feedback data (if available) will be
```

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//** displayed.
//**
//** SET HOSTNAME hostname
//** Sets the name of host session. No default exists.
//**
//** SET ORGNAME ORGANIZATION_NAME
//** Sets the name of the organization. The default is SET ORGNAME
//** <defaultOrg>. This is a special value that tells CCMDB that the
//** CICS resources are related to the CCMDB defined default
//** organization.
//**
//** SET LIMIT (1-99999999)
//** An integer specifying a limit to the number of resources to be
//** discovered. The default is 10000.
//**
//** SET REFRESH YES|NO
//** Sets the type of DLA run to be performed. SET REFRESH YES will
//** cause readers of the books (CCMDB and TBSM) to delete existing
//** data from the corresponding books provided by the CICS TS DLA.
//** The default is NO.
//**
//** SET FTP YES|NO
//** Sets the type of FTP run to be performed.
//** The default is NO.
//** SET FTP NO will transfer no books to the DLFS
//**
//** SET FTP YES will transfer books to the DLFS, based upon the
//** setting of the SET REFRESH parameter as follows:
//** When SET REFRESH YES, then the @FTPALLP member is used to
//** transfer all IDML books generated by EYU9XDDA.
//** When SET REFRESH NO, then the @FTPCHGP member is used to
//** transfer all IDML books which have been changed by EYU9XDDA.
//**
//** SET IGNORE_CHECKSUMS YES|NO
//** The DLA calculates a CHECKSUM for each book it creates and only
//** replaces a previously discovered book if the CHECKSUM is
//** different. The default is NO, meaning that the CHECKSUM will be
//** calculated.
//**
//** SET CONSOLE_MESSAGES YES|NO
//** Allows an MVS SLIP trap to be set and triggers a dump for a
//** specified message to aid covered problem determination.
//** Can only be used with English messages.
//**
//** BOOK TYPE CICSPLEX.nnnnnnnn YES|NO
//** Checks whether the CICS TS DLA should produce an output book for
//** the data about all the discovered CICSplices. The default is YES.
//** You can suppress outputting of books by supplying a full or
//** partial CICSpex name
//**
//** BOOK TYPE CICSREGION.nnnnnnn YES|NO
//** Checks whether the CICS TS DLA should produce an output book with
//** a summary of all the discovered CICSregions. The default is YES.
//** You can suppress outputting of books by supplying a full or parti
//** ial CICSregion name
//**
//** BOOK TYPE CTSPLEX.nnnnnnnn YES|NO
//** Checks whether the CICS TS DLA should produce an output book with
//** a summary of all the discovered CICSplices. The default is YES.
//**
//** If the DLA completed successfully then the FTP program is
//** invoked to transfer the IDML to the DLFS.
//**
//** EYU9XDDA FTP Syntax Quick Reference:
//**
//** <dlfs-hostname>
//** Define the name of the DLFS server to FTP the IDML books to.
//**
//** <username>
//** The name of the user to login in to the DLFS server.
//**
//** <password>
//** Password required for <username>.
//**
//**</u/userdirectory>
//** Define the target directory to store the IDML book in.
//**
//** IF (RC = 0) THEN ; Only FTP if the DLA was successful
//** FTPSTEP EXEC PGM=FTP,REGION=2048K
//** SYSPRINT DD SYSOUT=*
CICS DLA sample module EYUJXDD1
The EYUJXDD1 module contains JCL for transferring IdML members to the DLFS as a stand-alone job.

```c
//EYUJXDD1 JOB CLASS=A,MSGCLASS=A,NOTIFY=&SYSUID
//*
/*******************************************************************************
//*                         MODULE NAME = EYUJXDD1                           *
//*                         DESCRIPTIVE NAME = %PRODUCT CPSM Batch Utility Program  *
//*                              Sample JCL for CICS DLA FTP                  *
//*                         @BANNER_START                           02       *
//*                           Licensed Materials - Property of IBM        *
//*                         "Restricted Materials of IBM"                  *
//*                           5655-M15                                   *
//*                         (C) Copyright IBM Corp. 1990, 2006              *
//*                         @BANNER_END                                    *
//*                         STATUS = %EUR                                *
//*                         CHANGE ACTIVITY :                          *
//*                           $MOD(EYUJXDD1),COMP(DAT),PROD(%PRODUCT):     *
//*                           $L0= REASON REL YYMMD HDXIII : REMARKS          *
//*                           $L0= 906   %EU 090126 HDGFCAH: Initial development     *
//******************************************************************************
//*/
//EYU9XDDA FTP Syntax Quick Reference:
//*/
//*/<dlfs-hostname>
//* Define the name of the DLFS server to FTP the IDML books to.
//*/<username>
//* The name of the user to login in to the DLFS server.
//*/<password>
//* Password required for <username>.
//*/</u/userdirectory>
//* Define the target directory to store the IDML book in.
//*/
//*/FTPSTEP  EXEC PGM=FTP,REGION=2048K
//SYSPRINT DD   SYSOUT=*  
//SYSSBEND DD   SYSOUT=*
//IDMLFILE DD   DISP=SHR,DSN=HLQ.CMAS.CICSTS.DLANNN.IDML
//INPUT DD   *
<dlfs-hostname>  
<username>  
<pASSWORD>  
</u/userdirectory>  
pwd  
CD </u/userdirectory>  
lcd //DD:IDMLFILE  
/*
  DD DISP=SHR,DSN=HLQ.CMAS.CICSTS.DLANNN.IDML(@FTPRUN)
/*
*/
```
CICS DLA sample module EYUJXDDP

The EYUJXDDP module contains procedural JCL for running the DLA.

```plaintext
//**************************************************************
//*                                                          *
//*   MODULE NAME = EYUJXDDP                                 *
//*                                                          *
//*   DESCRIPTIVE NAME = %PRODUCT CPSM Batch Utility Program   *
//*                   Sample JCL for invoking EYU9XDDDA         *
//*                                                          *
//* @BANNER_START  02                                       *
//*                                                          *
//* "Licensed Materials - Property of IBM"                    *
//*                                                          *
//* "Restricted Materials of IBM"                            *
//*                                                          *
//* 5655-M15                                                 *
//*                                                          *
//* @BANNER_END                                              *
//*                                                          *
//* STATUS = %EUR                                             *
//*                                                          *
//* CHANGE ACTIVITY :                                        *
//*                                                          *
//* $MOD(EYUJXDDP),COMP(DAT),PROD(%PRODUCT):                 *
//*                                                          *
//* PN= REASON REL YYMMDD HDXIII : REMARKS                   *
//* $L0= 906   %EU 080613 HDJ5RW : Initial development       *
//* $L1= 906   %EU 080723 HDJXSRW: Walkthrough updates       *
//* $P1= D22432 %EU 081009 HDJXSRW: Sample JCL changes       *
//* $P2= D22801 %EU 081128 HDGFCAH: Correct DLA JCL          *
//* $P3= D26122 %EU 090423 HDGPGKR: JCL error in EYUJXDDP    *
//* $P4= D26354 %EU 090505 HD4HAPF: JCL errors               *
//*                                                          *
//*******************************************************************
//*                                                          *
//* Member EYUJXDDP required variables are:                  *
//*------------------------------------------------------------*
//* @thlq@   -  High level target library index               *
//* @hlq@    -  A user defined qualifier for the DLA          *
//*******************************************************************
//EYUJXDDP PROC CPSMHLQ=@thlq@.CPSM,
//              CICSHLQ=@thlq@.CICS
//EYU9XDDA EXEC PGM=EYU9XDDA
//STEPLIB  DD   DISP=SHR,DSN=&CPSMHLQ..SEYULOAD
//         DD   DISP=SHR,DSN=&CPSMHLQ..SEYUAUTH
//         DD   DISP=SHR,DSN=&CICSHLQ..SDFHAUTH
//         DD   DISP=SHR,DSN=&CICSHLQ..SDFHLOAD
//SYSPRINT DD   SYSOUT=*
//SYSDUMP  DD   SYSOUT=*
//IDMLFILE DD   DSN=@hlq@.CMAS.CICSTS.DLANNN.IDML,
//              DISP=(NEW,CATLG,DELETE),
//              DCB=(DSORG=PS,RECFM=FB,LRECL=250,BKSIZE=4000),
//              SPACE=(CYL,(25,10,25),RLSE)
//**
//** SYSMDUMP DD DISP=(,CATLG),DSN=@userid@.EYU9XDDA.SYMDUMP,
//** UNIT=SYSDA,SPACE=(CYL,(50,25)),
//** DCB=(DSORG=PS,RECFM=FS,LRECL=4160,BKSIZE=24960)
//** Un-comment the SYSMDUMP DD statement if you need to add a
//** SYSMDUMP DD.
//** You may need to modify this statement to meet your
//** installations requirements
//**
//EYUSYSIN DD   DDNAME=SYSIN
//PEND
```

DLA parameters

You control the output of the CICS DLA using parameters that you include in the SYSIN DD card of the EYUJXDDO JCL file. The DLA SET parameters specify general options such as the organization name and debug options. DLA BOOK TYPE parameters control which discovery library books are written.

The DLA parameters are as follows:
BOOK TYPE CICSPLEX {YES | NO}
Determines whether the DLA creates a CICSPLEX discovery library book and controls which CICSPlexes to include in the discovery. Specify one of the following values:

- YES to include the selected CICSPlexes in the discovery.
- NO to suppress the selected CICSPlexes from the discovery.

The default is YES.

cplexname is an optional character string containing the name of a CICSPlex. You can use partial names or a trailing asterisk (*) as a wildcard character. You can use cplexname with either the YES or NO option to restrict the discovery to specific CICSPlexes. If you omit cplexname, all the CICSPlexes associated with the CMAS are included in or excluded from the discovery.

You can use multiple BOOK TYPE CICSPLEX parameters. The DLA processes multiple parameters in the order in which you include them in the input file.

BOOK TYPE CICSREGION {YES | NO}
Determines whether the DLA creates a CICSREGION discovery library book and controls which CICS regions to include in the discovery. Specify one of the following values:

- YES to include the selected CICS regions in the discovery.
- NO to suppress the selected CICS regions from the discovery.

The default is YES.

cics_name is an optional character string containing the name of a CICS region. You can use partial names or a trailing asterisk (*) as a wildcard character. You use cics_name with either the YES or NO options to restrict the discovery to specific CICS regions. If you omit cics_name, all of the CICS regions associated with the CMAS are included in or excluded from the discovery.

You can use multiple BOOK TYPE CICSREGION parameters. The DLA processes multiple parameters in the order in which you include them in the input file.

BOOK TYPE CTSPLEX {YES | NO}
Determines whether the DLA creates a CTSPLEX discovery library book containing a summary of the discovered CICSPlexes. Specify one of the following values:

- YES to produce a CTSPLEX discovery library book with a summary of all CICSPlexes discovered by the DLA
- NO to suppress the output discovery library book for the CTSPLEX CICSPlex summary.

The default is YES. You can include no more than one instance of this parameter.

SET CMAS CMAS_name
The name of a CMAS. The CMAS must be running at the CICS TS 4.1 release level. The DLA discovers information about the CICSPlexes connected directly to this CMAS, and about CICSPlexes connected to other CMASs associated with this CMAS.

SET CONSOLE_MESSAGES {YES | NO}
Use this parameter only under the supervision of IBM support staff.

Specify one of the following values:

- YES to copy messages to the MVS console.
- NO to bypass copying messages to the MVS console.

The default is NO.

Console messages are always displayed in English because the console does not support the double-byte character sets necessary to display the alternative languages.

SET FEEDBACK {QUIET | VERBOS E}
FEEDBACK specifies how the DLA handles exception condition reporting if an error is returned from the CICSPlex SM API. The options are as follows:
QUIET: the DLA writes only progress messages and exception conditions. QUIET is the default FEEDBACK option.

VERBose: in addition to the standard message reporting response and reason codes, the DLA writes any associated CICSplex SM feedback data.

All feedback information is sent to the SYSPRINT DD destination and the @DIALOG file.

SET FTP {YES | NO}
Specify one of the following values:
• YES to transfer discovered data to the discovery library file store (DLFS) as part of the DLA run.
• NO to suppress the transfer.

The FTP transfer takes place only if the DLA discovery operation completed successfully with a return code of zero. If you specify NO, or if the DLA run does not complete successfully, you can transfer the data to the DLFS as a separate operation by running the EYUJXDD1 module.

During operation the DLA generates FTP PUT and RENAME in the following PDSE data set members:
• @FTPALLP: contains FTP statements to PUT and RENAME all discovery library books.
• @FTPCHGP: contains FTP statements to PUT and RENAME all changed discovery library books.

The contents of either @FTPALLP or @FTPCHGP are copied to the @FTPRUN data set member depending on the settings of the SET IGNORE_CHECKSUMS and SET REFRESH parameters.

SET HOSTNAME host_name
Specify the z/OS IP host name.

SET IGNORE_CHECKSUMS {YES | NO}
Specify one of the following values:
• YES, to bypass checksum processing for the discovery library books.
• NO, to calculate checksums for the discovery library books.

The default is NO.

Checksum processing determines whether each discovery library book has changed since the last DLA run. The DLA calculates a checksum for each discovery library book that it creates. The @FTPCHGP member contains a list of the discovery library books that the DLA has changed. You can then transfer only the changed discovery library books to the DLFS.

The advantage of checksum processing is that it reduces the amount of data transferred to the DLFS. The disadvantage is that it increases the DLA run time. Because the checksum processing increases DLA processing, you might want to bypass it by setting SET IGNORE_CHECKSUMS YES.

SET LIMIT {1 - 9999999}
An integer between 1 and 9999999 specifying a limit to the number of resources to be discovered. The default is 10000.

The DLA issues warning messages if the limit is exceeded. Processing continues, but a non-zero DLA return code is set so that the FTP step, to transfer the discovery library books to the DLFS, will not run.

SET MESSAGE_LANGUAGE {CHN | ENU | JPN}
This parameter determines the language used for the messages written to the destination specified on the SYSOUT option of the SYSPRINT file. Specify CHN for simplified Chinese, ENU for English, and JPN for Japanese Kanji. The default language is English. The Chinese and Japanese options use double-byte character sets.

SET ORGNAME organization_name
A single word without imbedded blanks denoting the name of your organization. This parameter can contain alphanumeric and national characters, with XML escape characters being used for other characters (for example: &lt; for < and &gt; for >).

The z/OS SMFID and SYSPLEX names are typically unique in an enterprise. In some cases, for example in the case of a company acquisition, duplicates can exist: for example, two independent
z/OS systems with SMFID called MVS1. In order to maintain separate instances with a CMDB, set different ORGNAME values.

The default is SET ORGNAME <defaultOrg>. This default is a special value that informs CCMDB that the CICS resources are related to the CCMDB defined default organization. Use this default setting unless your site has duplicate z/OS SMFIDs and SYSPLEXes that you want to have loaded into the same CMDB.

SET REFRESH {YES | NO}
Specify one of the following values:
• YES to produce refresh-type discovery library books
• NO to produce create-type discovery library books.

The default is NO.

Specifying SET REFRESH YES causes the output XML files to be refresh-type discovery library books. This setting indicates the discovery library books contain everything known about the environment. The readers of the discovery library books (such as CCMDB and TBSM) delete data loaded from corresponding discovery library books provided by the CICS DLA. Specify SET REFRESH YES only after a major configuration change.

Specifying SET REFRESH NO causes the output XML files to be create-type discovery library books. This setting indicates that the generated discovery library books contain information only about resources that have changed since the last DLA run.

DLA output
Each time you run the CICS TS DLA, it creates or reuses a partitioned data set. The DLA writes the discovery library books, control files, and debug information to this data set. You can control which discovery library books the DLA generates by setting the appropriate input parameters.

The default name of the partitioned (PDS or PDSE) data set is: hlq.cmas.CICSTS.DLA410.IDML, where hlq is a high-level qualifier that you supply and cmas is the name of the CMAS as specified on the SET CMAS parameter.

The DLA writes, or rewrites the following data set members:
• IdML member for the CTSPLEX discovery library book. This member contains a summary of the CICSPlexes discovered by the DLA.
• IdML members for each CICSPLEX discovery library book that you request. The member name is the CICSPlex name.
• IdML members for each CICSREGION discovery library book that you request. The member name is assigned by the DLA. The @CICSNAM member translates these names to the CICS region name and CICSPlex associated with the CICS region.
• @CHCKSUM containing an entry for each of the discovery library book members on the data set.
• The @DLALOG message log from the latest DLA run.
• @FTPALLP containing FTP PUT and RENAME statements for all discovery library book members from the latest DLA run.
• @FTPCHGP containing FTP PUT and RENAME statements for some or all discovery library book members depending on the DLA run.

If you set the IGNORE_CHECKS and SET REFRESH parameters to NO, this member contains FTP PUT and RENAME statements for any changed discovery library book members from the previous DLA run that used the same data set. If there are no changes, this member is empty. In all other circumstances, this member contains FTP statements for all the discovery library book members from the latest DLA run, and it is therefore identical in content to @FTPALLP.
• @FTPRUN containing FTP statements or a QUIT statement depending on the following conditions:
  – If you have set the SET FTP parameter to NO, this member contains only the statement QUIT.
If you have set the SET FTP parameter to YES and the SET REFRESH parameter to YES, this member contains the FTP statements copied from @FTPALLP.

If you have set the SET FTP parameter to YES and the SET REFRESH parameter to NO, this member contains the FTP statements copied from @FTPCHGP.

The DLA uses the contents of @FTPRUN to make the FTP transfer if you set the SET FTP parameter to YES and the DLA runs successfully with a return code of zero. You can also run the FTP step independently. To do this you use the EYUJXDD1 module in which you specify either @FTPRUN, @FTPALLP or @FTPCHGP.

**IdML file naming conventions**

Discovery library books are stored in plain text XML files that must follow a consistent file naming convention. The file name includes information to uniquely identify the discovery library book in the DLFS and to help developers and administrators quickly identify the source and creation date of the discovery data.

The names of discovery library books generated by the CICS DLA consist of the following segments:

- The CICS application code CICSTSnnnbooktype . application , where:
  - nnn is the CICS version identifier, for example “410”.
  - booktype identifies the type of discovery library book, for example “CTSPLEX”.
  - application is the name of the CICSpixel or CICS region from which the data is derived, which is the CMS name for the CTSPLEX summary discovery library book.
- The host name, for example: @mvs2c.example.com.
- An ISO 8601 time stamp UTC (Coordinated Universal Time), with colons (:) replaced by dots (.), for example: 2008-03-08T12.05.31Z.
- The text string “.refresh” when the discovery library book contains a refresh operation.
- A file name extension of “.xml”.

A slightly different naming convention applies to discovery library books when they are being written or copied to the DLFS. In this case, the file name of the discovery library book must contain the suffix “.partial” following .xml. The “.partial” suffix is removed from the file name when the operation of writing the file to the DLFS has been successfully completed.

**Sample file names**

The following file name example is for a discovery library book that is in the DLFS:

CICSTS410CICSPLEX. plex1@mvs2c.example.com.2008-11-07T14.32.31Z.xml

The following file name example is for a discovery library book that is in the DLFS that contains a refresh operation:

CICSTS410CTSPLEX. cmasa@mvs2c.example.com.2008-11-07T14.32.31Z.refresh.xml

The following file name example is for a discovery library book that is being copied to the DLFS:

CICSTS410CICSREGION. plex1.cicsa@mvs2c.example.com.2008-11-08T14.32.31Z.xml.partial

**Classes and relationships in CICSPLEX discovery library books**

CICSPLEX discovery library books contain information about CICSpixel SM resources associated with a specific CICSpixel. These discovery library books have names starting CICSTS410CICSPLEX. cicsplex_name, where cicsplex_name is the name of a CICSpixel as supplied in the CPLEXDEF attribute CPLEXDEF_CICSPLEX.

The DLA populates all attributes discovered about the following classes:

**ManagementSoftwareSystem**

The product that discovered the resources in the discovery library book. It includes these attributes:
Organization
A global name to preserve uniqueness in the CCMDB. This name is needed because you might have multiple z/OS systems with the same identifiers; for example, a copy of a production z/OS running on different hardware for testing purposes. You set the global name from the ORGNAME input parameter at DLA run time or from the default value when the discovery library book is loaded into the CCMDB.

CICSplex
Information about CICSplexes.

CICSRegionGroup
Information about CICS region groups.

CICSMangingAddressSpace
Information about CICSPlex SM CMASs.

CICSWUIEndPoint
Information about CICSPlex SM Web User Interface (WUI) servers. This class includes the WUI URL as an attribute. You can use this URL to launch the WUI. The CICSWUIEndPoint instances in a given CICSPLEX discovery library book might be for WUI servers that are running in different CICSplices. Each CICSPLEX discovery library book must contain a CICSWUIEndPoint instance with a relationship type of Accesses for each WUI server associated with the CMAS.

Application
Data for business applications that you have defined using BAS logical scopes. You obtain the application names from logical scope names; that is, from the RESDESC_LSCOPE attribute specified in the BAS resource description (RESDESC) resource table.

The following classes exist as stub instances in the discovery library book. The only attributes produced are those attributes needed to satisfy the naming rules for relationships to these classes.

CICSRegion
CICS region resources

CICSTFile
File resources

CICSLIBRARY
LIBRARY resources

CICSDocumentTemplate
Document template resources

CICSLSRPool
VSAM LSR pool resources

CICSTDQueue
Transient data queue resources

CICSTransaction
Transaction resources

CICSProgram
Program resources

CICSPProfile
Transaction profile resources

CICSDb2Entry
DB2 entry resources

CICSDb2EntryTransaction
DB2 entry associated transaction resources

The relationships in Table 16 on page 231 apply to a CICSpex. The Manages relationship between CICSMangingAddressSpace (CMAS) and CICSpex identifies which CMASs participate in managing the CICSpex. The Controls relationship identifies the maintenance point CMAS. A maintenance point CMAS is
responsible for notifying the other CMASs about changes of topology in the CICSpix. Each CICSpix has one maintenance point CMAS but a CMAS can act as a maintenance point for several CICSpixes.

Table 16. Relationships for CICSpix

<table>
<thead>
<tr>
<th>Relationship type</th>
<th>Source</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accesses</td>
<td>CICSWUIEndPoint</td>
<td>CICSpix</td>
</tr>
<tr>
<td>Controls</td>
<td>CICSMmanagingAddressSpace</td>
<td>CICSpix</td>
</tr>
<tr>
<td>Federates</td>
<td>CICSpix</td>
<td>Application</td>
</tr>
<tr>
<td>Federates</td>
<td>CICSpix</td>
<td>CICSRegionGroup</td>
</tr>
<tr>
<td>Federates</td>
<td>CICSpix</td>
<td>CICSRegion</td>
</tr>
<tr>
<td>Manages</td>
<td>CICSMmanagingAddressSpace</td>
<td>CICSpix</td>
</tr>
<tr>
<td>Owns</td>
<td>Organization</td>
<td>CICSpix</td>
</tr>
</tbody>
</table>

The relationships in Table 17 on page 231 apply to CICS region groups. A CICS region group can include multiple CICS regions and other CICS region groups.

Table 17. Relationships for CICS region groups

<table>
<thead>
<tr>
<th>Relationship type</th>
<th>Source</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federates</td>
<td>CICSpix</td>
<td>CICSRegionGroup</td>
</tr>
<tr>
<td>Federates</td>
<td>CICSRegionGroup</td>
<td>CICSRegion</td>
</tr>
<tr>
<td>Federates</td>
<td>CICSRegionGroup</td>
<td>CICSRegionGroup</td>
</tr>
<tr>
<td>Owns</td>
<td>Organization</td>
<td>CICSRegionGroup</td>
</tr>
</tbody>
</table>

The relationships in Table 18 on page 231 apply to the technology providing the DLA data to the CICSMmanagingAddressSpace, CICSWUIEndPoint classes, and CICSRegion classes.

Table 18. Relationships for CICSMmanagingAddressSpace, CICSWUIEndPoint and CICSRegion classes

<table>
<thead>
<tr>
<th>Relationship type</th>
<th>Source</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contains</td>
<td>MSSInstance</td>
<td>CICSMmanagingAddressSpace</td>
</tr>
<tr>
<td>Contains</td>
<td>MSSInstance</td>
<td>CICSWUIEndPoint</td>
</tr>
<tr>
<td>Relates</td>
<td>MSSObjectLink</td>
<td>CICSRegion</td>
</tr>
</tbody>
</table>

The relationships in Table 19 on page 231 associate an application with a CICSpix and with installed resource instances in CICS regions.

Table 19. Relationships that associate an application with a CICSpix and with installed resources

<table>
<thead>
<tr>
<th>Relationship type</th>
<th>Source</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contains</td>
<td>CICSRegion</td>
<td>CICSFile</td>
</tr>
<tr>
<td>Contains</td>
<td>CICSRegion</td>
<td>CICSDb2Entry</td>
</tr>
<tr>
<td>Contains</td>
<td>CICSRegion</td>
<td>CICSDb2EntryTransaction</td>
</tr>
<tr>
<td>Contains</td>
<td>CICSRegion</td>
<td>CICSPProfile</td>
</tr>
<tr>
<td>Contains</td>
<td>CICSRegion</td>
<td>CICSDocumentTemplate</td>
</tr>
<tr>
<td>Contains</td>
<td>CICSRegion</td>
<td>CICSLibrary</td>
</tr>
</tbody>
</table>
Table 19. Relationships that associate an application with a CICSplex and with installed resources (continued)

<table>
<thead>
<tr>
<th>Relationship type</th>
<th>Source</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contains</td>
<td>CICSRegion</td>
<td>CICSLSRPool</td>
</tr>
<tr>
<td>Contains</td>
<td>CICSRegion</td>
<td>CICSProgram</td>
</tr>
<tr>
<td>Contains</td>
<td>CICSRegion</td>
<td>CICSTDQueue</td>
</tr>
<tr>
<td>Contains</td>
<td>CICSRegion</td>
<td>CICSTransaction</td>
</tr>
<tr>
<td>Federates</td>
<td>CICSplex</td>
<td>Application</td>
</tr>
<tr>
<td>Uses</td>
<td>Application</td>
<td>CICSDb2Entry</td>
</tr>
<tr>
<td>Uses</td>
<td>Application</td>
<td>CICSDb2EntryTransaction</td>
</tr>
<tr>
<td>Uses</td>
<td>Application</td>
<td>CICSDocumentTemplate</td>
</tr>
<tr>
<td>Uses</td>
<td>Application</td>
<td>CICSFile</td>
</tr>
<tr>
<td>Uses</td>
<td>Application</td>
<td>CICSLibrary</td>
</tr>
<tr>
<td>Uses</td>
<td>Application</td>
<td>CICSLSRPool</td>
</tr>
<tr>
<td>Uses</td>
<td>Application</td>
<td>CICSProfile</td>
</tr>
<tr>
<td>Uses</td>
<td>Application</td>
<td>CICSProgram</td>
</tr>
<tr>
<td>Uses</td>
<td>Application</td>
<td>CICSTDQueue</td>
</tr>
<tr>
<td>Uses</td>
<td>Application</td>
<td>CICSTransaction</td>
</tr>
</tbody>
</table>

Classes and relationships in CICSREGION discovery library books

CICSREGION discovery library books contain information about CICS resources associated with a specific CICS region. These discovery library books have names starting CICSTS410CICSREGION. *cicplex_name.cics_name*, where *cicplex_name* is the name of a CICSplex associated with the CICS region and *cics_name* is the name with which the CICS region is defined to CICSplex SM (as defined by the CSYSDEF attribute CSYSDEF_NAME).

The DLA populates all attributes discovered about the following classes:

**ManagementSoftwareSystem**

The product that discovered the resources in the discovery library book. It includes these two attributes:

- **ProductName**: IBM CICS TS Discovery Library Adapter
- **ProductVersion**: The current version of CICS TS; for example, 410

**CICSRegion**

CICS regions

**CICSProgram**

Program resources

**CICSFile**

File resources

**CICSTransaction**

Transaction resources

**CICSLIBRARY**

LIBRARY resources

**CICSDocumentTemplate**

Document template resources

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CICSLSRPool
  VSAM LSR pool resources
CICSPProfile
  Transaction profile resources
CICSPipeline
  CICS pipeline resources
CICSWebService
  Web services resources
CICSURIMap
  URI map resources
CICSTCPIPService
  TCP/IP services
CICSSIPICConnection
  IPIC connection resources
CICSCSMROConnection
  ISC and MRO connection resources
CICSDb2Connection
  DB2 connection resources
CICSDb2Entry
  DB2 entry resources
CICSDb2EntryTransaction
  DB2 entry associated transaction resources
CICSTDQueue
  Transient data queue resources

The relationships in Table 20 on page 233 associate CICS regions with various resources that are installed on them.

<table>
<thead>
<tr>
<th>Relationship type</th>
<th>Source</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contains</td>
<td>CICSRegion</td>
<td>CICSDb2Connection</td>
</tr>
<tr>
<td>Contains</td>
<td>CICSRegion</td>
<td>CICSDb2Entry</td>
</tr>
<tr>
<td>Contains</td>
<td>CICSRegion</td>
<td>CICSDb2EntryTransaction</td>
</tr>
<tr>
<td>Contains</td>
<td>CICSRegion</td>
<td>CICSDocumentTemplate</td>
</tr>
<tr>
<td>Contains</td>
<td>CICSRegion</td>
<td>CICSFile</td>
</tr>
<tr>
<td>Contains</td>
<td>CICSRegion</td>
<td>CICSSIPICConnection</td>
</tr>
<tr>
<td>Contains</td>
<td>CICSRegion</td>
<td>CICSLibrary</td>
</tr>
<tr>
<td>Contains</td>
<td>CICSRegion</td>
<td>CICSLSRPool</td>
</tr>
<tr>
<td>Contains</td>
<td>CICSRegion</td>
<td>CICSCSMROConnection</td>
</tr>
<tr>
<td>Contains</td>
<td>CICSRegion</td>
<td>CICSPipeline</td>
</tr>
<tr>
<td>Contains</td>
<td>CICSRegion</td>
<td>CICSPProfile</td>
</tr>
<tr>
<td>Contains</td>
<td>CICSRegion</td>
<td>CICSProgram</td>
</tr>
<tr>
<td>Contains</td>
<td>CICSRegion</td>
<td>CICSTCPIPService</td>
</tr>
<tr>
<td>Contains</td>
<td>CICSRegion</td>
<td>CICSTDQueue</td>
</tr>
<tr>
<td>Contains</td>
<td>CICSRegion</td>
<td>CICSTransaction</td>
</tr>
</tbody>
</table>
Table 20. Relationships for CICS region (continued)

<table>
<thead>
<tr>
<th>Relationship type</th>
<th>Source</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contains</td>
<td>CICSRegion</td>
<td>CICSURIMap</td>
</tr>
<tr>
<td>Contains</td>
<td>CICSRegion</td>
<td>CICSWebService</td>
</tr>
</tbody>
</table>

The following relationships associate a transaction with a transaction profile and with a program.

Table 21. Relationship for transaction and transaction profile

<table>
<thead>
<tr>
<th>Relationship type</th>
<th>Source</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uses</td>
<td>CICSTransaction</td>
<td>CICSProfile</td>
</tr>
<tr>
<td>Uses</td>
<td>CICSTransaction</td>
<td>CICSProgram</td>
</tr>
</tbody>
</table>

The following relationship associates a program with the LIBRARY from which it was loaded by CICS.

Table 22. Relationship for program and LIBRARY

<table>
<thead>
<tr>
<th>Relationship type</th>
<th>Source</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolvesfrom</td>
<td>CICSProgram</td>
<td>CICSLIBRARY</td>
</tr>
</tbody>
</table>

The following relationship relates the technology providing the DLA data to the CICSRegion class:

Table 23. Relationship for CICS region

<table>
<thead>
<tr>
<th>Relationship type</th>
<th>Source</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relates</td>
<td>MSSObjectLink</td>
<td>CICSRegion</td>
</tr>
</tbody>
</table>

Classes and relationships in CTSPLEX discovery library books
CTSPLEX discovery library books contain summary information about CICSplex class instances for all CICSplexes that are managed by the CMAS specified by the DLA SET CMAS parameter. The DLA can create only one CTSPLEX discovery library book each time it is run.

The name of all discovery library books start CICSTS410CTSPLEX.cmas_name, where cmas_name is the name of the CMAS.

The DLA populates attributes discovered about the following class:

**CICSMANAGINGADDRESSPACE**

- Identifies which CMASs participate in managing the CICSplex. The DLA creates one instance of this class for each CMAS that is assigned to managing one or more CICSPlexes. Only those attributes needed to satisfy the naming rules for relationships to these classes are produced as output.

**CICSPLEX**

Information about CICSPlexes.

The relationships in Table 24 on page 234 associate a CMAS with a CICSPlex.

Table 24. Relationships CICSMANAGINGADDRESSPACE

<table>
<thead>
<tr>
<th>Relationship type</th>
<th>Source</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contains</td>
<td>MSSInstance</td>
<td>CICSMANAGINGADDRESSPACE</td>
</tr>
<tr>
<td>Controls</td>
<td>CICSMANAGINGADDRESSPACE</td>
<td>CICSPLEX</td>
</tr>
<tr>
<td>Manages</td>
<td>CICSMANAGINGADDRESSPACE</td>
<td>CICSPLEX</td>
</tr>
<tr>
<td>Owns</td>
<td>Organization</td>
<td>CICSPLEX</td>
</tr>
</tbody>
</table>
The Controls relationship identifies the maintenance point CMAS. The Manages relationship between CICSManagingAddressSpace (CMAS) and CICSplex identifies which CMASs participate in managing the CICSplex.

**DLA security**

The DLA runs as a CICSPlex SM API program and is therefore subject to CICSPlex SM security for accessing the CICS TS data.

You need update access to the PDSE data set used for the IdML output when running the DLA. When using FTP to transfer the PDSE data set members to the Discovery Library File Store, you need read access to the PDS and both write access and rename ability to the Discovery Library File Store.

**DLA problem determination**

The CICS DLA issues messages with identifiers in the range EYUXD1000 through EYUXD1031.

If a CICSPlex API request returns an error response, messages identify the request made and the responses received.

You control the destination and level of detail returned for any errors using the CONSOLE_MESSAGES and FEEDBACK input parameters.

If a run of the CICS DLA stalls, perform the following steps before cancelling the job.

- Take an SDUMP to include the DLA address space, the CMAS to which the utility is connected, and the associated DMDS, DAT, TOP, COM, and QUE data spaces.
- Save the DLA job log, the CMAS job log, and the output partitioned data set.
Chapter 2. Creating resources with BAS

You can use the CICS Explorer or Web User Interface to create BAS resource objects to model and install the required CICS resources.

About this task
Creating resource objects is a three stage process.

Procedure
1. Access the appropriate resource definition view.
2. Create the definition.
3. Install the definition.

What to do next
After you install the resource object, you can use the CICS Explorer or Web User Interface to inquire on the resulting resources.

ATOMSERVICE resource definitions

ATOMSERVICE resource definitions specify the resources that CICS uses to produce an Atom service, feed, collection, or category document.

Viewing BAS ATOMSERVICE definitions
You can view information about your existing ATOMSERVICE resource definitions using the CICS Explorer or the Web User Interface.

About this task
The BAS resource definition that represents an ATOMSERVICE resource is called ATOMDEF. The Atomservice definitions view in the Web User Interface displays the list of ATOMDEF definitions.

Procedure
1. From the main menu, click Administration.
2. From the Administration views menu, click either Basic CICS resource administration or Fully functional Business Application Services (BAS) administration.
3. Click Resource definitions to display the CICS resource definitions menu.
4. Click Atomservice definitions.

Results
The Web User Interface displays the list of ATOMDEF definitions for the current context.

What to do next
From this view you can create, update, remove, or install ATOMSERVICE resource definitions.

Related tasks
Defining ATOMSERVICE resources using BAS
You define a resource definition for an Atom service, feed, collection, or category document by creating a BAS resource object, ATOMDEF.

Installing BAS ATOMSERVICE definitions
Install the BAS resource object for the ATOMSERVICE resource to make the resource available to the CICS region.

### Defining ATOMSERVICE resources using BAS

You define a resource definition for an Atom service, feed, collection, or category document by creating a BAS resource object, ATOMDEF.

#### About this task

You can define the resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

#### Procedure

1. From the main menu, click **Administration > Basic CICS resource administration > Resource definitions > Atomservice definitions** to view the list of ATOMDEF resource definitions.
2. Click the Create... button.
   - To use an existing definition as the basis for the new definition, click the check box before clicking the Create... button.
   - The Atomservice definitions view displays.
3. Complete the relevant fields and click **Yes** to create the definition.

#### Results

The Atomservice definitions view displays showing the new definition.

#### What to do next

To add the definition to a resource group, click the Add to resource group... button.

#### Related tasks

- Viewing BAS ATOMSERVICE definitions
- Installing BAS ATOMSERVICE definitions

### Installing BAS ATOMSERVICE definitions

Install the BAS resource object for the ATOMSERVICE resource to make the resource available to the CICS region.

#### Before you begin

You must have created the required ATOMDEF resource object in the data repository to install the ATOMSERVICE resource in the CICS region.

#### About this task

You can install the BAS resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

#### Procedure

1. From the main menu, click **Administration > Basic CICS resource administration > Resource definitions > Atomservice definitions** to view the list of ATOMDEF resource definitions.
2. Click the Record check box to select an ATOMDEF definition and click the Install... button.
   - Alternatively, click an ATOMDEF definition name and click the Install... button on the ATOMDEF definitions detailed view.
Results
The ATOMSERVICE resource is installed in the specified CICS region.

What to do next
After the resource definition installs successfully, you can inquire about the resource from the main menu by clicking CICS operations > TCP/IP service operations views > Atomservice definitions.

Related tasks
Viewing BAS ATOMSERVICE definitions
You can view information about your existing ATOMSERVICE resource definitions using the CICS Explorer or the Web User Interface.

Defining ATOMSERVICE resources using BAS
You define a resource definition for an Atom service, feed, collection, or category document by creating a BAS resource object, ATOMDEF.

BUNDLE resource definitions
BUNDLE resource definitions describe bundles, the unit of deployment for an application. The BUNDLE resource defines where the bundle is deployed on z/OS UNIX and its status.

Viewing BUNDLE definitions
You can view information about your existing BUNDLE definitions using the IBM CICS Explorer or the Web User Interface.

About this task
The BAS resource definition that represents a BUNDLE is called BUNDDEF. The Bundle definitions view in the Web User Interface displays the list of BUNDDEF definitions.

Procedure
1. From the main menu, click Administration.
2. From the Administration views menu, click either Basic CICS resource administration or Fully functional resource administration.
3. Click Resource definitions > BUNDLE definitions.

Results
The Web User Interface displays the list of BUNDDEF definitions for the current context.

What to do next
From this view you can create, remove, or install BUNDLE resource definitions.

Defining a bundle using BAS
You define a resource definition for an application bundle by creating a BAS resource object, BUNDDEF.

About this task
You can define the resource object using the IBM CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > Bundle definitions to view the list of BUNDDEF resource definitions.
2. Click the Create... button.
   To use an existing definition as the basis for the new definition, click the check box before clicking the Create... button.
The Bundle definitions create view displays.
3. Complete the relevant fields and click **Yes** to create the definition.

**Results**
The Bundle definitions view displays showing the new definition.

**What to do next**
To add the definition to a resource group, click the **Add to resource group...** button.

### Installing BAS bundle definitions

Install the BAS resource object for the bundle to make it available to the CICS region.

**Before you begin**
You must have created the required BUNDDEF resource object in the data repository to install the bundle in the CICS region.

**About this task**
You can install the BAS resource object using the IBM CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

**Procedure**
1. From the main menu, click **Administration > Basic CICS resource administration > Resource definitions > Bundle definitions** to view the list of BUNDDEF resource definitions.
2. Click the Record check box to select a definition and click the **Install...** button. Alternatively, click on a bundle definition name and click the **Install...** button on the Bundle definitions detailed view.

**Results**
The application bundle installs in the specified CICS region. CICS dynamically creates any additional resources that are defined in the bundle manifest.

**What to do next**
After the resource definition installs successfully, you can inquire about enabled application bundles from the WUI main menu by selecting **CICS operations > Application operations views > Bundles**. You can view the status of all the resources that are installed as part of the bundle using the IBM CICS Explorer.

### DB2 connection resource definitions

A DB2 connection definition establishes the global characteristics of connections between CICS regions and a DB2 subsystem that use the DB2 attachment facility.

**Viewing BAS DB2 connection definitions**
You can view information about your existing DB2 connection definitions using the CICS Explorer or the Web User Interface.

**About this task**
The BAS resource definition that represents a DB2 connection is called DB2CDEF. The **DB2 connection definitions** view in the Web User Interface displays the list of DB2CDEF definitions.

**Procedure**
1. From the main menu, click **Administration**.
2. From the Administration views menu, click either **Basic CICS resource administration** or **Fully functional Business Application Services (BAS) administration**.
3. Click **Resource definitions** to display the **CICS resource definitions menu**.
4. Click **DB2 connection definitions**.

**Results**
The Web User Interface displays the list of DB2 connection definitions for the current context.

**What to do next**
From this view you can also create, update, remove, or install DB2 connection definitions.

**Related tasks**
- **Defining DB2 connections using BAS**
  You define a resource definition for a DB2 connection by creating a BAS resource object, DB2CDEF.
- **Installing BAS DB2 connection definitions**
  Install the BAS resource object for the DB2 connection to make the connection available to the CICS region.

**Defining DB2 connections using BAS**
You define a resource definition for a DB2 connection by creating a BAS resource object, DB2CDEF.

**About this task**
You can define the resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

**Procedure**
1. From the main menu, click **Administration > Basic CICS resource administration > Resource definitions > DB2 connection definitions** to view the list of DB2CDEF resource definitions.
2. Click the **Create...** button.
   - To use an existing definition as the basis for the new definition, click the check box before clicking the **Create...** button.
   - The **DB2 connection definitions** view displays.
3. Complete the relevant fields and click **Yes** to create the definition.

**Results**
The **DB2 connection definitions** view displays showing the new definition.

**What to do next**
To add the definition to a resource group, click the **Add to resource group...** button.

**Related tasks**
- **Viewing BAS DB2 connection definitions**
  You can view information about your existing DB2 connection definitions using the CICS Explorer or the Web User Interface.
- **Installing BAS DB2 connection definitions**
  Install the BAS resource object for the DB2 connection to make the connection available to the CICS region.

**Installing BAS DB2 connection definitions**
Install the BAS resource object for the DB2 connection to make the connection available to the CICS region.

**Before you begin**
You must have created the required DB2CDEF resource object in the data repository to install the DB2 connection in the CICS region.
About this task
You can install the BAS resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > DB2 connection definitions to view the list of DB2CDEF resource definitions.
2. Click the Record check box to select a DB2 connection definition and click the Install... button. Alternatively, click a DB2 connection definition name and click the Install... button on the DB2 connection definitions detailed view.

Results
The DB2 connection is installed in the specified CICS region.

What to do next
After the resource definition installs successfully, you can inquire about the resource from the main menu by clicking CICS operations > DB2, DBCTL and IBM MQ operations views > Connections.

Related tasks
Viewing BAS DB2 connection definitions
You can view information about your existing DB2 connection definitions using the CICS Explorer or the Web User Interface.

Defining DB2 connections using BAS
You define a resource definition for a DB2 connection by creating a BAS resource object, DB2CDEF.

DB2 entry resource definitions
A DB2 entry definition specifies the resources required by CICS transactions that use the DB2 attachment facility to access a DB2 subsystem.

Viewing DB2 entry definitions
You can view information about your existing DB2 entry definitions using the CICS Explorer or the Web User Interface.

About this task
The BAS resource definition that represents a DB2 entry is called DB2EDEF. The DB2 entry definitions view in the Web User Interface displays the list of DB2EDEF definitions.

Procedure
1. From the main menu, click Administration.
2. From the Administration views menu, click either Basic CICS resource administration or Fully functional Business Application Services (BAS) administration.
3. Click Resource definitions to display the CICS resource definitions view.
4. Click DB2 entry definitions.

Results
The Web User Interface displays the list of DB2 entry definitions for the current context.

What to do next
From this view you can also create, update, remove, or install DB2 entry definitions.

Related tasks
Defining DB2 entries using BAS
You define a resource definition for a CICS-deployed JAR file by creating a BAS resource object, DB2EDEF.

Installing BAS DB2 entry definitions
Install the BAS resource object for the DB2 entry to make the definition available to the CICS region.

Defining DB2 entries using BAS
You define a resource definition for a CICS-deployed JAR file by creating a BAS resource object, DB2EDEF.

Before you begin

About this task
You can define the resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > DB2 entry definitions
2. From the DB2 entry definitions view, click the Create... button.
   To use an existing definition as the basis of the new one, click the check box before clicking the Create... button.
   The DB2 entry definitions create view displays.
3. Complete the relevant fields and click Yes to create the definition.

Results
The DB2 entry definitions view displays showing the new definition.

What to do next
To add the definition to a resource group, click the Add to resource group... button.

Related tasks
Viewing DB2 entry definitions
You can view information about your existing DB2 entry definitions using the CICS Explorer or the Web User Interface.

Installing BAS DB2 entry definitions
Install the BAS resource object for the DB2 entry to make the definition available to the CICS region.

Before you begin
You must have created the required DB2EDEF resource object in the data repository to install the DB2 entry in the CICS region.

About this task
You can install the BAS resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > DB2 entry definitions to view the list of DB2EDEF resource definitions.
2. Click the Record check box to select a JAR file definition and click the Install... button.
Alternatively, click a DB2 entry definition name and click the Install... button on the DB2 entry definitions detailed view.

Results
The DB2 entry resource is installed in the specified CICS region.

What to do next
After the resource definition installs successfully, you can inquire about the resource from the main menu by clicking CICS operations > DB2, DBCTL and IBM MQ operations views > DB2 operations views > Entries.

Related tasks
Viewing DB2 entry definitions
You can view information about your existing DB2 entry definitions using the CICS Explorer or the Web User Interface.

Defining DB2 entries using BAS
You define a resource definition for a CICS-deployed JAR file by creating a BAS resource object, DB2EDEF.

### DB2 transaction resource definitions

A DB2 transaction definition identifies transactions that use the resources specified in a DB2 entry definition.

Viewing DB2 transaction definitions
You can view information about your existing DB2 transaction definitions using the CICS Explorer or the Web User Interface.

About this task
The BAS resource definition that represents a DB2 transaction is called DB2TDEF. The DB2 transaction definitions view in the Web User Interface displays the list of DB2TDEF definitions.

Procedure
1. From the main menu, click Administration.
2. From the Administration views menu, click either Basic CICS resource administration or Fully functional Business Application Services (BAS) administration.
3. Click CICS resource definitions to display the CICS resource definitions view.
4. Click DB2 transaction definitions.

Results
The Web User Interface displays the list of DB2 transaction definitions for the current context.

What to do next
From this view you can also create, update, remove, or install DB2 transaction definitions.

Related tasks
Defining DB2 transactions using BAS
You define a resource definition for a DB2 transaction by creating a BAS resource object, DB2TDEF.

Installing BAS DB2 transaction definitions
Installing the BAS resource object for the DB2 transaction to make the definition available in the CICS region.

Defining DB2 transactions using BAS
You define a resource definition for a DB2 transaction by creating a BAS resource object, DB2TDEF.

About this task
You can define the resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > DB2 transaction definitions
2. From the DB2 transaction definitions view, click the Create... button.
   To use an existing definition as the basis of the new one, click the check box before clicking the Create... button.
   The DB2 transaction definitions create view displays.
3. Complete the relevant fields and click Yes to create the definition.

Results
The DB2 transaction definitions view displays showing the new definition.

What to do next
To add the definition to a resource group, click the Add to resource group... button.

Related tasks
Viewing DB2 transaction definitions
You can view information about your existing DB2 transaction definitions using the CICS Explorer or the Web User Interface.

Installing BAS DB2 transaction definitions
Install the BAS resource object for the DB2 transaction to make the definition available in the CICS region.

Before you begin
You must have created the required DB2TDEF resource object in the data repository to install the DB2 transaction definition in the CICS region.

About this task
You can install the BAS resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > DB2 transaction definitions to view the list of DB2TDEF resource definitions.
2. Click the Record check box to select a DB2 transaction definition and click the Install... button.
   Alternatively, click a DB2 connection definition name and click the Install... button on the DB2 transaction definitions detailed view.
Results
The DB2 transaction installs in the specified CICS region.

What to do next
After the resource definition installs successfully, you can inquire about the resource by clicking CICS operations > DB2, DBCTL and IBM MQ operations views > DB2 operations views.

Related tasks
Viewing DB2 transaction definitions
You can view information about your existing DB2 transaction definitions using the CICS Explorer or the Web User Interface.

Defining DB2 transactions using BAS
You define a resource definition for a DB2 transaction by creating a BAS resource object, DB2TDEF.

Document template resource definitions
Document template definitions define document templates for use in managed CICS regions.

Viewing document template definitions
You can view information about your existing document template definitions using the CICS Explorer or the Web User Interface.

About this task
The BAS resource definition that represents a document template is called DOCDEF. The Document template definitions view in the Web User Interface displays the list of DOCDEF definitions.

Procedure
1. From the main menu, click Administration.
2. From the Administration views menu, click either Basic CICS resource administration or Fully functional Business Application Services (BAS) administration.
3. Click CICS resource definitions to display the CICS resource definitions view.
4. Click Document template definitions.

Results
The Web User Interface displays the list of document template definitions for the current context.

What to do next
From this view you can also create, update, remove, or install document template definitions.

Related tasks
Defining document templates using BAS
You define a resource definition for a document template by creating a BAS resource object, DOCDEF.

Installing BAS document template definitions
Install the BAS resource object for the document template to make the definition available in the CICS region.

Defining document templates using BAS
You define a resource definition for a document template by creating a BAS resource object, DOCDEF.

About this task
You can define the resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.
Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > Document definitions.
2. From the Document definitions view, click the Create... button.
   To use an existing definition as the basis of the new one, click the check box before clicking the Create... button.
   The Document template definitions create view displays.
3. Complete the relevant fields and click Yes to create the definition.

Results
The Document definitions view displays showing the new definition.

What to do next
To add the definition to a resource group, click the Add to resource group... button.

Related tasks
Viewing document template definitions
You can view information about your existing document template definitions using the CICS Explorer or the Web User Interface.

Installing BAS document template definitions
Install the BAS resource object for the document template to make the definition available in the CICS region.

Before you begin
You must have created the required DOCDEF resource object in the data repository to install the document template in the CICS region.

About this task
You can install the BAS resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > Document template definitions to view the list of DOCDEF resource definitions.
2. Click the Record check box to select a document template definition and click the Install... button.
   Alternatively, click a document template definition name and click the Install... button on the Document template definitions detailed view.

Results
The document template resource installs in the specified CICS region.

What to do next
After the resource definition installs successfully, you can inquire about the resource by clicking CICS operations > Document template operations views > Document template.

Related tasks
Viewing document template definitions
You can view information about your existing document template definitions using the CICS Explorer or the Web User Interface.

Defining document templates using BAS
You define a resource definition for a document template by creating a BAS resource object, DOCDEF.

**FEPI node list resource definitions**

FEPI node list definitions describe the physical and operational characteristics of FEPI nodes.

**Viewing FEPI node list definitions**

You can view information about your existing FEPI node list definitions using the CICS Explorer or the Web User Interface.

**About this task**

The BAS resource definition that represents a FEPI node list is called FENODDEF. The FEPI node list definitions view in the Web User Interface displays information about existing FEPI node definitions.

**Procedure**

1. From the main menu, click **Administration**.
2. From the **Administration views menu**, click either **Basic CICS resource administration** or **Fully functional Business Application Services (BAS) administration**.
3. Click **CICS resource definitions** to display the **CICS resource definitions** view.
4. Click **FEPI node list definitions**.

**Results**

The Web User Interface displays the list of FEPI node definitions.

**What to do next**

From this view you can also create, update, remove, or install FEPI node list definitions.

**Related tasks**

- **Defining FEPI node lists using BAS**
- **Installing BAS FEPI node list definitions**

**Defining FEPI node lists using BAS**

You define a resource definition for a FEPI node list by creating a BAS resource object, FENODDEF.

**About this task**

You can define the resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

**Procedure**

1. From the main menu, click **Administration** > **Basic CICS resource administration** > **Resource definitions** > **FEPI node list definitions**.
2. From the **FEPI node list definitions** view, click the **Create...** button.
   - To use an existing definition as the basis of the new one, click the check box before clicking the **Create...** button.
   - The **FEPI node list definitions** create view displays.
3. Complete the relevant fields and click **Yes** to create the definition.

**Results**

The **FEPI node list definitions** view displays showing the new definition.
What to do next
To add the definition to a resource group, click the **Add to resource group...** button.

**Related tasks**

- Viewing FEPI node list definitions
  You can view information about your existing FEPI node list definitions using the CICS Explorer or the Web User Interface.

- Installing BAS FEPI node list definitions
  Install the BAS resource object for the FEPI node list to make the definition available in the CICS region.

**Installing BAS FEPI node list definitions**

Install the BAS resource object for the FEPI node list to make the definition available in the CICS region.

**Before you begin**

You must have created the required FENODDEF resource object in the data repository to install the FEPI node list in the CICS region.

**About this task**

You can install the BAS resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

**Procedure**

1. From the main menu, click **Administration > Basic CICS resource administration > Resource definitions > FEPI node list definitions** to view the list of FENODDEF resource definitions.
2. Click the Record check box to select a FEPI node list definition and click the **Install...** button.
   Alternatively, click a FEPI node list definition name and click the **Install...** button on the **FEPI node list definitions** detailed view.

**Results**

The FEPI node list resource installs in the specified CICS region.

**What to do next**

After the resource definition installs successfully, you can inquire about the resource by clicking **CICS operations > FEPI operations views > Nodes**.

**Related tasks**

- Viewing FEPI node list definitions
  You can view information about your existing FEPI node list definitions using the CICS Explorer or the Web User Interface.

- Defining FEPI node lists using BAS
  You define a resource definition for a FEPI node list by creating a BAS resource object, FENODDEF.

**FEPI pool resource definitions**

FEPI pool definitions describe the physical and operational characteristics of FEPI pools.

**Viewing FEPI pool definitions**

You can view information about your existing FEPI pool definitions using the CICS Explorer or the Web User Interface.

**About this task**

The BAS resource definition that represents a FEPI pool is called FEPOODEF. The FEPI pool definitions view in the Web User Interface displays information about existing FEPI pool definitions.
Procedure
1. From the main menu, click Administration.
2. From the Administration views menu, click either Basic CICS resource administration or Fully functional Business Application Services (BAS) administration.
3. Click CICS resource definitions to display the CICS resource definitions view.
4. Click FEPI pool definitions.

Results
The Web User Interface displays the list of FEPI pool definitions.

What to do next
From this view you can also create, update, remove, or install FEPI pool definitions.

Related tasks
Defining FEPI pools using BAS
You define a resource definition for a FEPI pool by creating a BAS resource object, FEPOODEF.

Installing BAS FEPI pool definitions
Install the BAS resource object for the FEPI pool to make the definition available in the CICS region.

Defining FEPI pools using BAS
You define a resource definition for a FEPI pool by creating a BAS resource object, FEPOODEF.

About this task
You can define the resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

Procedure
1. From the main menu, click Administration Basic CICS resource administrationResource definitionsFEPI pool definitions.
2. From the FEPI pool definitions view, click the Create... button. To use an existing definition as the basis of the new one, click the check box before clicking the Create... button. The FEPI pool definitions create view is displayed.
3. Complete the relevant fields and click Yes to create the definition.

Results
The FEPI pool definitions view displays showing the new definition.

What to do next
To add the definition to a resource group, click the Add to resource group... button.

Related tasks
Viewing FEPI pool definitions
You can view information about your existing FEPI pool definitions using the CICS Explorer or the Web User Interface.

Installing BAS FEPI pool definitions
Install the BAS resource object for the FEPI pool to make the definition available in the CICS region.

Installing BAS FEPI pool definitions
Install the BAS resource object for the FEPI pool to make the definition available in the CICS region.

Before you begin
You must have created the required FEPOODEF resource object in the data repository to install the FEPI pool in the CICS region.
You can install the BAS resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > FEPI pool definitions to view the list of FEPOODEF resource definitions.
2. Click the Record check box to select a FEPI pool definition and click the Install... button.
   Alternatively, click a FEPI pool definition name and click the Install... button on the FEPI pool definitions detailed view.

Results
The FEPI pool resource installs in the specified CICS region.

What to do next
After the resource definition installs successfully, you can inquire about the resource by clicking CICS operations > FEPI operations views > Pools.

Related tasks
Viewing FEPI pool definitions
You can view information about your existing FEPI pool definitions using the CICS Explorer or the Web User Interface.

Defining FEPI pools using BAS
You define a resource definition for a FEPI pool by creating a BAS resource object, FEPOODEF.

FEPI property set resource definitions
FEPI property set definitions describe the physical and operational characteristics of FEPI property sets.

Viewing FEPI property set definitions
You can view information about your existing FEPI property set definitions using the CICS Explorer or the Web User Interface.

About this task
The BAS resource definition that represents a FEPI property set is called FEPRODEF. The FEPI property set definitions view in the Web User Interface displays information about existing FEPI property set definitions.

Procedure
1. From the main menu, click Administration.
2. From the Administration views menu, click either Basic CICS resource administration or Fully functional Business Application Services (BAS) administration.
3. Click CICS resource definitions to display the CICS resource definitions view.
4. Click FEPI property set definitions.

Results
The Web User Interface displays the list of FEPI property set definitions.

What to do next
From this view you can also create, update, remove, or install FEPI property set definitions.

Related tasks
Defining FEPI property sets using BAS
You define a resource definition for FEPI property set by creating a BAS resource object, FEPRODEF.

**Installing BAS FEPI property set definitions**

Install the BAS resource object for the FEPI property set to make the definition available in the CICS region.

### Defining FEPI property sets using BAS

You define a resource definition for FEPI property set by creating a BAS resource object, FEPRODEF.

**About this task**

You can define the resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

**Procedure**

1. From the main menu, click **Administration > Basic CICS resource administration > Resource definitions > FEPI property set definitions**.
2. From the **FEPI property set definitions** view, click the **Create...** button.
   - To use an existing definition as the basis of the new one, click the check box before clicking the **Create...** button.
   - The **FEPI property set definitions** create view displays.
3. Complete the relevant fields and click **Yes** to create the definition.

**Results**

The **DB2 entry definitions** view displays showing the new definition.

**What to do next**

To add the definition to a resource group, click the **Add to resource group...** button.

**Related tasks**

- Viewing FEPI property set definitions
  
  You can view information about your existing FEPI property set definitions using the CICS Explorer or the Web User Interface.

- Installing BAS FEPI property set definitions
  
  Install the BAS resource object for the FEPI property set to make the definition available in the CICS region.

### Installing BAS FEPI property set definitions

Install the BAS resource object for the FEPI property set to make the definition available in the CICS region.

**Before you begin**

You must have created the required FEPRODEF resource object in the data repository to install the FEPI property set in the CICS region.

**About this task**

You can install the BAS resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

**Procedure**

1. From the main menu, click **Administration > Basic CICS resource administration > Resource definitions > FEPI property set definitions** to view the list of FEPRODEF resource definitions.
2. Click the Record check box to select a FEPI node list definition and click the **Install...** button.
   - Alternatively, click a property set definition name and click the **Install...** button on the **FEPI property set definitions** detailed view.
Results
The FEPI property set resource installs in the specified CICS region.

What to do next
After the resource definition installs successfully, you can inquire about the resource by clicking CICS operations > FEPI operations views > Property sets.

Related tasks
Viewing FEPI property set definitions
You can view information about your existing FEPI property set definitions using the CICS Explorer or the Web User Interface.

Defining FEPI property sets using BAS
You define a resource definition for FEPI property set by creating a BAS resource object, FEPRODEF.

FEPI target list resource definitions
FEPI target list definitions describe the physical and operational characteristics of FEPI targets.

Viewing FEPI target list definitions
You can view information about your existing FEPI property set definitions using the CICS Explorer or the Web User Interface.

About this task
The BAS resource definition that represents a FEPI target list is called FETRGDEF. The FEPI target list definitions view in the Web User Interface displays information about existing FEPI target list definitions.

Procedure
1. From the main menu, click Administration views.
2. From the Administration views menu, click either Basic CICS resource administration views or Fully functional Business Application Services (BAS) administration views.
3. Click CICS resource definitions to display the CICS resource definitions view.
4. Click FEPI target list definitions.

Results
The Web User Interface displays the list of FEPI target list definitions.

What to do next
From this view you can also create, update, remove, or install FEPI target list definitions.

Related tasks
Defining FEPI target lists using BAS
You define a resource definition for FEPI target list by creating a BAS resource object, FETRGDEF.

Installing BAS FEPI target list definitions
Install the BAS resource object for the FEPI target list to make the definition available in the CICS region.

Defining FEPI target lists using BAS
You define a resource definition for FEPI target list by creating a BAS resource object, FETRGDEF.

About this task
You can define the resource object using the Web User Interface. These instructions explain this procedure.
Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > FEPI target list definitions.
2. From the FEPI target list definitions view, click the Create... button.
   To use an existing definition as the basis of the new one, click the check box before clicking the Create... button.
   The FEPI target list definitions create view displays.
3. Complete the relevant fields and click Yes to create the definition.

Results
The FEPI target list definitions view displays showing the new definition.

What to do next
To add the definition to a resource group, click the Add to resource group... button.

Related tasks
Viewing FEPI target list definitions
You can view information about your existing FEPI property set definitions using the CICS Explorer or the Web User Interface.

Installing BAS FEPI target list definitions
Install the BAS resource object for the FEPI target list to make the definition available in the CICS region.

Before you begin
You must have created the required FETRGDEF resource object in the data repository to install the FEPI target list in the CICS region.

About this task
You can install the BAS resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > FEPI target list definitions to view the list of FETRGDEF resource definitions.
2. Click the Record check box to select a FEPI target list definition and click the Install... button.
   Alternatively, click a FEPI target list definition name and click the Install... button on the FEPI target list definitions detailed view.

Results
The FEPI target list resource installs in the specified CICS region.

What to do next
After installation of a FEPI target list resource definition, you can enquire about the resultant object using:

Related tasks
Viewing FEPI target list definitions
You can view information about your existing FEPI property set definitions using the CICS Explorer or the Web User Interface.

Defining FEPI target lists using BAS
You define a resource definition for FEPI target list by creating a BAS resource object, FETRGDEF.

**FILE resource definitions**

FILE resource definitions describe the physical and operational characteristics of files.

**Viewing BAS file definitions**

You can view information about your existing FILE definitions using the CICS Explorer or the Web User Interface.

**About this task**

The BAS resource definition that represents a FILE resource is called FILEDEF. The File definitions view in the Web User Interface displays information about existing FILE definitions.

**Procedure**

1. From the main menu, click **Administration views**.
2. From the **Administration views menu**, click either **Basic CICS resource administration views** or **Fully functional Business Application Services (BAS) administration views**.
3. Click **CICS resource definitions** to display the **CICS resource definitions** view.
4. Click **File definitions**.

**Results**

The Web User Interface displays the list of FILE definitions.

**What to do next**

From this view you can also create, update, remove, or install FILE definitions.

**Related tasks**

- Defining files using BAS
  You define a resource definition for a file by creating a BAS resource object, FILEDEF.
- Installing BAS file definitions
  Install the BAS resource object for the FILE definition to make the file available in the CICS region.

**Defining files using BAS**

You define a resource definition for a file by creating a BAS resource object, FILEDEF.

**About this task**

You can define the resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

**Procedure**

1. From the main menu, click **Administration** > **Basic CICS resource administration** > **Resource definitions** > **File definitions**
2. From the **File definitions** view, click the **Create...** button. To use an existing definition as the basis of the new one, click the check box before clicking the **Create...** button. The **File definitions** create view is displayed.
3. Complete the relevant fields and click **Yes** to create the definition.

**Results**

The **File definitions** view displays showing the new definition.
What to do next
To add the definition to a resource group, click the Add to resource group... button.

Related tasks
Viewing BAS file definitions
You can view information about your existing FILE definitions using the CICS Explorer or the Web User Interface.

Installing BAS file definitions
Install the BAS resource object for the FILE definition to make the file available in the CICS region.

Installing BAS file definitions
Install the BAS resource object for the FILE definition to make the file available in the CICS region.

Before you begin
You must have created the required FILEDEF resource object in the data repository to install the FILE resource in the CICS region.

About this task
You can install the BAS resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > File definitions
2. Click the Record check box to select a file definition and click the Install... button.
   Alternatively, click a file definition name and click the Install... button on the File definitions detailed view.

Results
The FILE resource installs in the specified CICS region.

What to do next
After the resource definition installs successfully, you can inquire about the resource by clicking CICS operations > File operations views. Select the file type that you are interested in from the menu.

Related tasks
Viewing BAS file definitions
You can view information about your existing FILE definitions using the CICS Explorer or the Web User Interface.

Defining files using BAS
You define a resource definition for a file by creating a BAS resource object, FILEDEF.

File key segment resource definitions
File key segment definitions describe the parts of a Windows file record that are to be used as the record key.

Key segments are valid only for:
• Entry-sequenced files (type E)
• Key-sequenced files (type K)

Key segments are not valid for:
• Alternate index files (type A)
• Relative-record files (type R)
• Remote files
You cannot install file key segment definitions.

Viewing file segment definitions
You can view information about your existing file segment definitions using the CICS Explorer or the Web User Interface.

About this task
The BAS resource definition that represents a file segment resource is called FSEGDEF. The File segment definitions view in the Web User Interface displays information about existing file segment definitions.

Procedure
1. From the main menu, click Administration.
2. From the Administration views menu, click either Basic CICS resource administration or Fully functional Business Application Services (BAS) administration.
3. Click CICS resource definitions to display the CICS resource definitions view.
4. Click File segment definitions.

Results
The Web User Interface displays the list of file segment definitions.

What to do next
From this view you can also create, update, or remove file segment definitions.
Related tasks
Defining file key segments using BAS
You define a resource definition for a file key segment by creating a BAS resource object, FSEGDEF.

Installing file key segment definitions

Defining file key segments using BAS
You define a resource definition for a file key segment by creating a BAS resource object, FSEGDEF.

About this task
You can define the resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > File key segment definitions.
2. From the File key segment definitions view, click the Create... button.
   To use an existing definition as the basis of the new one, click the check box before clicking the Create... button.
   The File key segment definitions create view displays.
3. Complete the relevant fields and click Yes to create the definition.

Results
The File key segment definitions view displays showing the new definition.

What to do next
To add the definition to a resource group, click the Add to resource group... button.
Related tasks
Viewing file segment definitions
You can view information about your existing file segment definitions using the CICS Explorer or the Web User Interface.

Installing file key segment definitions

About this task
You cannot install file key segment definitions.

Related tasks
Viewing file segment definitions
You can view information about your existing file segment definitions using the CICS Explorer or the Web User Interface.

Defining file key segments using BAS
You define a resource definition for a file key segment by creating a BAS resource object, FSEGDEF.

Enqueue model definitions

Enqueue model definitions describe how enqueue models are to run in a CICS region.

Viewing global enqueue model definitions
You can view information about your existing global enqueue model definitions using the CICS Explorer or the Web User Interface.

About this task
The BAS resource definition that represents a global enqueue model resource is called ENQMDEF. The Global enqueue model definitions view in the Web User Interface displays information about existing global enqueue model definitions.

Procedure
1. From the main menu, click Administration.
2. From the Administration views menu, click either Basic CICS resource administration or Fully functional Business Application Services (BAS) administration.
3. Click CICS resource definitions to display the CICS resource definitions view.
4. Click Global enqueue model definitions.

Results
The Web User Interface displays the list of global enqueue model definitions.

What to do next
From this view you can also create, update, install, or remove global enqueue model definitions.

Related tasks
Defining global enqueue models using BAS
You define a resource definition for a global enqueue model by creating a BAS resource object, ENQMDEF.

Installing BAS global enqueue model definitions
Install the BAS resource object for the global enqueue model definition to make it available in the CICS region.

**Defining global enqueue models using BAS**

You define a resource definition for a global enqueue model by creating a BAS resource object, ENQMDEF.

**About this task**

You can define the resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

**Procedure**

1. From the main menu, click **Administration** > **Basic CICS resource administration** > **Resource definitions** > **Global enqueue model definitions**.
2. From the **Global enqueue model definitions** view, click the **Create...** button.
   - To use an existing definition as the basis of the new one, click the check box before clicking the **Create...** button.
   - The **Global enqueue model definitions** create view displays.
3. Complete the relevant fields and click **Yes** to create the definition.

**Results**

The **Global enqueue models definitions** view displays showing the new definition.

**What to do next**

To add the definition to a resource group, click the **Add to resource group...** button.

**Related tasks**

- **Viewing global enqueue model definitions**
  You can view information about your existing global enqueue model definitions using the CICS Explorer or the Web User Interface.
- **Installing BAS global enqueue model definitions**
  Install the BAS resource object for the global enqueue model definition to make it available in the CICS region.

**Installing BAS global enqueue model definitions**

Install the BAS resource object for the global enqueue model definition to make it available in the CICS region.

**Before you begin**

You must have created the required ENQMDEF resource object in the data repository to install the global enqueue model definition in the CICS region.

**About this task**

Enqueue models forming nested generic enqueue names must be installed either in the disabled state or in order, from the most specific (for example, ABCD) to the least specific (for example, AB*). If another enqueue model with the same or a less specific nested enqueue name is already installed and enabled, the installation fails. You can install disabled enqueue models in any order, but you must enable them in order from most specific to least specific.

You can install the BAS resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

**Procedure**

1. From the main menu, click **Administration** > **Basic CICS resource administration** > **Resource definitions** > **Global enqueue model definitions**
2. Click the Record check box to select an enqueue model definition and click the **Install...** button. Alternatively, click an enqueue model definition name and click the **Install...** button on the **Global enqueue** detailed view.

**Results**
The global enqueue model definition installs in the specified CICS region.

**What to do next**
After the resource definition installs successfully, you can inquire about the resource by clicking **CICS operations > Global enqueue model operations views > Global enqueue model.**

**Related tasks**
- Viewing global enqueue model definitions
  You can view information about your existing global enqueue model definitions using the CICS Explorer or the Web User Interface.
- Defining global enqueue models using BAS
  You define a resource definition for a global enqueue model by creating a BAS resource object, ENQMDEF.

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**IPCONN resource definitions**

IPCONN resource definitions define the outbound attributes of an IP interconnectivity (IPIC) connection from a local CICS region to a remote CICS region or system.

**Viewing BAS IPIC connection definitions**

You can view information about your existing IPIC connection definitions using the CICS Explorer or the Web User Interface.

**About this task**
The BAS resource definition that represents an IPCONN resource is called IPCONDEF. The **IPIC connection definitions** view in the Web User Interface displays the list of IPCONDEF definitions.

**Procedure**
1. From the main menu, click **Administration.**
2. From the **Administration views** menu, click either **Basic CICS resource administration** or **Fully functional Business Application Services (BAS) administration.**
3. Click **Resource definitions** to display the **CICS resource definitions** view.
4. Click **IPIC connection definitions** to display a list of the IPIC connections that are defined.

**Results**
The Web User Interface displays the list of IPIC connection definitions.

**What to do next**
From this view you can also create, update, install, or remove IPIC connection definitions.

**Related tasks**
- Defining IPIC connections using BAS
  You can define IPIC connections by creating a BAS resource object, IPCONDEF.
- Installing BAS IPIC connection definitions
Install the BAS resource object for the IPCONN resource definition to make the resource available in the CICS region.

**Defining IPIC connections using BAS**

You can define IPIC connections by creating a BAS resource object, IPCONDEF.

**About this task**

You can define the resource object using the CICS Explorer or the Web User Interface. The steps in this task use the Web User Interface.

**Procedure**

1. From the main menu, click **Administration > Basic CICS resource administration > Resource definitions > IPIC connection definitions** to view the list of IPCONDEF resource definitions.
2. Click **Create...**
   
   To use an existing definition as the basis for the new definition, click the check box before clicking **Create...**
   
   The **IPIC connection definitions** create view is displayed.
3. Complete the relevant fields:
   
   a) The name of the IPCONDEF must be the same as the SYSID of the partner CICS region.
      
      You can view this information in the **CICS system definitions** view.
   
   b) The APPLID of the IPCONDEF must be the APPLID of the partner CICS region.
      
      You can view this information in the **CICS system definitions** view.
   
   c) Optional: The host, network ID, and port number of the IPCONDEF are populated from the partner CICS region if defined in the system definition. If the values are not populated, you can specify a host name and network ID if the partner CICS region is in a different network.
      
      The combination of APPLID and the network ID ensures that the remote CICS region is referred to by a unique name. You can also specify a port number for the partner CICS region. If you specify different values from the definitions in the partner region, your values are overridden when the definition is created.
   
   d) Specify the name of the TCPDEF resource object on the local CICS region that define the inbound attributes of the IPIC connection.
   
   e) Click **Yes** to create the definition.

**Results**

The **IPIC connection definitions** view displays the new definition.

**What to do next**

To add the definition to a resource group, click **Add to resource group...**. You must also create an IPCONDEF resource object for the partner CICS region and ensure there are suitable TCPDEF resource objects for each region.

**Related tasks**

- Viewing BAS IPIC connection definitions
- Installing BAS IPIC connection definitions
Install the BAS resource object for the IPCONN resource definition to make the resource available in the CICS region.

**Installing BAS IPIC connection definitions**

Install the BAS resource object for the IPCONN resource definition to make the resource available in the CICS region.

**Before you begin**

You must have created the required IPCONDEF resource object in the data repository to install the IPCONN resource in the CICS region.

**About this task**

You can either install IPIC connection definitions into each CICS region manually, using the CICS Explorer or the Web User Interface, or use the SYSLINK resource object to install the required definitions automatically into target CICS regions. The steps in this task use the Web User Interface.

**Procedure**

1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > IPIC connection definitions to view the list of IPCONDEF resource definitions.
2. Click the Record check box to select a CICS system and click Install... Alternatively, click a CICS system name and click Install... on the IPIC connection definitions detailed view.
3. Install the TCPDEF resource object to create a TCPIPSERVICE resource that references the IPCONN resource.
   
   You must have both IPCONN and TCPIPSERVICE resources installed in the local and remote CICS regions to establish an IPIC connection.

**Results**

The IPIC connection is installed in the specified CICS region.

**What to do next**

After the IPIC connection definition installs successfully, you can inquire about the connection from the main menu by clicking CICS operations > Connection operations views.

**Related tasks**

Viewing BAS IPIC connection definitions

You can view information about your existing IPIC connection definitions using the CICS Explorer or the Web User Interface.

Defining IPIC connections using BAS

You can define IPIC connections by creating a BAS resource object, IPCONDEF.

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**ISC/MRO connection resource definitions**

ISC/MRO connection definitions identify remote regions or systems that a CICS region communicates with using intersystem communication (ISC) or multiple region operation (MRO).

**Viewing BAS ISC and MRO connection definitions**

You can view information about your existing ISC and MRO connection definitions using the CICS Explorer or the Web User Interface.

**About this task**

The BAS resource definition that represents an ISC or MRO CONNECTION resource is called CONNDEF. The ISO/MRO connection definitions view in the Web User Interface displays the list of CONNDEF definitions.
Procedure
1. From the main menu, click Administration.
2. From the Administration menu, click either Basic CICS resource administration or Fully functional Business Application Services (BAS) administration.
3. Click Resource definitions to display the CICS resource definitions view.
4. Click ISC/MRO connection definitions to display a list of the ISC and MRO connections that are defined.

Results
The Web User Interface displays the list of ISC and MRO connection definitions.

What to do next
From this view you can also create, update, install, or remove ISC and MRO connection definitions.

Related tasks
Defining ISC and MRO connections using BAS
You define a resource definition for an ISC or MRO connection by creating a BAS resource object, CONNDEF.

Installing BAS ISC and MRO connection definitions
Install the BAS resource object for the CONNECTION resource definition to make the resource available in the CICS region.

Defining ISC and MRO connections using BAS
You define a resource definition for an ISC or MRO connection by creating a BAS resource object, CONNDEF.

About this task
You can define the resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > ISC/MRO connection definitions.
2. From the ISC/MRO connection definitions view, click the Create... button.
   To use an existing definition as the basis of the new one, click the check box before clicking the Create... button.
   The ISO/MRO connection definitions create view displays.
3. Complete the relevant fields and click Yes to create the definition.

Results
The ISC/MRO connection definitions view displays showing the new definition.

What to do next
To add the definition to a resource group, click the Add to resource group... button.

Related tasks
Viewing BAS ISC and MRO connection definitions
You can view information about your existing ISC and MRO connection definitions using the CICS Explorer or the Web User Interface.

Installing BAS ISC and MRO connection definitions
Install the BAS resource object for the CONNECTION resource definition to make the resource available in the CICS region.

**Installing BAS ISC and MRO connection definitions**

Install the BAS resource object for the CONNECTION resource definition to make the resource available in the CICS region.

**Before you begin**

You must have created the required CONNDEF resource object in the data repository to install the CONNECTION resource in the CICS region.

**About this task**

You can either install the connections into each CICS region manually, using the CICS Explorer or the Web User Interface, or use the SYSLINK resource object to install the required definitions automatically into target CICS regions. These instructions explain the procedure for the Web User Interface.

**Procedure**

1. From the main menu, click **Administration > Basic CICS resource administration > Resource definitions > ISC/MRO connection definitions**.
2. Click the Record check box to select a CICS system and click the **Install...** button.
   Alternatively, click a CICS system name and click the **Install...** button on the **ISO/MRO connection definitions** detailed view.

**Results**

The ISC or MRO connection is installed in the specified CICS region.

**What to do next**

After the connection installs successfully, you can inquire about the connection from the main menu by clicking **CICS operations > Connection operations views.**

**Related tasks**

- Viewing BAS ISC and MRO connection definitions
- You can view information about your existing ISC and MRO connection definitions using the CICS Explorer or the Web User Interface.

- Defining ISC and MRO connections using BAS
- You define a resource definition for an ISC or MRO connection by creating a BAS resource object, CONNDEF.

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**Journal model resource definitions**

Journal model definitions describe the association between a CICS journal name and the MVS system log streams or the SMF log.

**Viewing journal model definitions**

You can view information about your existing journal model definitions using the CICS Explorer or the Web User Interface.

**About this task**

The BAS resource definition that represents a journal model resource is called JRNMDEF. The **Journal model definitions** view in the Web User Interface displays the list of JRNMDEF definitions.

**Procedure**

1. From the main menu, click **Administration.**
2. From the Administration views menu, click either Basic CICS resource administration or Fully functional Business Application Services (BAS) administration.

3. Click Resource definitions to display the CICS resource definitions view.

4. Click Journal model definitions.

**Results**
The Web User Interface displays the list of journal model definitions.

**What to do next**
From this view you can also create, update, install, or remove journal model definitions.

**Related tasks**
Defining journal models using BAS
You define a resource definition for journal model by creating a BAS resource object, JRNMDEF.

Installing BAS journal model definitions
Install the BAS resource object for the journal model to make the resource available in the CICS region.

**Defining journal models using BAS**
You define a resource definition for journal model by creating a BAS resource object, JRNMDEF.

**About this task**
You can define the resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

**Procedure**
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > Journal model definitions.
2. From the Journal model definitions view, click the Create... button.
   To use an existing definition as the basis of the new one, click the check box before clicking the Create... button.
   The Journal model definitions create view is displayed.
3. Complete the relevant fields and click Yes to create the definition.

**Results**
The Journal model definitions view is displayed showing the new definition.

**What to do next**
To add the definition to a resource group, click the Add to resource group... button.

**Related tasks**
Viewing journal model definitions
You can view information about your existing journal model definitions using the CICS Explorer or the Web User Interface.

Installing BAS journal model definitions
Install the BAS resource object for the journal model to make the resource available in the CICS region.

**Installing BAS journal model definitions**
Install the BAS resource object for the journal model to make the resource available in the CICS region.

**Before you begin**
You must have created the required JRNMDEF resource object in the data repository to install the journal model resource in the CICS region.
About this task
You can install the BAS resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > Journal model definitions.
2. Click the Record check box to select a journal model definition and click the Install... button. Alternatively, click a journal model definition name and click the Install... button on the Journal model definitions detailed view.

Results
The journal model definition installs in the specified CICS region.

What to do next
After the journal model installs successfully, you can inquire about the resource by clicking CICS operations > Journal operations views > Models.

Related tasks
Viewing journal model definitions
You can view information about your existing journal model definitions using the CICS Explorer or the Web User Interface.
Defining journal models using BAS
You define a resource definition for journal model by creating a BAS resource object, JRNMDEF.

### JVMSERVER resource definitions
A JVMSERVER resource definition defines the runtime environment for a JVM server. The JVMSERVER resource defines the location of the JVM profile, the Language Environment enclave options, and other configuration information to control the initialization of the JVM.

Viewing JVMSERVER definitions
You can view information about your existing JVMSERVER definitions using the IBM CICS Explorer or the Web User Interface.

About this task
The BAS resource definition that represents a JVMSERVER resource is called JVMSVDEF. The JVMSERVER definitions view in the Web User Interface displays the list of JVMSVDEF definitions.

Procedure
1. From the main menu, click Administration.
2. From the Administration views menu, click either Basic CICS resource administration or Fully functional resource administration.
3. Click Resource definitions > JVMSERVER definitions.

Results
The Web User Interface displays the list of JVMSVDEF definitions for the current context.

What to do next
From this view you can create, remove, or install JVMSERVER resource definitions.

Related tasks
Defining JVMSERVER resources using BAS
You define a resource definition for a JVM server by creating a BAS resource object, JVMSVDEF.

**Installing BAS JVMSERVER definitions**
Install the BAS resource object for the JVM server to make it available to the CICS region.

---

### Defining JVMSERVER resources using BAS

You define a resource definition for a JVM server by creating a BAS resource object, JVMSVDEF.

**About this task**
You can define the resource object using the IBM CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

**Procedure**
1. From the main menu, click **Administration > Basic CICS resource administration > Resource definitions > Bundle definitions** to view the list of JVMSVDEF resource definitions.
2. Click the **Create...** button. To use an existing definition as the basis for the new definition, click the check box before clicking the **Create...** button.
   - The Bundle definitions create view displays.
3. Complete the relevant fields and click **Yes** to create the definition.

**Results**
The JVM server definitions view displays showing the new definition.

**What to do next**
To add the definition to a resource group, click the **Add to resource group...** button.

**Related tasks**
- **Viewing JVMSERVER definitions**
  You can view information about your existing JVMSERVER definitions using the IBM CICS Explorer or the Web User Interface.
- **Installing BAS JVMSERVER definitions**
  Install the BAS resource object for the JVM server to make it available to the CICS region.

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### Installing BAS JVMSERVER definitions

Install the BAS resource object for the JVM server to make it available to the CICS region.

**Before you begin**
You must have created the required JVMSVDEF resource object in the data repository to install the JVM server in the CICS region.

**About this task**
You can install the BAS resource object using the IBM CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

**Procedure**
1. From the main menu, click **Administration > Basic CICS resource administration > Resource definitions > JVM server definitions** to view the list of JVMSVDEF resource definitions.
2. Click the Record check box to select a definition and click the **Install...** button. Alternatively, click on a JVM server definition name and click the **Install...** button on the JVM server definitions detailed view.

**Results**
The JVM server installs in the specified CICS region.
What to do next
After the resource definition installs successfully, you can inquire about enabled JVM servers from the WUI main menu by selecting CICS operations > Enterprise Java component operations views > JVM server.

Related tasks
Viewing JVMSERVER definitions
You can view information about your existing JVMSERVER definitions using the IBM CICS Explorer or the Web User Interface.

Defining JVMSERVER resources using BAS
You define a resource definition for a JVM server by creating a BAS resource object, JVMSVDEF.

LIBRARY resource definitions

LIBRARY definitions describe the attributes for dynamic program LIBRARY resources.

Viewing LIBRARY definitions
You can view information about your existing LIBRARY definitions using the CICS Explorer or the Web User Interface.

About this task
The BAS resource definition that represents a LIBRARY resource is called LIBDEF. The LIBRARY definitions view in the Web User Interface displays information about existing LIBRARY definitions.

Procedure
1. From the main menu, click Administration views.
2. From the Administration views menu, click either Basic CICS resource administration views or Fully functional Business Application Services (BAS) administration views.
3. Click Resource definitions to display the CICS resource definitions view.
4. Click LIBRARY definitions.

Results
The Web User Interface displays the list of LIBRARY definitions.

What to do next
From this view you can also create, update, install, or remove LIBRARY definitions.

Related tasks
Defining LIBRARY resources using BAS
You define a LIBRARY resource definition by creating a BAS resource object, LIBDEF.

Installing BAS LIBRARY definitions
Install the BAS resource object for the LIBRARY resource to make the definition available in the CICS region.

Defining LIBRARY resources using BAS
You define a LIBRARY resource definition by creating a BAS resource object, LIBDEF.

About this task
You can define the resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.
Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > LIBRARY definitions.
2. From the LIBRARY definitions view, click the Create... button.
   To use an existing definition as the basis of the new definition, click the check box before clicking the Create... button.
   The LIBRARY definitions create view displays.
3. Complete the relevant fields and click Yes to create the definition.

Results
The LIBRARY definitions view displays showing the new definition.

What to do next
To add the definition to a resource group, click the Add to resource group... button.

Related tasks
Viewing LIBRARY definitions
You can view information about your existing LIBRARY definitions using the CICS Explorer or the Web User Interface.

Installing BAS LIBRARY definitions
Install the BAS resource object for the LIBRARY resource to make the definition available in the CICS region.

Before you begin
You must have created the required resource object in the data repository to install the LIBRARY resource in the CICS region.

About this task
You can install the BAS resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > LIBRARY definitions.
2. Click the Record check box to select a program definition and click the Install... button.
   Alternatively, click a LIBRARY definition name and click the Install... button on the LIBRARY definitions detailed view.

Results
The LIBRARY resource installs in the CICS region.

What to do next
After the LIBRARY resource installs successfully, you can inquire about the resource by clicking CICS operations > Program operations views > LIBRARYs, including DFHRPL.

Chapter 2. Creating resources with BAS 269
You define a LIBRARY resource definition by creating a BAS resource object, LIBDEF.

**LSR pool resource definitions**

LSR pool definitions describe the size and characteristics of local shared resource pools that VSAM uses for certain files.

**Viewing LSR pool definitions**

You can view information about your existing LSR pool definitions using the CICS Explorer or the Web User Interface.

**About this task**

The BAS resource definition that represents an LSR pool is called LSRDEF. The **LSR pool definitions** view in the Web User Interface displays information about existing LSR pool definitions.

**Procedure**

1. From the main menu, click **Administration**.
2. From the **Administration views menu**, click either **Basic CICS resource administration** or **Fully functional Business Application Services (BAS) administration**.
3. Click **CICS resource definitions** to display the **CICS resource definitions** view.
4. Click **LSR pool definitions**.

**Results**

The Web User Interface displays the list of LSR pool definitions.

**What to do next**

From this view you can also create, update, install, or remove LSR pool definitions.

**Related tasks**

- **Defining LSR pools using BAS**
  You define an LSR pool resource by creating a BAS resource object, LSRDEF.
- **Installing BAS LSR pool definitions**
  Install the BAS resource object for the LSR pool resource to make the definition available in the CICS region.

**Defining LSR pools using BAS**

You define an LSR pool resource by creating a BAS resource object, LSRDEF.

**About this task**

You can define the resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

**Procedure**

1. From the main menu, click **Administration > Basic CICS resource administration > Resource definitions > LSR pool definitions**.
2. From the **LSR pool definitions** view, click the **Create...** button.
   - To use an existing definition as the basis of the new definition, click the check box before clicking the **Create...** button.
   - The **LSR pool definitions** create view displays.
3. Complete the relevant fields and click **Yes** to create the definition.
Results
The LSR pool definitions view displays showing the new definition.

What to do next
To add the definition to a resource group, click the Add to resource group... button.

Related tasks
Viewing LSR pool definitions
You can view information about your existing LSR pool definitions using the CICS Explorer or the Web User Interface.

Installing BAS LSR pool definitions
Install the BAS resource object for the LSR pool resource to make the definition available in the CICS region.

Installing BAS LSR pool definitions
Install the BAS resource object for the LSR pool resource to make the definition available in the CICS region.

Before you begin
You must have created the required resource object in the data repository to install the LSR pool resource in the CICS region.

About this task
You can install the BAS resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > LSR pool definitions.
2. Click the Record check box to select a LSR pool definition and click the Install... button.
   Alternatively, click a LSR pool definition name and click the Install... button on the LSR pool definitions detailed view.

Results
The LSR pool resource installs in the CICS region.

What to do next
After the LSR pool resource definition installs successfully, you can inquire about the resource by clicking CICS operations > File operations views. From the File operations views menu, select either VSAM LSR pool buffers or VSAM LSR pools.

Related tasks
Viewing LSR pool definitions
You can view information about your existing LSR pool definitions using the CICS Explorer or the Web User Interface.

Defining LSR pools using BAS
You define an LSR pool resource by creating a BAS resource object, LSRDEF.

Map set resource definitions

Map set definitions describe the characteristics of a group of related screen layouts, or maps.

Viewing map set definitions

You can view information about your existing map set definitions using the CICS Explorer or the Web User Interface.

About this task
The BAS resource definition that represents a map set is called MAPDEF. The Map set definitions view in the Web User Interface displays information about existing map set definitions.

Procedure
1. From the main menu, click Administration.
2. From the Administration views menu, click either Basic CICS resource administration or Fully functional Business Application Services (BAS) administration.
3. Click CICS resource definitions to display the CICS resource definitions view.
4. Click Map set definitions.

Results
The Web User Interface displays the list of map set definitions.

What to do next
From this view you can also create, update, install, or remove map set definitions.

Related tasks
Defining map sets using BAS
You define a map set resource by creating a BAS resource object, MAPDEF.

Installing BAS map set definitions
Install the BAS resource object for the map set resource to make the definition available in the CICS region.

Defining map sets using BAS
You define a map set resource by creating a BAS resource object, MAPDEF.

About this task
You can define the resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > Map set definitions.
2. From the Map set definitions view, click the Create... button.
   To use an existing definition as the basis of the new definition, click the check box before clicking the Create... button.
   The Map set definitions create view displays.
3. Complete the relevant fields and click Yes to create the definition.

Results
The Map set definitions view displays showing the new definition.
What to do next
To add the definition to a resource group, click the Add to resource group... button.

Related tasks
Viewing map set definitions
You can view information about your existing map set definitions using the CICS Explorer or the Web User Interface.

Installing BAS map set definitions
Install the BAS resource object for the map set resource to make the definition available in the CICS region.

Installing BAS map set definitions
Install the BAS resource object for the map set resource to make the definition available in the CICS region.

Before you begin
You must have created the required resource object in the data repository to install the map set resource in the CICS region.

About this task
You can install the BAS resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > Map set definitions.
2. Click the Record check box to select a map set definition and click the Install... button.
   Alternatively, click a map set definition name and click the Install... button on the Map set definitions detailed view.

Results
The map set resource installs in the specified CICS region.

Related tasks
Viewing map set definitions
You can view information about your existing map set definitions using the CICS Explorer or the Web User Interface.

Defining map sets using BAS
You define a map set resource by creating a BAS resource object, MAPDEF.

MQCONN resource definitions
The MQCONN resource definition for the CICS region defines the attributes of the connection between CICS and IBM MQ.

Viewing BAS MQCONN definitions
You can view information about your existing MQCONN resource definitions using the CICS Explorer or the Web User Interface.

About this task
The BAS resource definition that represents an MQCONN resource is called MQCONDEF. The IBM MQ connection definitions view in the Web User Interface displays the list of MQCONDEF definitions. Only one MQCONN resource definition can be installed and used at a time in a CICS region.
Procedure
1. From the main menu, click Administration.
2. From the Administration views menu, click either Basic CICS resource administration or Fully functional Business Application Services (BAS) administration.
3. Click Resource definitions to display the CICS resource definitions menu.
4. Click IBM MQ connection definitions.

Results
The Web User Interface displays the list of MQCONDEF definitions for the current context.

What to do next
From this view you can create, update, remove, or install MQCONN resource definitions.

Related tasks
Defining MQCONN resources using BAS
You define a resource definition for the connection between CICS and IBM MQ by creating a BAS resource object, MQCONDEF.

Installing BAS MQCONN definitions
Install the BAS resource object for the MQCONN resource to replace the existing IBM MQ connection definition for the CICS region with your new definition.

Defining MQCONN resources using BAS
You define a resource definition for the connection between CICS and IBM MQ by creating a BAS resource object, MQCONDEF.

About this task
You can define the resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > IBM MQ connection definitions to view the list of MQCONDEF resource definitions.
2. Click the Create... button.
   To use an existing definition as the basis for the new definition, click the check box before clicking the Create... button.
   The IBM MQ connection definitions view displays.
3. Complete the relevant fields and click Yes to create the definition.

Results
The IBM MQ connection definitions view displays showing the new definition.

What to do next
To add the definition to a resource group, click the Add to resource group... button.

Related tasks
Viewing BAS MQCONN definitions
You can view information about your existing MQCONN resource definitions using the CICS Explorer or the Web User Interface.

Installing BAS MQCONN definitions
Install the BAS resource object for the MQCONN resource to replace the existing IBM MQ connection definition for the CICS region with your new definition.

**Installing BAS MQCONN definitions**

Install the BAS resource object for the MQCONN resource to replace the existing IBM MQ connection definition for the CICS region with your new definition.

**Before you begin**

You must have created the required MQCONDEF resource object in the data repository to install the MQCONN resource in the CICS region.

**About this task**

You can install the BAS resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface. Only one MQCONN resource definition can be installed at a time in a CICS region, so when you install a second MQCONN resource definition, CICS implicitly discards the existing MQCONN definition before proceeding with the installation, unless you are reinstalling an MQCONN resource definition with the same name.

**Procedure**

1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > IBM MQ connection definitions to view the list of MQCONDEF resource definitions.

2. Click the Record check box to select an MQCONDEF definition and click the Install... button.

   Alternatively, click an MQCONDEF definition name and click the Install... button on the MQCONDEF definitions detailed view.

**Results**

The MQCONN resource is installed in the specified CICS region.

**What to do next**

After the resource definition installs successfully, you can inquire about the resource from the main menu by clicking CICS operations > DB2, DBCTL and IBM MQ operations views > IBM MQ connection definitions.

**Related tasks**

Viewing BAS MQCONN definitions

You can view information about your existing MQCONN resource definitions using the CICS Explorer or the Web User Interface.

Defining MQCONN resources using BAS
You define a resource definition for the connection between CICS and IBM MQ by creating a BAS resource object, MQCONDEF.

### MQMONITOR resource definitions

MQMONITOR resource definitions define attributes for WebSphere MQ message consumers, such as the trigger monitor transaction CKTI.

### Viewing BAS MQMONITOR definitions

You can view information about your existing MQMONITOR resource definitions using the CICS Explorer or the Web User Interface.

**About this task**

The BAS resource definition that represents an MQMONITOR resource is called MQMONDEF. The WebSphere MQ monitor definitions view in the Web User Interface displays the list of MQMONDEF definitions.

**Procedure**

1. From the main menu, click Administration.
2. From the Administration views menu, click either Basic CICS resource administration or Fully functional Business Application Services (BAS) administration.
3. Click Resource definitions to display the CICS resource definitions menu.
4. Click WebSphere MQ monitor definitions.

**Results**

The Web User Interface displays the list of MQMONDEF definitions for the current context.

**What to do next**

From this view you can create, update, remove, or install MQMONITOR resource definitions.

### Defining MQMONITOR resources using BAS

You define a resource definition for an MQ monitor, which can be a trigger monitor, an MQ bridge monitor, or a user-written monitor, by creating a BAS resource object, MQMONDEF.

**About this task**

You can define the resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

**Procedure**

1. From the main menu, click Administration > Basic CICS resource administration or Fully functional Business Application Services (BAS) administration > Resource definitions > WebSphere MQ monitor definitions to view the list of MQMONDEF resource definitions.
2. Click the Create button.
   - To use an existing definition as the basis for the new definition, click the check box before clicking the Create button.
   - The WebSphere MQ monitor definition view displays.
3. Complete the relevant fields and click Yes to create the definition.

**Results**

The WebSphere MQ monitor definitions view displays showing the new definition.
What to do next
To add the definition to a resource group, click the Add to resource group button.

Installing BAS MQMONITOR definitions
Install the BAS resource object for the MQMONITOR resource to make the definition available in the CICS region.

Before you begin
You must have created the MQMONDEF resource object in the data repository to install the MQMONITOR resource in the CICS region.

About this task
You can install the BAS resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > WebSphere MQ monitor definitions to view the list of MQMONDEF resource definitions.
2. Click the Record check box to select an MQMONDEF definition and click the Install button.
   Alternatively, click an MQMONDEF definition name and click the Install button on the WebSphere MQ monitor definitions detailed view.

Results
The MQMONITOR resource is installed in the CICS region.

What to do next
After the resource definition installs successfully, you can inquire about the resource from the main menu by clicking CICS operations > DB2, DBCTL and WebSphere MQ operations views > WebSphere MQ monitors.

Partition set resource definitions
Partition set definitions describe the characteristics of a display partition configuration.

Viewing partition set definitions
You can view information about your existing partition set definitions using the CICS Explorer or the Web User Interface.

About this task
The BAS resource definition that represents a partition set is called PRTNDEF. The Partition set definitions view in the Web User Interface displays information about existing partition set definitions.

Procedure
1. From the main menu, click Administration.
2. From the Administration views menu, click either Basic CICS resource administration or Fully functional Business Application Services (BAS) administration.
3. Click CICS resource definitions to display the CICS resource definitions view.
4. Click Partition set definitions.

Results
The Web User Interface displays the list of partition set definitions.
What to do next
From this view you can also create, update, install, or remove partition set definitions.

Related tasks
Defining partition sets using BAS
You define a partition set resource by creating a BAS resource object, PRTNDEF.

Installing BAS partition set definitions
Install the BAS resource object for the partition set resource to make the definition available in the CICS region.

Defining partition sets using BAS
You define a partition set resource by creating a BAS resource object, PRTNDEF.

About this task
You can define the resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > Partition set definitions.
2. From the Partition set definitions view, click the Create... button.
   To use an existing definition as the basis of the new one, click the check box before clicking the Create... button.
   The Partition set definitions create view displays.
3. Complete the relevant fields and click Yes to create the definition.

Results
The Partition set definitions view displays showing the new definition.

What to do next
To add the definition to a resource group, click the Add to resource group... button.

Related tasks
Viewing partition set definitions
You can view information about your existing partition set definitions using the CICS Explorer or the Web User Interface.

Installing BAS partition set definitions
Install the BAS resource object for the partition set resource to make the definition available in the CICS region.

Before you begin
You must have created the required resource object in the data repository to install the partition set resource in the CICS region.

About this task
You can install the BAS resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.
Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > Partition set definitions.
2. Click the Record check box to select a partition set definition and click the Install... button. Alternatively, click a partition set definition name and click the Install... button on the Partition set definitions detailed view.

Results
The partition set resource installs in the specified CICS region.

Related tasks
Viewing partition set definitions
You can view information about your existing partition set definitions using the CICS Explorer or the Web User Interface.

Defining partition sets using BAS
You define a partition set resource by creating a BAS resource object, PRTNDEF.

Partner resource definitions
Partner definitions enable CICS application programs to communicate with a partner application program running on a remote region using APPC protocols.

Viewing partner definitions
You can view information about your existing partner definitions using the CICS Explorer or the Web User Interface.

About this task
The BAS resource definition that represents a partner definition is called PARTDEF. The Partition definitions view in the Web User Interface displays information about existing partner definitions.

Procedure
1. From the main menu, click Administration.
2. From the Administration views menu, click either Basic CICS resource administration or Fully functional Business Application Services (BAS) administration.
3. Click CICS resource definitions to display the CICS resource definitions view.
4. Click Partner definitions.

Results
The Web User Interface displays the list of partner definitions.

What to do next
From this view you can also create, update, install, or remove partner definitions.

Related tasks
Defining partner definitions using BAS
You define a partner resource by creating a BAS resource object, PARTDEF.

Installing BAS partner definitions
Install the BAS resource object for the partner resource to make the definition available in the CICS region.

**Defining partner definitions using BAS**

You define a partner resource by creating a BAS resource object, PARTDEF.

**About this task**

You can define the resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

**Procedure**

1. From the main menu, click **Administration > Basic CICS resource administration > Resource definitions > Partner definitions**.
2. From the **Partner definitions** view, click the **Create...** button.
   - To use an existing definition as the basis of the new one, click the check box before clicking the **Create...** button.
   - The **Partner definitions** create view displays.
3. Complete the relevant fields and click **Yes** to create the definition.

**Results**

The **Partner definitions** view displays showing the new definition.

**What to do next**

To add the definition to a resource group, click the **Add to resource group...** button.

**Related tasks**

- **Viewing partner definitions**
  You can view information about your existing partner definitions using the CICS Explorer or the Web User Interface.
- **Installing BAS partner definitions**
  Install the BAS resource object for the partner resource to make the definition available in the CICS region.

**Installing BAS partner definitions**

Install the BAS resource object for the partner resource to make the definition available in the CICS region.

**Before you begin**

You must have created the required resource object in the data repository to install the partner resource in the CICS region.

**About this task**

You can install the BAS resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

**Procedure**

1. From the main menu, click **Administration > Basic CICS resource administration > Resource definitions > Partner definitions**.
2. Click the Record check box to select a partner definition and click the **Install...** button.
   - Alternatively, click a partner definition name and click the **Install...** button on the **Partner definitions** detailed view.
Results
The partner definition installs in the specified CICS region.

Related tasks
Viewing partner definitions
You can view information about your existing partner definitions using the CICS Explorer or the Web User Interface.

Defining partner definitions using BAS
You define a partner resource by creating a BAS resource object, PARTDEF.

Pipeline resource definitions

A PIPELINE resource definition is used when a CICS application is acting as a web service provider or requester. It provides information about the message handler programs that act on a web service request and on the response.

Viewing pipeline definitions
You can view information about your existing pipeline definitions using the CICS Explorer or the Web User Interface.

About this task
The BAS resource definition that represents a pipeline definition is called PIPEDEF. The Pipeline definitions view in the Web User Interface displays information about existing pipeline definitions.

Procedure
1. From the main menu, click Administration views.
2. From the Administration views menu, click either Basic CICS resource administration views or Fully functional Business Application Services (BAS) administration views.
3. Click CICS resource definitions to display the CICS resource definitions view.
4. Click Pipeline definitions.

Results
The Web User Interface displays the list of pipeline definitions.

What to do next
From this view you can also create, update, install, or remove pipeline definitions.

Related tasks
Defining pipeline definitions using BAS
You define a PIPELINE resource by creating a BAS resource object, PIPEDEF.

Installing BAS pipeline definitions
Install the BAS resource object for the pipeline resource to make the definition available in the CICS region.

Defining pipeline definitions using BAS
You define a PIPELINE resource by creating a BAS resource object, PIPEDEF.

About this task
You can define the resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.
Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > Pipeline definitions.
2. From the Pipeline definitions view, click the Create... button.
   To use an existing definition as the basis of the new definition, click the check box before clicking the Create... button.
   The Pipeline definitions create view displays.
3. Complete the relevant fields and click Yes to create the definition.

Results
The Pipeline definitions view displays showing the new definition.

What to do next
To add the definition to a resource group, click the Add to resource group... button.

Related tasks
Viewing pipeline definitions
You can view information about your existing pipeline definitions using the CICS Explorer or the Web User Interface.

Installing BAS pipeline definitions
Install the BAS resource object for the pipeline resource to make the definition available in the CICS region.

Before you begin
You must have created the required resource object in the data repository to install the PIPELINE resource in the CICS region.

About this task
You can install the BAS resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > Pipeline definitions.
2. Click the Record check box to select a pipeline definition and click the Install... button.
   Alternatively, click a pipeline definition name and click the Install... button on the Pipeline definitions detailed view.

Results
The PIPELINE resource installs in the specified CICS region.

Related tasks
Viewing pipeline definitions
You can view information about your existing pipeline definitions using the CICS Explorer or the Web User Interface.

Defining pipeline definitions using BAS
You define a PIPELINE resource by creating a BAS resource object, PIPEDEF.

**PROCESSTYPE definitions**

PROCESSTYPE resource definitions describe the physical and operational characteristics of CICS business transaction services (BTS) process types.

**Viewing process type definitions**

You can view information about your existing process type definitions using the CICS Explorer or the Web User Interface.

**About this task**

The BAS resource definition that represents a pipeline definition is called PROCDEF. The **Process type definitions** view in the Web User Interface displays information about existing process type definitions.

**Procedure**

1. From the main menu, click **Administration**.
2. From the **Administration views menu**, click either **Basic CICS resource administration** or **Fully functional Business Application Services (BAS) administration**.
3. Click **CICS resource definitions** to display the **CICS resource definitions** view.
4. Click **Process type definitions**.

**Results**

The Web User Interface displays the list of process type definitions.

**What to do next**

From this view you can also create, update, install, or remove process type definitions.

**Related tasks**

*Defining process types using BAS*

You define a PROCESSTYPE resource by creating a BAS resource object, PROCDEF.

*Installing BAS process type definitions*

Install the BAS resource object for the PROCESSTYPE resource to make the definition available in the CICS region.

**Defining process types using BAS**

You define a PROCESSTYPE resource by creating a BAS resource object, PROCDEF.

**About this task**

You can define the resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

**Procedure**

1. From the main menu, click **Administration** > **Basic CICS resource administration** > **Resource definitions** > **Process type definitions**.
2. From the **Process types definitions** view, click the **Create...** button.
   - To use an existing definition as the basis of the new definition, click the check box before clicking the **Create...** button.
   - The **Process types definitions** create view displays.
3. Complete the relevant fields and click **Yes** to create the definition.
Results
The Process types definitions view displays showing the new definition.

What to do next
To add the definition to a resource group, click the Add to resource group... button.

Related tasks
Viewing process type definitions
You can view information about your existing process type definitions using the CICS Explorer or the Web User Interface.

Installing BAS process type definitions
Install the BAS resource object for the PROCESSTYPE resource to make the definition available in the CICS region.

Installing BAS process type definitions
Install the BAS resource object for the PROCESSTYPE resource to make the definition available in the CICS region.

Before you begin
You must have created the required resource object in the data repository to install the PROCESSTYPE resource in the CICS region.

About this task
You can install the BAS resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > Process type definitions.
2. Click the Record check box to select a process type definition and click the Install... button.
   Alternatively, click a process type definition name and click the Install... button on the Process type definitions detailed view.

Results
The PROCESSTYPE resource installs successfully in the specified CICS region.

Related tasks
Viewing process type definitions
You can view information about your existing process type definitions using the CICS Explorer or the Web User Interface.

Defining process types using BAS
You define a PROCESSTYPE resource by creating a BAS resource object, PROCDEF.

Profile resource definitions
Profile definitions control the interactions between transactions and terminals or logical units.

Viewing profile resource definitions
You can view information about your existing profile definitions using the CICS Explorer or the Web User Interface.

About this task
The BAS resource definition that represents a profile definition is called PROFDEF. The Profile definitions view in the Web User Interface displays information about existing profile definitions.
Procedure
1. From the main menu, click Administration.
2. From the Administration views menu, click either Basic CICS resource administration or Fully functional Business Application Services (BAS) administration.
3. Click CICS resource definitions to display the CICS resource definitions view.
4. Click Profile definitions.

Results
The Web User Interface displays the list of profile definitions.

What to do next
From this view you can also create, update, install, or remove profile definitions.

Related tasks
Defining profiles using BAS
You define a PROFILE resource by creating a BAS resource object, PROFDEF.

Installing BAS profile definitions
Install the BAS resource object for the PROFILE resource to make the definition available in the CICS region.

Defining profiles using BAS
You define a PROFILE resource by creating a BAS resource object, PROFDEF.

About this task
You can define the resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > Profile definitions.
2. From the Profile definitions view, click the Create... button.
   To use an existing definition as the basis of the new one, click the check box before clicking the Create... button.
   The Profile definitions create view displays.
3. Complete the relevant fields and click Yes to create the definition.

Results
The Profile definitions view displays showing the new definition.

What to do next
To add the definition to a resource group, click the Add to resource group... button.

Related tasks
Viewing profile resource definitions
You can view information about your existing profile definitions using the CICS Explorer or the Web User Interface.

Installing BAS profile definitions
Install the BAS resource object for the PROFILE resource to make the definition available in the CICS region.

**Installing BAS profile definitions**

Install the BAS resource object for the PROFILE resource to make the definition available in the CICS region.

**Before you begin**

You must have created the required resource object in the data repository to install the PROFILE resource in the CICS region.

**About this task**

You can install the BAS resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

**Procedure**

1. From the main menu, click **Administration > Basic CICS resource administration > Resource definitions > Profile definitions**.
2. Click the Record check box to select a profile definition and click the **Install...** button.
   Alternatively, click a profile definition name and click the **Install...** button on the **Profile definitions** detailed view.

**Results**

The PROFILE resource installs successfully in the specified CICS region.

**Related tasks**

- **Viewing profile resource definitions**
  
  You can view information about your existing profile definitions using the CICS Explorer or the Web User Interface.

- **Defining profiles using BAS**
  
  You define a PROFILE resource by creating a BAS resource object, PROFDEF.

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**PROGRAM resource definitions**

PROGRAM resource definitions describe the control information for a program that is stored in the program library and used to process a transaction.

**Viewing program definitions**

You can view your existing program definitions using the CICS Explorer or the Web User Interface.

**About this task**

The BAS resource definition that represents a program definition is called PROGDEF. The **Program definitions** view in the Web User Interface displays information about existing program definitions.

**Procedure**

1. From the main menu, click **Administration views**.
2. From the **Administration views menu**, click either **Basic CICS resource administration views** or **Fully functional Business Application Services (BAS) administration views**.
3. Click **CICS resource definitions** to display the **CICS resource definitions** view.
4. Click **Program definitions**.
**Results**
The Web User Interface displays the list of program definitions.

**What to do next**
From this view you can also create, update, install, or remove program definitions.

**Related tasks**
- Defining programs using BAS
  You define a PROGRAM resource by creating a BAS resource object, PROGDEF.
  - Installing BAS program definitions
  Install the BAS resource object for the PROGRAM resource to make the definition available in the CICS region.

**Defining programs using BAS**
You define a PROGRAM resource by creating a BAS resource object, PROGDEF.

**About this task**
You can define the resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

**Procedure**
1. From the main menu, click **Administration > Basic CICS resource administration > Resource definitions > Program definitions**.
2. From the **Program definitions** view, click the **Create...** button.
   - To use an existing definition as the basis of the new one, click the check box before clicking the **Create...** button.
   - The **Program definitions** create view displays.
3. Complete the relevant fields and click **Yes** to create the definition.

**Results**
The **Program definitions** view displays showing the new definition.

**What to do next**
To add the definition to a resource group, click the **Add to resource group...** button.

**Related tasks**
- Viewing program definitions
  You can view your existing program definitions using the CICS Explorer or the Web User Interface.
  - Installing BAS program definitions
  Install the BAS resource object for the PROGRAM resource to make the definition available in the CICS region.

**Installing BAS program definitions**
Install the BAS resource object for the PROGRAM resource to make the definition available in the CICS region.

**Before you begin**
You must have created the required resource object in the data repository to install the PROGRAM resource in the CICS region.

**About this task**
You can install the BAS resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.
Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > Program definitions.
2. Click the Record check box to select a program definition and click the Install... button.
   Alternatively, click a program definition name and click the Install... button on the Program definitions detailed view.

Results
The PROGRAM resource installs successfully in the specified CICS region.

What to do next
After the resource installs, you can inquire on the resource by clicking CICS operations > Program operations views.

Related tasks
Viewing program definitions
You can view your existing program definitions using the CICS Explorer or the Web User Interface.
Defining programs using BAS
You define a PROGRAM resource by creating a BAS resource object, PROGDEF.

Session resource definitions
Session definitions describe the nature of logical links between regions or systems that communicate using intersystem communication (ISC) or multiple region operation (MRO).

Viewing session definitions
You can view your existing session definitions using the CICS Explorer or the Web User Interface.

About this task
The BAS resource object that represents a session definition is called SESSDEF. The Session definitions view in the Web User Interface displays information about existing session definitions.

Procedure
1. From the main menu, click Administration.
2. From the Administration views menu, click either Basic CICS resource administration or Fully functional Business Application Services (BAS) administration.
3. Click CICS resource definitions to display the CICS resource definitions view.
4. Click Session definitions.

Results
The Web User Interface displays the list of session definitions.

What to do next
From this view you can also create, update, or remove session definitions.

Related tasks
Defining sessions using BAS
You define a SESSION resource by creating a BAS resource object, SESSDEF.

**Defining sessions using BAS**
You define a SESSION resource by creating a BAS resource object, SESSDEF.

**About this task**
You can define the resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

**Procedure**
1. From the main menu, click **Administration > Basic CICS resource administration > Resource definitions > Session definitions**.
2. From the **Session definitions** view, click the **Create...** button.
   - To use an existing definition as the basis of the new one, click the check box before clicking the **Create...** button.
   - The **Session definitions** create view displays.
3. Complete the relevant fields and click **Yes** to create the definition.

**Results**
The **Session definitions** view is displayed showing the new definition.

**What to do next**
To add the definition to a resource group, click the **Add to resource group...** button.

**Related tasks**
Viewing session definitions
You can view your existing session definitions using the CICS Explorer or the Web User Interface.

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**TCPIPSERVICE resource definitions**
TCPIPSERVICE resource definitions define which TCP/IP services are to use internal sockets support.

**Viewing TCP/IP service definitions**
You can view your existing TCPIPSERVICE resource definitions using the CICS Explorer or the Web User Interface.

**About this task**
The BAS resource object that represents a TCPIPSERVICE definition is called TCPDEF. The **TCP/IP service definitions** view in the Web User Interface displays information about existing TCPIPSERVICE definitions.

**Procedure**
1. From the main menu, click **Administration**.
2. From the **Administration views menu**, click either **Basic CICS resource administration** or **Fully functional Business Application Services (BAS) administration**.
3. Click **CICS resource definitions** to display the **CICS resource definitions** view.
4. Click **TCP/IP service definitions**.

**Results**
The Web User Interface displays the list of TCPIPSERVICE definitions.
What to do next
From this view you can also create, update, install, or remove TCPIPSERVICE definitions.

Related tasks

Defining TCP/IP services using BAS
You define a TCPIPSERVICE resource by creating a BAS resource object, TCPDEF.

Installing a BAS TCP/IP service definition
Install the BAS resource object for the TCPIPSERVICE resource to make the definition available in the CICS region.

Defining TCP/IP services using BAS
You define a TCPIPSERVICE resource by creating a BAS resource object, TCPDEF.

About this task
You can define the resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > TCP/IP service definitions.
2. From the TCP/IP service definitions view, click the Create... button.
   To use an existing definition as the basis of the new one, click the check box before clicking the Create... button.
   The TCP/IP service definitions create view displays.
3. Complete the relevant fields and click Yes to create the definition.

Results
The TCP/IP service definitions view displays showing the new definition.

What to do next
To add the definition to a resource group, click the Add to resource group... button.

Related tasks

Viewing TCP/IP service definitions
You can view your existing TCPIPSERVICE resource definitions using the CICS Explorer or the Web User Interface.

Installing a BAS TCP/IP service definition
Install the BAS resource object for the TCPIPSERVICE resource to make the definition available in the CICS region.

Installing a BAS TCP/IP service definition
Install the BAS resource object for the TCPIPSERVICE resource to make the definition available in the CICS region.

Before you begin
You must have created the required resource object in the data repository to install the TCPIPSERVICE resource in the CICS region.

About this task
You can install the BAS resource object using the CICS Explorer or the Web User Interface. The following procedure uses the Web User Interface.
Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > TCP/IP service definitions.
2. Click the Record check box to select a TCP/IP service definition and click the Install... button.
   Alternatively, click a TCP/IP service definition name and click the Install... button on the TCP/IP service definitions detailed view.

Results
The TCPIPSERVICE installs in the specified CICS region.

What to do next
After the resource installs successfully, you can inquire on the resource by clicking CICS operations > TCP/IP service operations views

Related tasks
Viewing TCP/IP service definitions
You can view your existing TCPIPSERVICE resource definitions using the CICS Explorer or the Web User Interface.

Defining TCP/IP services using BAS
You define a TCPIPSERVICE resource by creating a BAS resource object, TCPDEF.

Transient data queue resource definitions
Transient data queue definitions describe intrapartition, extrapartition, indirect, and remote transient data destinations.

Viewing transient data queue definitions
You can view information about your existing TDQUEUE resource definitions using the CICS Explorer or the Web User Interface.

About this task
The BAS resource object that represents a TDQUEUE definition is called TDQDEF. The Transient data queue definitions view in the Web User Interface displays information about existing TDQUEUE definitions.

Procedure
1. From the main menu, click Administration.
2. From the Administration views menu, click either Basic CICS resource administration or Fully functional Business Application Services (BAS) administration.
3. Click CICS resource definitions to display the CICS resource definitions view.
4. Click Transient data queue definitions.

Results
The Web User Interface displays the list of TDQUEUE definitions.

What to do next
From this view you can also create, update, install, or remove TDQUEUE definitions.

Related tasks
Defining transient data queues using BAS
You define a TDQUEUE resource by creating a BAS resource object, TDQDEF.
Installing BAS transient data queue definitions
Install the BAS resource object for the TDQUEUE resource to make the definition available in the CICS region.

**Defining transient data queues using BAS**

You define a TDQUEUE resource by creating a BAS resource object, TDQDEF.

**About this task**

You can define the resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

**Procedure**

1. From the main menu, click **Administration > Basic CICS resource administration > Resource definitions > Transient data queue definitions**.
2. From the **Transient data queue definitions** view, click the **Create...** button.
   - To use an existing definition as the basis of the new one, click the check box before clicking the **Create...** button.
   - The **Transient data queue definitions** create view is displays.
3. Complete the relevant fields and click **Yes** to create the definition.

**Results**

The **Transient data queue definitions** view displays showing the new definition.

**What to do next**

To add the definition to a resource group, click the **Add to resource group...** button.

**Related tasks**

- **Viewing transient data queue definitions**
  You can view information about your existing TDQUEUE resource definitions using the CICS Explorer or the Web User Interface.

- **Installing BAS transient data queue definitions**
  Install the BAS resource object for the TDQUEUE resource to make the definition available in the CICS region.

**Installing BAS transient data queue definitions**

Install the BAS resource object for the TDQUEUE resource to make the definition available in the CICS region.

**Before you begin**

You must have created the required resource object in the data repository to install the TDQUEUE resource in the CICS region.

**About this task**

You can install the BAS resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

**Procedure**

1. From the main menu, click **Administration > Basic CICS resource administration > Resource definitions > Transient data queue definitions**.
2. Click the Record check box to select a transient data queue definition and click the **Install...** button.
   - Alternatively, click a transient data queue definition name and click the **Install...** button on the **Transient data queue definitions** detailed view.
Results
The TDQUEUE resource installs in the specified CICS region.

What to do next
After the resource installs successfully, you can inquire about the resource by clicking CICS operations > Transient data queue (TDQ) operations views.

Related tasks
Viewing transient data queue definitions
You can view information about your existing TDQUEUE resource definitions using the CICS Explorer or the Web User Interface.

Defining transient data queues using BAS
You define a TDQUEUE resource by creating a BAS resource object, TDQDEF.

Terminal resource definitions
Terminal resource definitions describe the unique characteristics of the terminal devices, including visual display units, printers, and operating system consoles, with which CICS communicates.

Viewing terminal definitions
You can view information about your existing TERMINAL resource definitions using the CICS Explorer or the Web User Interface.

About this task
The BAS resource object that represents a TERMINAL definition is called TERMDEF. The Terminal definitions view in the Web User Interface displays information about existing TERMINAL definitions.

Procedure
1. From the main menu, click Administration.
2. From the Administration views menu, click either Basic CICS resource administration or Fully functional Business Application Services (BAS) administration.
3. Click CICS resource definitions to display the CICS resource definitions view.
4. Click Terminal definitions.

Results
The Web User Interface displays the list of TERMINAL definitions.

What to do next
From this view you can also create, update, install, or remove TERMINAL definitions.

Related tasks
Defining terminals using BAS
You define a TERMINAL resource by creating a BAS resource object, TERMDNEF.

Installing BAS terminal definitions
Install the BAS resource object for the TERMINAL resource to make the definition available in the CICS region.

Defining terminals using BAS
You define a TERMINAL resource by creating a BAS resource object, TERMDNEF.

About this task
You can define the resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.
Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > Terminal definitions.
2. From the Terminal definitions view, click the Create... button.
To use an existing definition as the basis of the new one, click the check box before clicking the Create... button.
The Terminal definitions create view displays.
3. Complete the relevant fields and click Yes to create the definition.

Results
The Terminal definitions view displays showing the new definition.

What to do next
To add the definition to a resource group, click the Add to resource group... button.

Related tasks
Viewing terminal definitions
You can view information about your existing TERMINAL resource definitions using the CICS Explorer or the Web User Interface.
Installing BAS terminal definitions
Install the BAS resource object for the TERMINAL resource to make the definition available in the CICS region.

Installing BAS terminal definitions
Install the BAS resource object for the TERMINAL resource to make the definition available in the CICS region.

Before you begin
You must have created the required resource object in the data repository to install the TERMINAL resource in the CICS region.

About this task
You can install the BAS resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > Terminal definitions.
2. Click the Record check box to select a terminal definition and click the Install... button.
Alternatively, click a terminal definition name and click the Install... button on the Terminal definitions detailed view.

Results
The TERMINAL resource installs in the specified CICS region.

What to do next
After the TERMINAL resource installs successfully, you can inquire on the resource by clicking CICS operations > Terminal operations views.

Related tasks
Viewing terminal definitions
You can view information about your existing TERMINAL resource definitions using the CICS Explorer or the Web User Interface.
Defining terminals using BAS
You define a TERMINAL resource by creating a BAS resource object, TERMDEF.

**Transaction resource definitions**

Transaction definitions describe how transactions are to run in a CICS region.

**Viewing transaction definitions**

You can view information about your existing transaction resource definitions using the CICS Explorer or the Web User Interface.

**About this task**

The BAS resource object that represents a transaction definition is called TRANDEF. The **Transaction definitions** view in the Web User Interface displays information about existing transaction definitions.

**Procedure**

1. From the main menu, click **Administration**.
2. From the **Administration views menu**, click either **Basic CICS resource administration** or **Fully functional Business Application Services (BAS) administration**.
3. Click **CICS resource definitions** to display the **CICS resource definitions** view.
4. Click **Transaction definitions**.

**Results**

The Web User Interface displays the list of transaction definitions.

**What to do next**

From this view you can also create, update, install, or remove transaction definitions.

**Related tasks**

- Defining transactions using BAS
- Installing BAS transaction definitions

**Defining transactions using BAS**

You define a transaction resource by creating a BAS resource object, TRANDEF.

**About this task**

You can define the resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

**Procedure**

1. From the main menu, click **Administration > Basic CICS resource administration > Resource definitions > Transaction definitions**.
2. From the **Transaction definitions** view, click the Create... button.
   - To use an existing definition as the basis of the new one, click the check box before clicking the Create... button.
   - The **Transaction definitions** create view is displayed.
3. Complete the relevant fields and click Yes to create the definition.

**Results**

The **Transaction definitions** view displays showing the new definition.
What to do next
To add the definition to a resource group, click the **Add to resource group...** button.

**Related tasks**
- Viewing transaction definitions
  You can view information about your existing transaction resource definitions using the CICS Explorer or the Web User Interface.
- Installing BAS transaction definitions
  Install the BAS resource object for the transaction resource to make the definition available in the CICS region.

**Installing BAS transaction definitions**
Install the BAS resource object for the transaction resource to make the definition available in the CICS region.

**Before you begin**
You must have created the required resource object in the data repository to install the transaction resource in the CICS region.

**About this task**
You can install the BAS resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

**Procedure**
1. From the main menu, click **Administration > Basic CICS resource administration > Resource definitions > Transaction definitions**.
2. Click the Record check box to select a transaction definition and click the **Install...** button.
   Alternatively, click a transaction definition name and click the **Install...** button on the **Transaction definitions** detailed view.

**Results**
The TRANSACTION resource installs in the specified CICS region.

**What to do next**
After the resource installs successfully, you can inquire on the resource by clicking **CICS operations > Transaction operations views**.

**Related tasks**
- Viewing transaction definitions
  You can view information about your existing transaction resource definitions using the CICS Explorer or the Web User Interface.
- **Defining transactions using BAS**
You define a transaction resource by creating a BAS resource object, TRANDEF.

## Transaction class definitions

Transaction class definitions describe the operational characteristics for transactions belonging to the class.

### Viewing transaction class definitions

You can view existing information about your transaction class definitions using the CICS Explorer or the Web User Interface.

**About this task**

The BAS resource object that represents a transaction class definition is called TRNCLDEF. The **Transaction definitions** view in the Web User Interface displays information about existing transaction class definitions.

**Procedure**

1. From the main menu, click Administration views.
2. From the Administration views menu, click either Basic CICS resource administration views or Fully functional Business Application Services (BAS) administration views.
3. Click CICS resource definitions to display the CICS resource definitions view.
4. Click Transaction definitions.

**Results**

The Web User Interface displays the list of transaction class definitions.

**What to do next**

From this view you can also create, update, install, or remove transaction class definitions.

**Related tasks**

- Defining transaction classes using BAS
- Installing BAS transaction class definitions

### Defining transaction classes using BAS

You define a transaction class resource by creating a BAS resource object, TRNCLDEF.

**About this task**

You can define the resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

**Procedure**

1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > Transaction class definitions.
2. From the Transaction class definitions view, click the Create... button.
   - To use an existing definition as the basis of the new one, click the check box before clicking the Create... button.
   - The Transaction class definitions create view is displayed.
3. Complete the relevant fields and click Yes to create the definition.
Results
The Transaction class definitions view displays showing the new definition.

What to do next
To add the definition to a resource group, click the Add to resource group... button.

Related tasks
Viewing transaction class definitions
You can view existing information about your transaction class definitions using the CICS Explorer or the Web User Interface.

Installing BAS transaction class definitions
Install the BAS resource object for the transaction class resource to make the definition available in the CICS region.

Installing BAS transaction class definitions
Install the BAS resource object for the transaction class resource to make the definition available in the CICS region.

Before you begin
You must have created the required resource object in the data repository to install the transaction class resource in the CICS region.

About this task
You can install the BAS resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > Transaction class definitions.
2. Click the Record check box to select a transaction class definition and click the Install... button.
   Alternatively, click a transaction class definition name and click the Install... button on the Transaction class definitions detailed view.

Results
The resource installs into the specified CICS region.

Related tasks
Viewing transaction class definitions
You can view existing information about your transaction class definitions using the CICS Explorer or the Web User Interface.

Defining transaction classes using BAS
You define a transaction class resource by creating a BAS resource object, TRNCLDEF.

**Temporary storage model definitions**

Temporary storage definitions describe the attributes that govern the characteristics of CICS temporary storage queues.

**Viewing temporary storage model definitions**

You can view existing information about your temporary storage model definitions using the CICS Explorer or the Web User Interface.

**About this task**

The BAS resource object that represents a transaction class definition is called TSMDEF. The **Temporary storage model definitions** view in the Web User Interface displays information about existing transaction class definitions.

**Procedure**

1. From the main menu, click **Administration**.
2. From the **Administration views menu**, click either **Basic CICS resource administration** or **Fully functional Business Application Services (BAS) administration**.
3. Click **CICS resource definitions** to display the **CICS resource definitions** view.
4. Click **Temporary storage model definitions**.

**Results**

The Web User Interface displays the list of temporary storage model definitions.

**What to do next**

From this view you can also create, update, install, or remove temporary storage model definitions.

**Related tasks**

- **Defining temporary storage models using BAS**
  You define a temporary storage queue by creating a BAS resource object, TSMDEF.
- **Installing BAS temporary storage model definitions**
  Install the BAS resource object for the TSMODEL resource to make the definition available in the CICS region.

**Defining temporary storage models using BAS**

You define a temporary storage queue by creating a BAS resource object, TSMDEF.

**About this task**

You can define the resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

**Procedure**

1. From the main menu, click **Administration > Basic CICS resource administration > Resource definitions > Temporary storage model definitions**.
2. From the **Temporary storage model definitions** view, click the **Create...** button.
   - To use an existing definition as the basis of the new one, click the check box before clicking the **Create...** button.
   - The **Temporary storage model definitions** create view displays.
3. Complete the relevant fields and click **Yes** to create the definition.
Results
The **Temporary storage model definitions** view displays showing the new definition.

What to do next
To add the definition to a resource group, click the **Add to resource group...** button.

Related tasks
- Viewing temporary storage model definitions
  You can view existing information about your temporary storage model definitions using the CICS Explorer or the Web User Interface.
- Installing BAS temporary storage model definitions
  Install the BAS resource object for the TSMODEL resource to make the definition available in the CICS region.

Installing BAS temporary storage model definitions
Install the BAS resource object for the TSMODEL resource to make the definition available in the CICS region.

Before you begin
You must have created the required resource object in the data repository to install the TSMODEL resource in the CICS region.

About this task
You can install the BAS resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

Procedure
1. From the main menu, click **Administration > Basic CICS resource administration > Resource definitions > Temporary storage model definitions**.
2. Click the Record check box to select a temporary storage model definition and click the **Install...** button.
   Alternatively, click a temporary storage model definition name and click the **Install...** button on the **Temporary storage model definitions** detailed view.

Results
The temporary storage model resource installs in the specified CICS region.

What to do next
After the temporary storage definition installs, you can inquire about the resource by clicking **CICS operations > Temporary storage queue (TSQ) operations views**

Related tasks
- Viewing temporary storage model definitions
  You can view existing information about your temporary storage model definitions using the CICS Explorer or the Web User Interface.
- **Defining temporary storage models using BAS**
You define a temporary storage queue by creating a BAS resource object, TSMDEF.

Typeterm resource definitions
Typeterm definitions are partial terminal definitions that describe a set of common attributes for a group of terminals.

Viewing typeterm definitions
You can view existing information about your typeterm definitions using the CICS Explorer or the Web User Interface.

About this task
The BAS resource object that represents a typeterm definition is called TYPTMDEF. The Typeterm definitions view in the Web User Interface displays information about existing typeterm definitions.

Procedure
1. From the main menu, click Administration.
2. From the Administration views menu, click either Basic CICS resource administration or Fully functional Business Application Services (BAS) administration.
3. Click CICS resource definitions to display the CICS resource definitions view.
4. Click Typeterm definitions.

Results
The Web User Interface displays the list of typeterm definitions.

What to do next
From this view you can also create, update, install, or remove typeterm definitions.

Related tasks
Defining typeterms using BAS
You define a typeterm resource by creating a BAS resource object, TYPTMDEF.

Installing BAS typeterm definitions
Install the BAS resource object for the TYPETERM resource to make the definition available in the CICS region.

Defining typeterms using BAS
You define a typeterm resource by creating a BAS resource object, TYPTMDEF.

About this task
You can define the resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > Typeterm definitions.
2. From the Typeterm definitions view, click the Create... button.
   To use an existing definition as the basis of the new one, click the check box before clicking the Create... button.
   The Typeterm definitions create view displays.
3. Complete the relevant fields and click Yes to create the definition.
Results
The Typeterm definitions view displays showing the new definition.

What to do next
To add the definition to a resource group, click the Add to resource group... button.

Related tasks
Viewing typeterm definitions
You can view existing information about your typeterm definitions using the CICS Explorer or the Web User Interface.

Installing BAS typeterm definitions
Install the BAS resource object for the TYPETERM resource to make the definition available in the CICS region.

Installing BAS typeterm definitions
Install the BAS resource object for the TYPETERM resource to make the definition available in the CICS region.

Before you begin
You must have created the required resource object in the data repository to install the TYPETERM resource in the CICS region.

About this task
You can install the BAS resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > Typeterm definitions.
2. Click the Record check box to select a typeterm definition and click the Install... button. Alternatively, click a typeterm definition name and click the Install... button on the Typeterm definitions detailed view.

Results
The TYPETERM resource installs in the specified CICS region.

What to do next
After the resource installs successfully, you can inquire on the resource by clicking CICS operations > Terminal operations views

Related tasks
Viewing typeterm definitions
You can view existing information about your typeterm definitions using the CICS Explorer or the Web User Interface.

Defining typeterms using BAS
You define a typeterm resource by creating a BAS resource object, TYPTMDEF.

**URIMAP resource definitions**

A URIMAP resource definition matches the URIs of HTTP or web service requests.

**Viewing URI mapping definitions**

You can view information about your existing URIMAP resource definitions using the CICS Explorer or the Web User Interface.

**About this task**

The BAS resource object that represents a URIMAP resource definition is called URIMPDEF. The URI mapping definitions view in the Web User Interface displays information about existing typeterm definitions.

**Procedure**

1. From the main menu, click **Administration views**.
2. From the **Administration views menu**, click either **Basic CICS resource administration views** or **Fully functional Business Application Services (BAS) administration views**.
3. Click **CICS resource definitions** to display the **CICS resource definitions** view.
4. Click **URI mapping definitions**.

**Results**

The Web User Interface displays the list of URIMAP definitions.

**What to do next**

From this view you can also create, update, install, or remove URIMAP definitions.

**Related tasks**

- Defining URIMAP definitions using BAS
  You define a URIMAP resource by creating a BAS resource object, URIMPDEF.
- Installing BAS URI mapping definitions
  Install the BAS resource object for the URIMAP resource to make the definition available in the CICS region.

**Defining URIMAP definitions using BAS**

You define a URIMAP resource by creating a BAS resource object, URIMPDEF.

**About this task**

You can define the resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

**Procedure**

1. From the main menu, click **Administration > Basic CICS resource administration > Resource definitions > URI mapping definitions**.
2. From the **URI mapping definitions** view, click the **Create...** button.
   - To use an existing definition as the basis of the new one, click the check box before clicking the **Create...** button.
   - The **URI mapping definitions** create view is displayed.
3. Complete the relevant fields and click **Yes** to create the definition.
Results
The URI mapping definitions view displays showing the new definition.

What to do next
To add the definition to a resource group, click the Add to resource group... button.

Related tasks
Viewing URI mapping definitions
You can view information about your existing URIMAP resource definitions using the CICS Explorer or the Web User Interface.

Installing BAS URI mapping definitions
Install the BAS resource object for the URIMAP resource to make the definition available in the CICS region.

Installing BAS URI mapping definitions
Install the BAS resource object for the URIMAP resource to make the definition available in the CICS region.

Before you begin
You must have created the required resource object in the data repository to install the URIMAP resource in the CICS region.

About this task
You can install the BAS resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > URI mapping definitions.
2. Click the Record check box to select a URI map definition and click the Install... button. Alternatively, click a URI map definition name and click the Install... button on the URI mapping definitions detailed view.

Results
The URIMAP resource installs in the specified CICS region.

Related tasks
Viewing URI mapping definitions
You can view information about your existing URIMAP resource definitions using the CICS Explorer or the Web User Interface.

Defining URIMAP definitions using BAS
You define a URIMAP resource by creating a BAS resource object, URIMPDEF.

### Web service resource definitions

A web service resource definition defines aspects of the runtime environment for a CICS application program deployed as a web service, where mapping between application data structure and SOAP messages has been generated using the CICS web services assistant.

### Viewing web service definitions

You can view information about your existing WEBSERVICE resource definitions using the CICS Explorer or the Web User Interface.

#### About this task

The BAS resource object that represents a WEBSERVICE resource definition is called WEBSVDEF. The **Web service definitions** view in the Web User Interface displays information about existing web service definitions.

#### Procedure

1. From the main menu, click **Administration views**.
2. From the **Administration views menu**, click either **Basic CICS resource administration views** or **Fully functional Business Application Services (BAS) administration views**.
3. Click **CICS resource definitions** to display the **CICS resource definitions** view.
4. Click **Web service definitions**.

#### Results

The Web User Interface displays the list of WEBSERVICE definitions.

#### What to do next

From this view you can also create, update, install, or remove WEBSERVICE definitions.

#### Related tasks

- **Defining web service definitions using BAS**
  
  You define a URIMAP resource by creating a BAS resource object, WEBSVDEF.

- **Installing BAS web service definitions**
  
  Install the BAS resource object for the WEBSERVICE resource to make the definition available in the CICS region.

### Defining web service definitions using BAS

You define a URIMAP resource by creating a BAS resource object, WEBSVDEF.

#### About this task

You can define the resource object using the CICS Explorer or the Web User Interface. This procedure uses the Web User Interface.

#### Procedure

1. From the main menu, click **Administration > Basic CICS resource administration > Resource definitions > Web service definitions**.
2. From the **Web service definitions** view, click the **Create...** button.
   
   To use an existing definition as the basis of the new one, click the check box before clicking the **Create...** button.
   
   The **Web service definitions** create view displays.
3. Complete the relevant fields and click **Yes** to create the definition.
Results
The Web service definitions view displays showing the new definition.

What to do next
To add the definition to a resource group, click the Add to resource group... button.

Related tasks
Viewing web service definitions
You can view information about your existing WEBSERVICE resource definitions using the CICS Explorer or the Web User Interface.

Installing BAS web service definitions
Install the BAS resource object for the WEBSERVICE resource to make the definition available in the CICS region.

Installing BAS web service definitions
Install the BAS resource object for the WEBSERVICE resource to make the definition available in the CICS region.

Before you begin
You must have created the required resource object in the data repository to install the WEBSERVICE resource in the CICS region.

About this task
You can install the BAS resource object using the CICS Explorer or the Web User Interface. These instructions explain the procedure for the Web User Interface.

Procedure
1. From the main menu, click Administration > Basic CICS resource administration > Resource definitions > Web service definitions.
2. Click the Record check box to select a web service definition and click the Install... button.
   Alternatively, click a web service definition name and click the Install... button on the Web service definitions detailed view.

Results
The WEBSERVICE resource installs in the specified CICS region.

Related tasks
Viewing web service definitions
You can view information about your existing WEBSERVICE resource definitions using the CICS Explorer or the Web User Interface.

Defining web service definitions using BAS
You define a URIMAP resource by creating a BAS resource object, WEBSVDEF.
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CICS supplies some documentation that can be considered to be Programming Interfaces, and some documentation that cannot be considered to be a Programming Interface.

Programming Interfaces that allow the customer to write programs to obtain the services of CICS Transaction Server for z/OS, Version 5 Release 4 are included in the following sections of the online product documentation:

- Developing applications
- Developing system programs
- Securing overview
- Developing for external interfaces
- Reference: application development
- Reference: system programming
- Reference: connectivity

Information that is NOT intended to be used as a Programming Interface of CICS Transaction Server for z/OS, Version 5 Release 4, but that might be misconstrued as Programming Interfaces, is included in the following sections of the online product documentation:

- Troubleshooting and support
- Reference: diagnostics

If you access the CICS documentation in manuals in PDF format, Programming Interfaces that allow the customer to write programs to obtain the services of CICS Transaction Server for z/OS, Version 5 Release 4 are included in the following manuals:

- Application Programming Guide and Application Programming Reference
- Business Transaction Services
- Customization Guide
• C++ OO Class Libraries
• Debugging Tools Interfaces Reference
• Distributed Transaction Programming Guide
• External Interfaces Guide
• Front End Programming Interface Guide
• IMS Database Control Guide
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• CICSPlex SM Managing Workloads
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• Problem Determination Guide
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