Note

Before using this information and the product it supports, read the information in Appendix C, “Notices,” on page 25.
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About this guide

This book provides an overview of the environment and planning information required to prepare and install OMEGAMON XE for CICS TG on z/OS.

Intended audience

This publication is for z/OS® system programmers, administrators, and analysts who are responsible for ensuring OMEGAMON XE for CICS TG on z/OS availability whose responsibilities include the following tasks:

- Planning for and overseeing product installation
- Troubleshooting system and performance problems
- Analyzing performance data for problem determination
- Providing historical performance data for trend analysis

Users of this publication need to be familiar with the following topics:

- The z/OS operating system and its associated concepts
- CICS® Transaction Gateway and CICS Transaction Server
- Database administration concepts
- Performance monitoring concepts

IBM Tivoli OMEGAMON terminology

In discussions of OMEGAMON®, you might see or hear these terms:

- IBM® Tivoli® OMEGAMON Classic refers to the original 3270-based products that have evolved since the 1970s. This system is also known as the "Menu system" and the "Common Interface."
- IBM Tivoli OMEGAMON II® is an implementation of the IBM Common User Access (CUA) interface of the late 1980s. This generation of OMEGAMON products collects information from one or more monitored systems and displays it on a single 3270-based, CUA-compliant mainframe screen.
- IBM Tivoli OMEGAMON XE, the Extended Edition, is the current OMEGAMON family of products, used for monitoring most operating systems, subsystems, applications, storage, and networks, through the use of a Java-based graphical interface. This interface also gives you workflow policies to define and run complex automation scenarios and lets you combine data from different agents in a single workspace.
- IBM Tivoli OMEGAMON Dashboard Edition (DE) on z/OS is a package of components that provide an integrated view of your mainframe enterprise and the power to take corrective action when problems threaten system and application availability. The components in the package include OMEGAVIEW and OMEGAVIEW II® for the Enterprise.

Accessibility

Accessibility features help users with a physical disability, such as restricted mobility or limited vision, to use software products successfully. With this product, you can use assistive technologies to hear and navigate the interface. You can also use the keyboard instead of the mouse to operate all features of the graphical user interface.

Tivoli technical training

For Tivoli technical training information, refer to the following IBM Tivoli Education Web site at http://www.ibm.com/software/tivoli/education
Conventions used in this publication
This guide uses several conventions for special terms and actions and operating system-dependent commands and paths.

Typeface conventions
This guide uses the following typeface conventions:

**Bold**
- Lowercase commands and mixed case commands that are otherwise difficult to distinguish from surrounding text
- Interface controls (check boxes, push buttons, radio buttons, spin buttons, fields, folders, icons, list boxes, items inside list boxes, multicolumn lists, containers, menu choices, menu names, tabs, property sheets), labels (such as **Tip:** and **Operating system considerations:**)
- Keywords and parameters in text

*Italic*
- Citations (examples: titles of publications, diskettes, and CDs)
- Words defined in text (example: a nonswitched line is called a *point-to-point line*)
- Emphasis of words (words as words example: "Use the word *that* to introduce a restrictive clause."); letters as letters example: "The LUN address must start with the letter *L.*")
- New terms in text (except in a definition list): a *view* is a frame in a workspace that contains data.
- Variables and values you must provide: ... where *myname* represents...

**Monospace**
- Examples and code examples
- File names, programming keywords, and other elements that are difficult to distinguish from surrounding text
- Message text and prompts addressed to the user
- Text that the user must type
- Values for arguments or command options

Operating system-dependent variables and paths
This publication uses the UNIX® convention for specifying environment variables and for directory notation.

When using the Windows® command line, replace `$variable` with `%variable%` for environment variables and replace each forward slash (`/`) with a backslash (`\`) in directory paths. The names of environment variables are not always the same in Windows and UNIX. For example, `%TEMP%` in Windows is equivalent to `$TMPDIR` in UNIX.

**Note:** If you are using the bash shell on a Windows system, you can use the UNIX conventions.
Chapter 1. Introducing IBM Tivoli OMEGAMON XE for CICS TG on z/OS

IBM Tivoli OMEGAMON XE for CICS TG on z/OS offers a central point of management for CICS TG on z/OS and CICS TG resource adapters deployed within the IBM WebSphere® Application Server on z/OS. It comprehensively gathers the information necessary to detect, correct, and prevent problems within your CICS TG applications. Using the Tivoli Enterprise Portal, you can view the data gathered from the monitoring agent in tables and charts. These tables and charts indicate the status of your managed CICS TG address spaces (that is, instances of the CICS TG daemon), CICS TG connection factories in WebSphere Application Server, and connectivity to CICS Transaction Server.

This information enables you to:

- Collect and analyze reliable, up-to-the-minute data that allows you to make faster, better informed operating decisions
- Manage all CICS TG applications from a single point to identify problems at any time
- Track performance against goals
- Collect CICS TG statistics, which you can use to view thread activity, report CICS TS communication failures, examine resource waits and EXCI (External CICS Interface) pipe usage, and check for excessive transaction rollbacks, among other monitoring activities
- Manage CICS TG active transactions and provide response time analysis
- Monitor CICS TG resource adapters deployed within the WebSphere Application Server.

With OMEGAMON XE for CICS TG on z/OS, systems administrators can set threshold levels and flags to alert them when system conditions reach these thresholds. They can use advanced monitoring facilities that include:

- User-defined and predefined situations based on thresholds to raise different types of alerts
- At-a-glance status of all CICS TG regions
- The capability to monitor multiple CICS TG regions simultaneously from one or more centralized workstations

What is CICS TG on z/OS?

CICS TG is a high-performing, secure, and scalable connector that enables client applications in different runtime environments to access CICS servers. Using standard-based interfaces, CICS TG delivers access to new and existing CICS applications using the following protocols:

- TCP/IP sockets
- Secure Sockets Layer (SSL)

CICS TG provides a gateway to CICS for remote clients and complements IBM WebSphere Application Server on several different platforms. In addition, it is designed to exploit the qualities of service on the z/OS platform, including high availability and workload management.

CICS TG provides a rich set of program interfaces that provide access to CICS COMMAREA, channel and 3270 applications. CICS Transaction Gateway provides APIs for Java™, C, C++, and COBOL. JCA resource adaptors and COM objects are also provided.

CICS TG can operate in either a two-tier or three-tier configuration. Each configuration provides different qualities of service. The term "local mode" refers to the two-tier topology, while "remote mode" refers to the three-tier topology.
In a local mode configuration, the CICS TG runs within the client application. Client applications send requests directly to CICS without using a Gateway daemon.

In a remote mode configuration, the client application and CICS TG are on different machines and the Gateway daemon listens on a specific port for incoming client requests. The Gateway daemon runs as a stand-alone process, handles the management of connections and threads, and forwards client requests to CICS.
Chapter 2. Planning for deployment

Planning for deployment involves determining these factors:

- What kind and how many runtime environments are needed for configuration
- How many and which regions you want OMEGAMON XE for CICS TG on z/OS to monitor
- Locations of the z/OS images where the CICS Transaction Gateway daemons and WebSphere Application Server regions are being monitored
- What short-term and long-term historical data, if any, you want to collect

Overview

OMEGAMON XE for CICS TG on z/OS reports on statistics and monitors the activity of the CICS Transaction Gateway regions on z/OS. The CICS Transaction Gateway product must be version 7.0 or higher to interact with OMEGAMON XE for CICS TG on z/OS.

OMEGAMON XE for CICS TG on z/OS automatically discovers all CICS Transaction Gateway daemons and WebSphere Application Server regions on z/OS. However, you must enter the region names you want to monitor. The region overview workspace includes address space summary information such as total CPU time and total I/O counts.

Configuration options involving multiple z/OS images

There are multiple types of configurations used in setting up your environment. Some basic configurations include:

- Local configuration with a hub or remote Tivoli Enterprise Monitoring Server and the OMEGAMON XE for CICS TG on z/OS agent running on the same z/OS image in the same address space
- Local configuration with a hub or remote Tivoli Enterprise Monitoring Server and the OMEGAMON XE for CICS TG on z/OS agent running on the same z/OS image but in separate address spaces
- Configuration with the hub Tivoli Enterprise Monitoring Server on a distributed system with the OMEGAMON XE for CICS TG on z/OS monitoring one or more CICS TG regions on multiple z/OS images
- Configuration with a high availability hub on OMEGAMON XE for CICS TG on z/OS.

Figure 1 on page 4 shows an overview of a HUB Tivoli Enterprise Monitoring Server, a Tivoli Enterprise Portal Server, and several OMEGAMON XE for CICS TG on z/OS monitoring agents on different z/OS images that are monitoring multiple instances of CICS TG daemons and WebSphere Application Server regions.
Determining how to deploy OMEGAMON XE for CICS TG on z/OS

Some questions that need to be answered before you install OMEGAMON XE for CICS TG on z/OS are:

- What kind of system deployment do you want?
  - Do you want your monitoring servers on z/OS or distributed systems?
  - Does it make sense to have one hub and several remote monitoring servers or a single hub monitoring server?
  - Do you need a backup server?
  - Will your OMEGAMON XE for CICS TG on z/OS daemons run on multiple LPARS and what work flow is expected?
Note: You can potentially have a hub and standby hub on a distributed system with only the OMEGAMON XE for CICS TG on z/OS agent running on the z/OS LPARS without having a Tivoli Enterprise Monitoring Server on z/OS defined.

- Do you want one or more Tivoli Enterprise Monitoring Servers?

Note: All remote local servers must report to a hub server, which can be running on any supported system.


- Where do you want to run your hub?

Many organizations prefer the reliability and availability characteristics of the z/OS system for the monitoring server. For OMEGAMON XE for CICS TG on z/OS, the z/OS system might be a good place for the monitoring server because it is close to the monitoring agent on the z/OS system, which can shorten the communications path.

- What kind and how many runtime environments do you need for your configuration?

See “Runtime environment planning” on page 7.

- Which CICS TG daemon regions do you plan to monitor and on which z/OS images are they located?

- Do you want to collect short-term and long-term historical data? If so, where will you warehouse the historical data?

Planning for Tivoli Data Warehouse and long-term historical data collection is found in these documents:

- IBM Tivoli Monitoring Administrator’s Guide
- IBM Tivoli Monitoring Installation and Setup Guide

- What operating system (Linux®, UNIX-based, or Windows) do you want to use for installation of the Tivoli Enterprise Portal Server?

You can run a mixed environment of Linux, Windows and UNIX-based system components. For example, you can have a desktop client on Linux and a portal server on Windows, or a desktop client on Windows and a portal server on Linux. Base the decision about whether to use a UNIX-based, Linux, or Windows system for the portal server and desktop client on the following conditions:

- The operating systems already in use in the existing environment
- Familiarity and comfort level with the Linux, Windows and UNIX-based operating systems
- Whether you want to bring additional operating systems into the current configuration of your site

See the IBM Tivoli Monitoring Administrator’s Guide for more information.

- What operating system (z/OS, Windows, Linux, or UNIX-based) do you want to use for installation of the hub monitoring server?

If you put your hub monitoring server on the z/OS system, you can also configure it in the same address space as the monitoring agent.

- How many runtime environments (RTEs) do you need?

You can use one RTE for each z/OS image where you want to run OMEGAMON XE for CICS TG on z/OS or multiple RTEs on the same image. If you have one RTE per agent and a separate RTE for the Tivoli Enterprise Monitoring Server, you might have a DASD resource impact and can increase the complexity of deployment. In this situation, you do not have a performance impact.

If you choose to create a hub on z/OS system, then the first RTE that you create must be the RTE that will contain the hub. If you choose to create a hub on the distributed platform, then the first RTE you create on z/OS will not contain a hub.

Additional information to help plan your deployment can be found in the IBM Tivoli Monitoring Installation and Setup Guide.
Understanding product packaging

If you are installing OMEGAMON XE for CICS TG on z/OS, you will find familiar IBM packaging types (such as Passport Advantage®), installation tools (such as SMP/E or InstallShield), and installation documentation, including a Program Directory. You will also find a z/OS-based Configuration Tool that streamlines the transition between the SMP/E installation and a running system. This tool works with SMP/E to save files that will be used in later steps to configure the products.

z/OS maintenance is delivered electronically or on tape in the form of program temporary fixes (PTFs) that are installed using SMP/E. See Appendix B, “Support information,” on page 23 for more information. If you receive your product tape through the custom-built product delivery offering (CBPDO) process, maintenance is included on the tape for you to install. If you receive your product tape as part of a ServerPac or SystemPac®, then product maintenance is preinstalled.

You can contact your IBM representative for specific information about available program services. You can find information in the IBM Software Support Handbook at the following Web site:
http://techsupport.services.ibm.com/guides/handbook.html

Each OMEGAMON System z® product provides a program directory that describes the z/OS installation steps required to move the product code from the distribution media to your hard disk drive, whether it is distributed on tape or electronically. See the IBM Tivoli OMEGAMON XE and Tivoli Management Services on z/OS: Common Planning and Configuration Guide for more information for full details.

Software and hardware prerequisites

This section describes prerequisites needed to install OMEGAMON XE for CICS TG on z/OS support.

Supported software

OMEGAMON XE for CICS TG on z/OS V4.2.0 operates in the following CICS Transaction Gateway, CICS Transaction Server, WebSphere Application Server, and z/OS environments:

- CICS TG V7.0 or higher
  
  **Note:** CICS TG V7.1 or higher is required for transaction monitoring.
- CICS Transaction Servers V3.1, V3.2, and V4.1
- All supported releases of z/OS, V1.9 or higher
  
  **Note:** This product was originally developed and tested with z/OS 1.8 systems and higher. However, z/OS 1.8 End of Support (EOS) occurs 30 September 2009, which will raise support issues if this product encounters a problem running on that level.
- WebSphere Application Server V6.1 or higher

See the IBM Tivoli OMEGAMON XE and Tivoli Management Services on z/OS: Common Planning and Configuration Guide for full details.

Supported hardware

Most of the hardware required to run OMEGAMON XE for CICS TG on z/OS is determined by operating system considerations. For most hardware prerequisites consult the OMEGAMON documentation.

OMEGAMON XE for CICS TG on z/OS can be deployed on any z/OS system that is capable of running z/OS V1.9 or higher. You must also ensure that you have adequate disk space to accommodate the products that you are installing.
OMEGAMON XE for CICS TG on z/OS can be configured in an existing or new runtime environment (RTE). The Configuration Tool (ICAT) V3.1.0 provides assistance in configuring OMEGAMON XE for CICS TG on z/OS. See Chapter 3, “Configuring OMEGAMON XE for CICS TG on z/OS,” on page 9 for more configuration information.

**Configuration Tool planning questions**

OMEGAMON XE for CICS TG on z/OS uses the IBM Configuration Assistance Tool, now known as the Configuration Tool. You must first answer the following questions:

- Are you running a product mix of
  - Mainframe-only products?
  - Distributed agents?
  - All products on all systems?
- Do you have firewalls between systems?
- Are your networks connected using TCP/IP and SNA?

You need to figure out what you have in your environment and show your current configuration. Look at your product mix to decide on a new architecture and then plan it.

Choose good naming conventions that will allow the use of z/OS static system variables. You must decide on how many different product mixes you require that will be the basis for the models. Determine how many environments you are going to have such as test, development, and production.

For further information on Configuration Tool information, see Chapter 3, “Configuring OMEGAMON XE for CICS TG on z/OS,” on page 9.

**Runtime environment planning**

A runtime environment (RTE) is a logical grouping of runtime libraries that are referenced by tasks as they run on a z/OS image. You must use the Configuration Tool to create runtime environments.

OMEGAMON XE for CICS TG on z/OS can work with other OMEGAMON XE products that are configured in the same Runtime Environment (RTE). OMEGAMON XE for CICS TG on z/OS can also be configured in its own RTE.

You must define a runtime environment on each z/OS image where the CICS Transaction Gateway daemons that will be monitored by OMEGAMON XE for CICS TG on z/OS is running.

**Upgrading to the new release**

OMEGAMON XE V4.2.0 monitoring agents require Tivoli Management Services V6.2.1 or higher. If you are not currently running at the required level, you must, at a minimum, upgrade the Tivoli Enterprise Portal desktop client, the Tivoli Enterprise Portal Server, and the Hub Tivoli Enterprise Monitoring Server to V6.2.1 before you install your first OMEGAMON XE V4.2.0 monitoring agent. You upgrade your monitoring agents and any Tivoli Enterprise Monitoring Server the agents to which the agents report. In addition, upgrade the Tivoli Data Warehouse components at the same time you upgrade the Tivoli Enterprise Portal Server.

*IBM Tivoli OMEGAMON XE and Tivoli Management Services on z/OS: Upgrade Guide* provides instructions for performing an upgrade (staged or all-at-once), discusses the basic upgrade requirements and the effects of running a mixed environment for globalization and data presentation, and lists the required sequence of steps for performing an upgrade along the following paths:
- Upgrading from IBM Tivoli Management Services V6.1.0 (or later) and OMEGAMON XE V4.1.0.
Chapter 3. Configuring OMEGAMON XE for CICS TG on z/OS

This chapter provides information on configuring OMEGAMON XE for CICS TG on z/OS using the Configuration Tool 3.1.0.

It is assumed that you have already installed and set up the Configuration Tool on your z/OS system. Refer to the IBM Tivoli OMEGAMON XE and Tivoli Management Services on z/OS: Common Planning and Configuration Guide if you require additional information to complete the configuration.

To configure the desired component, enter the selection number on the command line. Configure the components in the order they are listed.

Features of the Configuration Tool

The Configuration Tool is used to configure OMEGAMON XE for CICS TG on z/OS. The Configuration Tool provides defaults whenever possible. The tool operates in two modes:

- Interactive Mode consists of an ISPF panel-driven facility that assists you in specifying parameters and tailoring jobs for configuring new products and new versions of products.
- A Batch Facility creates a single batch job that you can use to build, configure, and load a runtime environment. This single job performs all of the same runtime environment processing as the interactive Configuration Tool. Batch mode is a simple and useful way of replicating runtime environments to other z/OS systems.

Detailed information about using the Configuration Tool is found in the online help for the tool.

Abbreviations used by the Configuration Tool and SAPI

The following abbreviations are used in the Configuration Tool and the guides that discuss configuration.

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>&amp;midlev</td>
<td>The mid-level qualifier. Defaults to the RTE name. Used in conjunction with &amp;rhilev</td>
</tr>
<tr>
<td>&amp;rhilev</td>
<td>Runtime high-level qualifier (non-VSAM)</td>
</tr>
<tr>
<td>&amp;rvhilev</td>
<td>Runtime high-level qualifier (VSAM)</td>
</tr>
<tr>
<td>&amp;shilev</td>
<td>Installation high-level qualifier of the INST* libraries</td>
</tr>
<tr>
<td>&amp;thilev</td>
<td>SMP/E target high-level qualifier</td>
</tr>
</tbody>
</table>

Starting the Configuration Tool

Follow these steps to start and access the OMEGAMON XE for CICS TG on z/OS menu in the Configuration Tool:

1. Log on to a TSO session.
2. Invoke ISPF.
3. Go to a TSO command line. (In most cases, this is option 6 on the ISPF Primary Option Menu.)
4. Enter the following command: EX 'shilev.INSTLIB' where shilev is the high-level qualifier you specified for the Configuration Tool.

Figure 2. Main Menu of the Configuration Tool
If this is the first time that you have set up a runtime environment, you need to set up your work environment before configuring your products.

Refer to the *IBM Tivoli OMEGAMON XE and Tivoli Management Services on z/OS: Common Planning and Configuration Guide* for more information.

**Configuration Tool menus for OMEGAMON XE for CICS TG on z/OS**

Version 4 release 2 of OMEGAMON XE for CICS TG on z/OS requires additional specific configuration steps to make the product operational.

**Product selection menus**

**Product selection menu**

```
--- PRODUCT SELECTION MENU ---
COMMAND ==>  
Actions: S Select product
IBM Tivoli OMEGAMON XE for CICS TG on z/OS V4.2.0
F1=Help  F3=Back  F5=Refresh  F7=Up  F8=Down
```

*Figure 3. Product selection menu*

**Runtime Environments (RTEs) menu**
Press **C** to configure the agent proceed to the next step.

**Product component selection menu**

---

**Runtime Environments (RTEs) menu**

Press **C** to configure the agent proceed to the next step.

**Product component selection menu**

---

If you plan to configure a Tivoli Enterprise Monitoring Server in the runtime environment in addition to the OMEGAMON XE for CICS TG on z/OS agent, you must select option **1** and follow the configuration instructions, otherwise, select option **2** and proceed with the OMEGAMON XE for CICS TG on z/OS agent configuration.

Perform the configuration steps in the order as indicated on the agent configuration menu in Figure 6 on page 12.

**Note:** This configuration assumes that there is no configured Tivoli Enterprise Monitoring Server in this runtime environment.

**Configure OMEGAMON XE for CICS TG on z/OS**
Press 1 to register to the local Tivoli Enterprise Monitoring Server to which OMEGAMON XE for CICS TG on z/OS will be configured to.

When you return to the main configuration panel, press 2 to proceed to Specify configuration parameters.

Specify configuration parameters

---CONFIGURE IBM TIVOLI OMEGAMON XE FOR CICS TG on Z/OS / RTE:rtename ---

OPTION ===>

COMPONENT TITLE
Perform the appropriate configuration steps in order: Date Time

1 Configuration information (What's New) <== Revised

1 Register with local TEMS (required if the Agent will connect to the TEMS in this RTE.)

2 Specify configuration parameters

Agent address space configuration:
3 Specify Agent address space parameters
4 Create runtime members
5 Configure persistent datastore (in Agent)

6 Complete the configuration

Note: Press F5=Advanced to configure Agent to run in the TEMS address space.
F1=Help F3=Back F5=Advanced

Figure 6. Configure OMEGAMON XE for CICS TG on z/OS menu

Press 1 to register to the local Tivoli Enterprise Monitoring Server to which OMEGAMON XE for CICS TG on z/OS will be configured to.

When you return to the main configuration panel, press 2 to proceed to Specify configuration parameters.

Specify configuration parameters

--------- Specify configuration parameters / RTE:rtename ----------
OPTION ===>

CICS TG DLL DSN ==>SYS1.SCTGDLL

Specify CICS Transaction Gateway information for monitoring and statistics collection:

Actions: A Add (after), U Update, D Delete

<table>
<thead>
<tr>
<th>Action</th>
<th>Job name</th>
<th>Statistics Port number</th>
<th>Trace Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>_CTGJOB1</td>
<td>2980</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>_CTGJOB2</td>
<td>12345</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>_WASJOBN</td>
<td>00000</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

Enter=Next F1=Help F3=Back F5=Adv F7=Up F8=Down

Figure 7. Specify configuration parameters

Note: For more information on any Configuration Tool panel, press F1.

Specify advanced configuration parameters
For the Agent XMIT number, you can limit the amount CICS Transaction Gateways by OMEGAMON XE. Do this by adding the following DD statement to the CICS TG agent JCL (default is CANSGW) and to each CICS TG batch daemon. If you are running in local mode, add the following to the WebSphere Application Server JCL:

```
//RKGWXM
DD DUMMY
```

where \(nn\) is your specified value, 00 through 15. The default is 00.

The information entered from the Specify Advanced Configuration Parameters panel is used to build the Statistics API configuration member: KGWSAPIP.

For more information on using the advanced features of the Configuration Tool see IBM Tivoli OMEGAMON XE and Tivoli Management Services on z/OS: Common Planning and Configuration Guide.

### Completing the configuration

The following sections describe the additional steps you perform manually outside of the Configuration Tool to complete the configuration for the OMEGAMON XE for CICS TG on z/OS monitoring agent.

#### Copy procedures to PROCLIB

The Configuration tool created started task procedures in RKANSAMU which you must copy to your procedure library. Update your started task library as follows:

1. If you have configured an agent address space, copy the agent started task (CANSGW) from RKANSAMU to PROCLIB.
2. If you have registered this agent with the local Tivoli Enterprise Monitoring Server, application-specific DDNAMEs were added to the Tivoli Enterprise Monitoring Server started task (CANSDSST). Update your started task library to refresh the CANSDSST member from RKANSAMU to PROCLIB.

#### Copying VTAM definitions to VTAMLST

The Configuration Tool creates VTAM® definitions in the RKANSAMU library. Copy the VTAM major node (default CTDGWN) from the RKANSAMU library to your VTAMLST. You can also use the sample JCL to copy the system procedure or procedures and the VTAM major node member from the RKANSAMU library to the system libraries. The sample JCL can be generated from the RTE Utility option of the Configuration Tool.

Use these steps to copy VTAM definitions:

1. From the Runtime Environments (RTEs) panel, type Z next to the name of the RTE you have configured for your system and press Enter.
2. From the RTE Utility Menu, select the Generate sample system procedure copy JCL option, then press Enter. The JCL that creates the sample system procedure copy (CB#Pxxxx) job is displayed.
3. From the RTE Utility Menu, select Generate sample system VTAMLST copy JCL option, then press Enter. The JCL that creates the sample system VTAMLST copy (CB#Nxxxx) job is displayed.

   **Note:** Step 3 is only applicable if System Variables mode is not enabled.

4. Submit the generated job or jobs, if applicable.

   To add application support, refer to the *IBM Tivoli Monitoring Installation and Setup Guide*.

### Vary VTAM major node active

Vary the VTAM major node (CTDGWN) in VTAMLST active:

```
V NET,ACT,ID=CTDGWN
```

### APF authorize libraries

For more information on APF authorization, consult with the systems programmer responsible for this task at your site or refer to the documentation for the appropriate release of your z/OS system.

To APF authorize the libraries, follow these steps:

1. You must ensure that all of the libraries in a concatenation are APF authorized, or the z/OS system does not reflect the authorization status of modules loaded from the concatenated data sets.

2. If you define a runtime environment that uses the SMP libraries, put the following libraries into the APF list for your system:
   - `&hilev.SCTGDLL`
   - `&rhilev.RKANMOD`
   - `&rhilev.RKANMODU`
   - `&thilev.TKANMOD`
   - `&thilev.TKANMODL`
   - `&thilev.TKANMODP`

   Otherwise, put the following libraries into the APF list for your system:
   - `&hilev.SCTGDLL`
   - `&rhilev.RKANMOD`
   - `&rhilev.RKANMODU`
   - `&rhilev.RKANMODL`
   - `&rhilev.RKANMODP`

Any libraries concatenated in the STEPLIB DDNAME of the CANSGW started task must be APF-authorized.

If your security system restricts data set access, your security administrator must give the OMEGAMON XE agent started task (default CANSGW) read access to the `&rhilev` or `&thilev` high-level qualifier.

### Postinstallation configuration for transaction monitoring support

Depending on whether you are monitoring transaction through a Gateway daemon or through a WebSphere Application Server with OMEGAMON XE for CICS TG on z/OS, you must take specific steps to complete the configuration after installation. Use the following steps below to complete the post-installation configuration.

When monitoring transactions through a Gateway daemon:

1. Add the TxnMonitor to the list of registered request exits. You can add the TxnMonitor using the CICS TG Configuration Tool or by directly editing the configuration file (ctg.ini) in a text editor.

   Use the following text to successfully add the TxnMonitor to list of registered exits:

   ```text
   14 IBM Tivoli OMEGAMON XE for CICS TG on z/OS: Planning and Configuration Guide
   ```
2. Update the CLASSPATH environment variable and STEPLIB concatenation. If you are running CICS TG in batch mode, edit the STDENV file. If you are starting CICS TG from UNIX System Services (USS), edit the ctgenvvar script.
   Edit either to include the following:
   CLASSPATH=existing_statements:install_path/bin/IBM/kgw_monitor.jar
   STEPLIB=existing_statements:&thilev.TKANMODP

   For example:
   CLASSPATH=/usr/lpp/kgw/v420/bin/IBM/kgw_monitor.jar
   STEPLIB=DFH.V3R2M0.CICS.SDFHEXCL:&thilev.TKANMODP

   Note: If your runtime environment is running from SMP target libraries, specify "&thilev.TKANMODP". Otherwise specify the runtime library, "&rhilev.RKANMODP".

3. Set Java Virtual Machine (JVM) Properties to configure the Monitoring Exit. This step is optional. If you want to configure the initial trace level, internal queue size, queue depth trigger, or queue monitor sleep time for startup, then set the JVM properties.
   Edit the CTGSTART_OPTS statement in the either the STDENV file (if running CICS TG in batch mode) or the ctgenvvar script (if starting CICS TG from USS) to include the following configurations:
   To set the internal queue size (number of records), input
   To set the queue depth trigger, input -j-Dcom.ibm.omegamon.kgw.rmexit.queuedepth=queue_depth.
   To set the queue monitor sleep in milliseconds, input
   -j-Dcom.ibm.omegamon.kgw.rmexit.queuesleep=queue_sleep.
   For example:
   CTGSTART_OPTS=-j-Dcom.ibm.omegamon.kgw.rmexit.trace=4 -j-Dcom.ibm.omegamon.kgw.rmexit.queuesleep=300

When monitoring transactions through a WebSphere Application Server:
1. Update the Class path used by the CICS TG resource adapter. In the administrative console, click Resource Adapters, and then click the CICS TG resource adapter that was deployed.
   Under General Properties for the configuration of the resource adapter, add the following statement for the Class path:
   install_path/bin/IBM/kgw_monitor.jar

2. Give WebSphere access to the KGWMON00 module. The WebSphere server that uses the CICS TG resource adapter needs to load the module KGWMON00 from TKANMODP library.
   To do this, add the KANMODP library to either the system link concatenation or to the STEBLIB concatenation of the WebSphere Application Server servant region.

3. Add the TxnMonitor to each CICS TG connection factory you want to monitor.
   a. Select Resource Adapters > J2C connection factories > connection_factory_name > Custom properties.
      b. Modify the RequestExits property to include:
         Value=com.ibm.omegamon.kgw.rmexit.TxnMonitor

4. Set Java Virtual Machine (JVM) Properties to configure the Monitoring Exit. This step is optional. If you want to configure the initial trace level, internal queue size, queue depth trigger, or queue monitor sleep time for startup, then set the JVM properties.
   Set the JVM properties by defining Generic JVM properties in the administration console of the particular server to include the following configurations:
   To set the internal queue size (number of records), input
   To set the queue depth trigger, input -j-Dcom.ibm.omegamon.kgw.rmexit.queuedepth=queue_depth.
To set the queue monitor sleep in milliseconds, input
- jDcom.ibm.omegamon.kgw.rmexit.queuesleep=queue_sleep

**Add application support by using Manage Tivoli Monitoring Services**

Before you can view data being collected by OMEGAMON XE for CICS TG on z/OS, you must install and enable application support for the agent.

Application support files provide agent-specific information for workspaces, online helps, situations, templates, and other relevant data.

To add application support, refer to the *IBM Tivoli Monitoring Installation and Setup Guide*.

**Verifying your configuration**

Now that you have completed the configuration you can verify that it has been successful. Initially, you can check that the logs generated from the jobs are clean and contain no error messages. You can also check for messages to ensure your agent is correctly monitoring your CICS TG jobs.

The verification involves the following items:

- Start the Tivoli Enterprise Monitoring Server that your agent will connect to.
  
  In the Tivoli Enterprise Monitoring Server that the agent is connecting to, validate that the agent is online by looking for the following message in the monitoring server RKLVLOG:
  
  `Remote node <CICSTG:sysid:GWIRA> is ON-LINE`

- Start the OMEGAMON XE for CICS TG on z/OS monitoring agent started task using the following z/OS command:
  
  `/S CANSW`

  Successful startup will be indicated by the messages found in the RKLVLOG.

  When the near-term history Persistent Datastore is active, the following messages will be issued:

  `KPDEIMN: Persistent Datastore initialization completed successfully`

  The following messages indicate that the OMEGAMON XE attach controller has successfully started:

  - **KGW9000I**: ATC INITIALIZATION HAS STARTED
  - **KGW9501I**: ATC HAS LOADED MODULE: KGWATT0A
  - **KGW9502I**: ATC HAS LOADED MODULE: KGWATI0A
  - **KGW9503I**: ATC HAS LOADED MODULE: KGWTDA0A
  - **KGW9009I**: ATC INITIALIZATION HAS ENDED

  This message indicates that the GWIRA agent thread is registered:

  `KGW9002I: IRA REGISTRATION THREAD IS ACTIVE`

  When the GWIRA agent is starting its heartbeat and attempting to connect to the Tivoli Enterprise Monitoring Server, you will see the following messages:

  - "ctira_insert_log") KRAIRA000, Starting Enterprise situation
  - "ctira_insert_log") KRAREG000, Connecting to CMS sysid:CMS
  - "ConnectToProxy") Successfully connected to CMS monitoring_server_name:CMS using

  The following message indicates the historical situations are starting. However, you will only see these messages if you have configured historical collection for this agent.

  `ctira_insert_log") KRAIRA000, Starting UADVISOR_

  You will see one of each of the following messages in the RKGWSLOG for each of the Gateway daemons that your are monitoring:

  - `KGWSP1091 session name=CTG001 Port=02981 Sysname=SYSID
  job name=CTG001 Token=x"308D94A8" Status=Active`

  - `KGWSP1091 session name=CTG002 Port=02984 Sysname=SYSID
  job name=CTG002 Token=x"307CA4A8" Status=Active`

- Start your CICS TG and/or WebSphere Application Server regions.
If you have enabled transaction monitoring support for CICS TG jobs, check the log of each CICS TG job for the following message:

`KGWRM1000I: OMEGAMON XE for CICS TG monitoring exit initialization complete.`

If you have enabled statistical collection support, check the log of your agent job for the following message:

`KGWSP109I Session Name=ssssssss PortNumber=pppp Sysname=yyyy Jobname=jjjjjjjj Token=x"tttttttt" Status=Active`

where `ssssssss` is the name of your CICS TG and `pppp` is the statistics port number the connection to the CICS TG will be made to.

If you have enabled monitoring support for CICS TG running locally within WebSphere Application Server, the monitoring exit will not register until a suitable workload is sent through the configured connection factory. When this occurs, check the log of each job for the following message:

`KGWRM1000I: OMEGAMON XE for CICS TG monitoring exit initialization complete.`

Once you verify your configuration, verify your runtime environment.

From the Runtime Environment menu, select the RTE you want to verify by placing a Z in the Action column to the left of the RTE.

From the RTE Utility Menu/ RTE: `rte_name` menu, specify 11. Verify configuration and generate parameter map.

From the Verify Configuration and Generate Parameter Map/ RTE: `rte_name`, select option 1. Verify the batch configuration and submit the generated job. Review the job output.

After you have confirmed the jobs have started successfully, check that the monitored systems can be viewed within the Tivoli Enterprise Portal.

- Start the Tivoli Enterprise Portal Server.
- Start the Tivoli Enterprise Portal.

Ensure that when Tivoli Enterprise Portal opens, you see the list of CICS TG regions that are associated with the agent in the Navigator pane at the top left side of the workspace.
Appendix A. Documentation library

This section lists publications in the OMEGAMON XE for CICS TG on z/OS library and related documents. The section also describes how to access Tivoli publications online and how to order Tivoli publications.

OMEGAMON XE for CICS TG on z/OS library

The following documents are available in the product library:

- **IBM Tivoli OMEGAMON XE for CICS TG on z/OS: Planning and Configuration Guide, SC27-2815-00**
  Provides planning information for installing OMEGAMON XE for CICS TG on z/OS and information about the OMEGAMON XE zSeries® products.

- **IBM Tivoli OMEGAMON XE for CICS TG on z/OS: Troubleshooting Guide, GC27-2816-00**
  Provides problem determination and resolution information for the issues most commonly encountered with OMEGAMON XE for CICS TG on z/OS and IBM Tivoli Monitoring.

- **IBM Tivoli OMEGAMON XE for CICS TG on z/OS: User's Guide, SC27-2814-00**
  Introduces the features, workspaces, attributes, and predefined situations for the OMEGAMON XE for CICS TG on z/OS product and supplements the user assistance provided with this product. This document is written for system operators.

OMEGAMON XE for CICS on z/OS library

The following documents are available in the OMEGAMON XE for CICS on z/OS product library:

- **IBM Tivoli OMEGAMON XE for CICS on z/OS: Planning and Configuration Guide, SC27-2380-00**
  Documents the installation and configuration tasks necessary for the implementation of OMEGAMON XE for CICS on z/OS. This document is written for system administrators and others who are responsible for installing and configuring OMEGAMON XE for CICS on z/OS and OMEGAMON II for CICS.

- **IBM Tivoli OMEGAMON XE for CICS on z/OS: User's Guide, SC27-2379-00**
  Introduces the features, workspaces, attributes, and predefined situations for the OMEGAMON XE for CICS on z/OS product and supplements the user assistance provided with this product. This document is written for system operators.

- **IBM Tivoli OMEGAMON XE for CICS on z/OS: Troubleshooting Guide, GC27-2381-00**
  Provides information to help you troubleshoot your OMEGAMON XE for CICS on z/OS installation. The publication also lists the messages related to this product.

- **IBM Tivoli OMEGAMON XE for CICS on z/OS: Interface Reference, SC32-1815**
  Provides the definition of the workspaces, attributes, and predefined situations for the OMEGAMON XE for CICS on z/OS product.

Shared OMEGAMON XE library

The following documents are available in the OMEGAMON XE for CICS on z/OS product library:

- **IBM Tivoli OMEGAMON XE Monitoring Agents on z/OS: Quick Start Guide, GI11-8918-01**
  Summarizes the installation and setup of an OMEGAMON XE monitoring agent on z/OS.

- **IBM Tivoli OMEGAMON XE and Tivoli Management Services on z/OS: Common Planning and Configuration Guide, SC23-9734-01**
  Gives instructions for planning and configuration tasks common to the components of Tivoli Management Services on z/OS and the OMEGAMON XE monitoring agents on z/OS.

- **IBM Tivoli OMEGAMON XE and Tivoli Management Services on z/OS: Upgrade Guide, SC27-2500-00**
  Gives instructions for complete and staged upgrades to V4.2.0 of the OMEGAMON XE products.
• **IBM Tivoli and IBM Tivoli Management Services on z/OS: End-to-End Response Time Feature Reference, SC27-2303-01**
  Provides instructions and reference information for the End-to-End Response Time Feature, which supplies response time data to several OMEGAMON XE products.

• **IBM Tivoli OMEGAMON XE and Tivoli Management Services on z/OS: Reports for Tivoli Common Reporting, SC27-2304-03**
  Explains how to use the Tivoli Common workspacing tool to create workspaces from data displayed in the Tivoli Enterprise Portal and stored in the Tivoli Data Warehouse database.

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**IBM Tivoli Monitoring publications**

The following publications provide information about IBM Tivoli Monitoring and about the commonly shared components of Tivoli Management Services:

• **Quick Start Guide, GI11-8058**
  Introduces the components of IBM Tivoli Monitoring.

• **Installation and Setup Guide, GC32-9407**
  Provides instructions for installing and configuring IBM Tivoli Monitoring components on Windows, Linux, and UNIX systems.

• **Program Directory for IBM Tivoli Management Services on z/OS, GI11-4105**
  Gives instructions for the SMP/E installation of the Tivoli Management Services components on z/OS.

• **Configuring the Tivoli Enterprise Monitoring Server on z/OS, SC32-9463**
  Gives detailed instructions for using the Configuration Tool to configure Tivoli Enterprise Monitoring Server on z/OS systems. Includes scenarios for using batch mode to replicate monitoring environments across the z/OS enterprise. Also provides instructions for setting up security and for adding application support to a Tivoli Enterprise Monitoring Server on z/OS.

• **Administrator's Guide, SC32-9408**
  Describes the support tasks and functions required for the Tivoli Enterprise Portal Server and clients, including Tivoli Enterprise Portal user administration.

• **High-Availability Guide for Distributed Systems, SC23-9768**
  Gives instructions for several methods of ensuring the availability of the IBM Tivoli Monitoring components.

• **Tivoli Enterprise Portal online help**
  Provides context-sensitive reference information about all features and customization options of the Tivoli Enterprise Portal. Also gives instructions for using and administering the Tivoli Enterprise Portal.

  Complements the Tivoli Enterprise Portal online help. The guide provides hands-on lessons and detailed instructions for all Tivoli Enterprise Portal features.

• **Command Reference, SC32-6045**
  Provides detailed syntax and parameter information, as well as examples, for the commands you can use in IBM Tivoli Monitoring.
• **Troubleshooting Guide, GC32-9458**
  Provides information to help you troubleshoot problems with the software.

• **Messages, SC23-7969**
  Lists and explains messages generated by all IBM Tivoli Monitoring components and by z/OS-based Tivoli Management Services components (such as Tivoli Enterprise Monitoring Server on z/OS and TMS:Engine).

• **IBM Tivoli Universal Agent User’s Guide, SC32-9459**
  Introduces you to the IBM Tivoli Universal Agent, an agent of IBM Tivoli Monitoring. The IBM Tivoli Universal Agent enables you to use the monitoring and automation capabilities of IBM Tivoli Monitoring to monitor any type of data you collect.

• **IBM Tivoli Universal Agent API and Command Programming Reference Guide, SC32-9461**
  Explains the procedures for implementing the IBM Tivoli Universal Agent APIs and provides descriptions, syntax, and return status codes for the API calls and command-line interface commands.

• **Agent Builder User’s Guide, SC32-1921**
  Explains how to use the Agent Builder for creating monitoring agents and their installation packages, and for adding functions to existing agents.

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**IBM CICS publications information centers**

Further information about CICS Transaction Gateway and CICS Transaction Servers can be found in the information center for each product.

- **CICS Transaction Gateway Information Center** is located at: [http://publib.boulder.ibm.com/infocenter/cicstg/v7r0m0/index.jsp](http://publib.boulder.ibm.com/infocenter/cicstg/v7r0m0/index.jsp)
- **CICS Transaction Server Information Center** is located at: [http://publib.boulder.ibm.com/infocenter/cicsts/v3r1/index.jsp](http://publib.boulder.ibm.com/infocenter/cicsts/v3r1/index.jsp)

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**Accessing terminology online**

The *Tivoli Software Glossary* includes definitions for many of the technical terms related to Tivoli software. The *Tivoli Software Glossary* is available at the following Tivoli software library Web site:


The IBM terminology Web site consolidates the terminology from IBM product libraries in one convenient location. You can access the terminology Web site at the following Web address:


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**Accessing publications online**

For products that have a documentation CD or DVD, this disk contains the product publications. The format of the publications is PDF, HTML, or both. Refer to the readme file on the CD or DVD for instructions on how to access the documentation.

Some product CDs or DVDs contain the product publications as well as the installation images for the product. The format of the publications is PDF, HTML, or both. To access the publications using a Web browser, open the infocenter.html file. The file is in a publications directory on the product CD or DVD.

IBM posts publications for Tivoli monitoring products, as they become available and whenever they are updated, to the Tivoli Monitoring and OMEGAMON XE Information Center at [http://publib.boulder.ibm.com/infocenter/tivihelp/v15r1/index.jsp](http://publib.boulder.ibm.com/infocenter/tivihelp/v15r1/index.jsp)

**Tip:** If you print PDF documents on other than letter-sized paper, set the option in the **File → Print** window that allows Adobe® Reader to print letter-sized pages on your local paper.
Ordering publications

You can order many Tivoli publications online at http://www.elink.ibmlink.ibm.com/publications/servlet/pbi.wss.

You can also order by telephone by calling one of these numbers:

- In the United States: 800-879-2755
- In Canada: 800-426-4968

In other countries, contact your software account representative to order Tivoli publications. To locate the telephone number of your local representative, perform the following steps:

2. Select your country from the list and click Go.
3. Click on About this site in the main panel to see an information page that includes the telephone number of your local representative.
Appendix B. Support information

If you have a problem with your IBM software, you want to resolve it quickly. IBM provides the following ways for you to obtain the support you need:

**Online**

The following sites contain troubleshooting information:

- Go to the IBM Software Support site at [http://www.ibm.com/software/support/probsub.html](http://www.ibm.com/software/support/probsub.html) and follow the instructions.

**IBM Support Assistant**

The IBM Support Assistant (ISA) is a free local software serviceability workbench that helps you resolve questions and problems with IBM software products. The ISA provides quick access to support-related information and serviceability tools for problem determination. To install the ISA software, go to [http://www.ibm.com/software/support/isa](http://www.ibm.com/software/support/isa).

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A

activity. One phase within a sequence of predefined steps called a policy that automate system responses to a situation that has fired (that is, become true).

agent. Software installed on systems you want to monitor that collects data about an operating system, subsystem, or application running on each such system. OMEGAMON XE for CICS TG on z/OS provides an example of an agent.

alert. An alert can be an audible system sound, a pop-up window, or a message sent to an external device that is triggered when an event is trapped by an OMEGAMON XE agent.

application programming interface (API). An API comprises multiple subprograms and data structures and the rules for using them; it enables application development using a particular language and, often, a particular operating environment.

associate. The process of linking a situation with a Navigator item that enables a light to go on and a sound to play for an open event. Predefined situations are associated automatically, as are situations created or edited through the Navigator item pop-up menu. When you open the Situation editor from the toolbar, any situations you create cannot be associated with a Navigator item during this editing session. You need to close the Situation editor, then open it again from the pop-up menu of the Navigator item with which the situation should be associated.

attribute. A system or application element being monitored by the OMEGAMON XE agent, such as Requests Executed and Thread Limit. An attribute can also be a field in an ODBC-compliant database.

attribute group. A set of related attributes that can be combined in a workspace view or a situation. When you open the view or start the situation, Tivoli Enterprise Portal retrieves data via its constituent attributes. Each type of agent has a set of one or more attribute groups associated with it.

B

baroc files. Basic Recorder of Objects in C files define event classes for a particular IBM Tivoli Enterprise Console® server. Baroc files also validate event formats based on these event-class definitions.

browser client. The software installed with the Tivoli Enterprise Portal Server that is downloaded to your computer when you start Tivoli Enterprise Portal in browser mode. The browser client runs under control of a Web browser.

C

CICS Transaction Gateway (CICS TG). CICS Transaction Gateway is a high-performing, secure, and scalable connector that enables client applications in different runtime environments to access CICS servers. Using standards-based interfaces, CICS Transaction Gateway delivers access to new and existing CICS applications. CICS TG integrates middle-tier application servers with CICS TS by providing a multiuser gateway that provides access to CICS COMMAREA, channel, and 3270 applications. CICS Transaction Gateway provides APIs for Java, C, C++, and COBOL. JCA resource adaptors for deployment within a J2EE application server, such as WebSphere Application Server, and COM objects are also provided.

code page. An assignment of displayable, printable characters and control codes to every possible binary combination of fields of a given size. In a one-byte (eight-bit) code page, there are 256 possible binary values (called code points). In addition, there are seven-bit, two-byte, and three-byte code pages.

Common Object Request Broker Architecture (CORBA). An industry specification for the design of object request brokers (ORBs). ORBs allow different computer systems to exchange data with each other as objects.

Configuration Tool (ICAT). A user interface tool used to configure OMEGAMON XE monitoring products running on z/OS.

Connection Manager threads. A resource of the CICS TG. A Connection Manager thread is allocated each time a client application successfully makes a remote connection to a CICS TG. The thread is released once the client application disconnects.

D

desktop client. Software supplied with IBM Tivoli Monitoring that you install on a workstation that you plan to use for interacting with the Tivoli Enterprise Portal Server and the Tivoli Enterprise Monitoring Server. The desktop Tivoli Enterprise Portal client provides the graphical user interface into the IBM Tivoli Monitoring network.

Domain Name Server (DNS). A database of symbolic domain names (such as node names, system identifiers, and network names) and the IP addresses they equate to, plus the server process that reads and maintains
that database. DNS is the primary name-resolution system for many distributed networks, including the Internet.

**E**

**Event.** An action or some occurrence, such as running out of memory or completing a transaction, that can be detected by a Tivoli Enterprise Portal situation. The event causes the situation to become true and an alert to be issued.

**Event Integration Facility (EIF).** An application programming interface that external applications can invoke to create, send, or receive IBM Tivoli Enterprise Console events. These events are referred to as either EIF events or TEC/EIF events.

**Extended LUW transaction.** A logical unit of work that is extended across successive ECI requests to the same CICS TS server. With an extended LUW transaction, the client Java application controls whether recoverable updates are committed or rolled back. With CICS Transaction Gateway for z/OS, extended LUW transactions received by a specific Gateway daemon can link only to CICS TS regions running on the same z/OS image.

**External Call Interface (ECI).** The CICS Transaction Gateway's External Call Interface is used when calling COMMAREA-based CICS applications. The COMMAREA is the buffer used for passing the data between the client and the CICS server. CICS sees the client request as just another distributed program link (DPL) request. ECI is supported on both distributed platforms and on z/OS.

**External CICS Interface (EXCI).** A z/OS application programming interface (API) provided as part of CICS Transaction Server that supports external applications' connections to and invocations of CICS transactions using nonstandard processes, including CORBA clients using IIOP, Java, Remote Procedure Call (RPC), sockets, WebSphere Application Server, WebSphere MQ, and telnet. CICS Transaction Gateway applications running on z/OS communicate requests to CICS TS using the External CICS Interface. EXCI calls get converted to ECI calls.

**External Presentation Interface (EPI).** The CICS Transaction Gateway's External Presentation Interface is used for invoking 3270-based transactions. A terminal is installed in CICS, and CICS sees the request as running on a remote terminal controlled by CICS TG. EPI is useful where presentation logic and business logic are integrated; thus a COMMAREA interface cannot be used to drive the business logic. EPI is supported on distributed platforms only.

**External Security Interface (ESI).** The CICS Transaction Gateway's External Security Interface is used for verifying and changing userid and password information within CICS. The ESI is based on the CICS Password Expiration Management (PEM) function. ESI is supported on distributed platforms only.

**G**

**Gateway daemon.** A component of CICS Transaction Gateway. This long-running Java process listens for network requests from remote Java client applications. It issues these requests to CICS using the client daemon on UNIX, Windows, and Linux platforms or using EXCI on z/OS. The Gateway daemon runs the protocol listener threads, the Connection Manager threads, and the Worker threads.

**H**

**Health.** A CICS TG concept. Health is an integer from 0 to 100 that indicates the current state of communications between a CICS Transaction Gateway daemon and CICS Transaction Server. At intervals of 1 minute, the Gateway daemon monitors certain error codes to determine the health of communications with CICS TS regions. At startup, the health is set to 100. If there are no connectivity problems, it remains at 100; however, intermittent problems can cause the health to drop. If TCP/IP load balancing is in effect, these problems reduce the amount of work sent to this Gateway daemon. If these problems go away, the health recovers.

**HTTP Hypertext Transfer Protocol.** A suite of protocols for the Internet that transfer and display hypertext documents.

**HTTP sessions.** Data related to sessions of specific Web browsers.

**Hub Tivoli Enterprise Monitoring Server.** The Tivoli Enterprise Monitoring Server that has been selected to act as the focal point to which all Tivoli Enterprise Portal Servers, monitoring agents, and managed systems connect. A remote Tivoli Enterprise Monitoring Server passes its collected data to the hub to be made available to the Tivoli Enterprise Portal server and clients, thereby creating an enterprise-wide view.

**I**

**IBM Tivoli Monitoring.** A client/server implementation for monitoring enterprise-wide computer networks that comprises a Tivoli Enterprise Monitoring Server, an application server known as the Tivoli Enterprise Portal Server, one or more Tivoli Enterprise Portal clients, and multiple monitoring agents, such as OMEAGAMON agents, that collect and distribute data to the monitoring server.
interface. The set of methods and properties that an object supports but that do not implement the object’s behavior or properties.

interval. The number of seconds that have elapsed between one sample and the next. A sample is the data that the monitoring agent collects for the server.

IPIC (IP interconnectivity). The IPIC protocol enables Distributed Program Link (DPL) access from a non-CICS program to a CICS program over TCP/IP, using the External Call Interface (ECI). IPIC passes and receives data using COMMAREAes, or containers.

J

J2EE Connector Architecture (JCA). A template for writing your own connectors, which is a binding between a J2EE application server and a backend enterprise information system (EIS) or data repository such as CICS, IMS™, or DB2®.

Java Database Connectivity (JDBC). An application programming interface (API) for connecting Java programs to the data in a relational database. With this API, you can encode data requests in Structured Query Language (SQL) that JDBC then passes to the database manager for interpretation and processing.

Java Secure Sockets Extension (JSSE). A set of Java packages that enable secure communications. It implements a Java version of the SSL and TLS protocols and includes functions for data encryption, server authentication, message integrity, and client authentication. Using JSSE, developers can secure the passing of data between a client and a server running any application protocol.

L

local mode. Describes the use of the CICS Transaction Gateway local protocol. The Gateway daemon is not used in local mode.

Logical Unit of Work (LUW). The processing that a program, such as CICS, performs between synchronization points.

M

monitor interval. A specified time, scalable to seconds, minutes, hours, or days, for how often the Tivoli Enterprise Monitoring Server checks to see if a situation has become true. The minimum monitor interval is 30 seconds; the default is 15 minutes.

Monitoring Exit. A small application that runs within the CICS TG to acquire data about the performance of transactions being processed. Data is then sent back to the OMEGAMON monitoring agent.

N

Navigator. The upper-left pane of the Tivoli Enterprise Portal window. The Navigator’s Physical view shows your network enterprise as a physical hierarchy of systems grouped by platform. OMEGAMON DE users can also create other views that form logical hierarchies grouped as you specify, such as by department or function.

O

OMEGAMON Dashboard Edition (OMEGAMON DE). The OMEGAMON that includes all the features of Tivoli Enterprise Portal included with OMEGAMON XE plus application integration components.

OMEGAMON Extended Edition (OMEGAMON XE). OMEGAMON XE is a suite of products that monitor and manage system and network applications on a variety of platforms. These products keep track of the availability and performance of all parts of your enterprise from one or more designated workstations, and provide reports you can use to track trends and troubleshoot problems.

OMEGAMON monitoring agent. The agent scans a managed system for data and sends it back to the Tivoli Enterprise Monitoring Server and the Tivoli Enterprise Portal for formatting into table views (that is, reports).

OMEGAMON Web Services. An open standards-based interface to Tivoli Management Framework processes that is built on SOAP requests. With OMEGAMON Web Services, any OMEGAMON XE monitor can be dynamically queried, which means its performance and availability data can be processed by other applications.

P

Persistent Data Store (PDS). A set of VSAM data sets where the Tivoli Management Framework running on z/OS stores short-term historical monitoring data.

pipe, EXCI. A logical, one-way communication path between a sending process (your Java application) and a receiving process (a CICS Transaction Server transaction) over which CICS Transaction Gateway passes distributed program link (DPL) requests. CICS TG creates an EXCI pipe only for the first ECI call; later calls reuse this pipe. You can allocate up to 250 pipes in an EXCI address space; increasing the number of available EXCI pipes increases the scalability of your CICS TG system.

policy. The Tivoli Enterprise Portal automation tool, with which you can define responses to critical events (that is, alerts) by automatically executing system commands or invoking external programs. A policy is a logical expression that describes one or more
automated steps, called activities, whose order of execution you control and that can perform predefined actions, schedule work for users, or automate manual tasks. For example, policies can monitor for excessive page-ins and page faults and then write the process name and ID to a log for later analysis, or monitor for average system CPU usage of 95% and then reduce the priority of each job found using more than 20% of the CPU.

In most cases, a policy links a Take Action command to a situation that has evaluated to true. Once begun, the policy’s workflow progresses until all activities have been completed or until the Tivoli Enterprise Portal user manually stops the policy. You can create both policies that fully automate workflow strategies and those that require user intervention. As with situations, policies are distributed to the managed systems you want to monitor and to which you are sending commands.

**product code.** The three-letter code used by IBM Tivoli Monitoring to identify the product component. For example, the product code for OMEGAMON XE for CICS on z/OS is KCP and the product code for OMEGAMON XE for CICS TG on z/OS is KGW.

**R**

Remote Mode. Describes the use of one of the supported CICS Transaction Gateway network protocols to connect to the Gateway daemon.

Remote Procedure Call (RPC). A protocol based on the Open Software Foundation’s Distributed Computing Environment (DCE) that allows one program to request services from a program running on another computer in the same network. (A procedure call is also known as a function call or a subroutine call.) RPC uses the client/server model: the requesting program is the client, and the responding program is the server. As with a local procedure call, an RPC is a synchronous operation: the requesting program is suspended until the remote procedure returns its results.

Resource Adapter. A JCA concept. A resource adapter is a system-level software driver that a J2EE application server, such as WebSphere Application Server, uses to connect to an enterprise information system (EIS), such as CICS, in order to provide connectivity between the EIS and the enterprise application. CICS TG provides the resource adapters to enable connectivity into CICS.

**runtime environments (RTEs).** A group of runtime libraries that provide a single operational environment on a z/OS system.

**S**

Secure Sockets Layer (SSL). A secure internet protocol that provides communication privacy. SSL enables client/server applications to communicate in a way that is designed to prevent eavesdropping, tampering, and message forgery. SSL has been succeeded by Transport Layer Security (TLS).

SSL has recently been succeeded by **Transport Layer Security (TLS)**, which is based on SSL. TLS and SSL are not interoperable; however, a message sent with TLS can be read by a client that handles SSL but not TLS.

**situation.** A set of conditions that, when met, creates an event. A condition consists of an attribute, an operator such as greater than or equal to, and a value. It can be read as, “if - system attribute - compared to - value”. An example of a situation is: IF CPU_usage GT 90. The expression CPU_usage > 90% is the situation condition. Situations are distributed to the managed systems you are monitoring.

**SYNCONRETURN transaction.** In a SYNCONRETURN ECI transaction, resources updated by the CICS TS transaction are committed (in other words, a syncpoint is taken) before its response is sent back (that is, before the return is made) to the requesting CICS TG Worker thread.

**T**

Take Action command. A Take Action command allows you to send commands to your managed systems, either automatically, in response to a situation that has fired (that is, turned true), or manually, whenever the Tivoli Enterprise Portal operator requires. With Take Action commands, you can enter a command or select one of the commands predefined by your product and run it on any system in your managed network. Thus you can issue Take Action commands either against the managed system where the situation fired or a different managed system in your network.

**target libraries.** SMP/E-controlled libraries that contain the data from the distribution media.

**thread.** A stream of computer instructions that controls a process. In some operating systems, a thread is the smallest unit of operation in a process. One thread composes one dispatchable unit of work. Several threads can run concurrently, performing different process tasks.

**threshold.** A level set in the system at which a message is sent or an error-handling program is called. For example, if measuring CPU utilization, the user can set the threshold level and the Tivoli Enterprise Portal notifies the system operator when that level is reached.

**Tivoli Data Warehouse.** This member of the IBM Tivoli Monitoring product family stores Tivoli Monitoring agents’ monitoring data in separate relational database tables so you can analyze historical trends using that enterprise-wide data. Reports generated from Tivoli
Data Warehouse data provide information about the availability and performance of your monitoring environment over different periods of time.

**Tivoli Enterprise Monitoring Server.** The central data management component for the Tivoli Management Framework.

**Tivoli Enterprise Portal Server.** The Tivoli Management Framework server you log on to. The Tivoli Enterprise Portal Server connects to the hub Tivoli Enterprise Monitoring Server and enables retrieval, manipulation, and analysis of data received from Tivoli Enterprise Monitoring Agents.

**Tivoli Management Framework.** A client-server implementation comprising a Tivoli Enterprise Monitoring Server, an application server known as the Tivoli Enterprise Portal Server, at least one Tivoli Enterprise Portal client, and OMEGAMON monitoring agents that collect and distribute data to a Tivoli Enterprise Monitoring Server.

**V**

**view.** A window pane, or frame, within a workspace. It might contain data from an agent in a chart or table, or it might contain a terminal session or browser, for example. A view can be split into two separate, autonomous views.

**W**

**warehousing.** The procedure of transferring short-term historical data within the Persistent Data Store at either the Tivoli Enterprise Monitoring Server or the OMEGAMON monitoring agent to the Tivoli Data Warehouse. This is usually performed at a scheduled interval, for example every 24 hours. The data in the PDS is then deleted to make room for new entries.

**worker threads.** A resource of the CICS TG. A Worker thread handles outbound connections between CICS TG and CICS. A connected client is allocated a Worker thread for each request to run a transaction in CICS. The thread is released once the transaction has completed.

**workspace.** The viewing area of the Tivoli Enterprise Portal window, excluding the Navigator. Each workspace comprises one or more views. Every Navigator item has its own set of default primary workspaces; each might have multiple subsidiary (also called secondary) workspaces that are accessible only via links from views within the primary workspace.

**X**

**XA transaction.** A global transaction (that is, one crossing system boundaries) that adheres to the X/Open standard for distributed transaction processing (DTP), including two-phase commit. With an XA transaction, z/OS resources are committed using the z/OS Recoverable Resource Management Services, RRMS.
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