

6.1

*CICS TS Extended Recovery Facility (XRF)
Reference*



Contents

XRF Stabilization Notice.....	0
Chapter 1. XRF System Initialization Parameters.....	1
XRF.....	1
ADI.....	1
PDI.....	2
JESDI.....	2
RST.....	3
CLT.....	4
TAKEOVR.....	4
RMTRAN.....	5
RSTSIGNOFF.....	6
RSTSIGNTIME.....	6
AUTCONN.....	7
Chapter 2. XRF User Exits.....	9
XRF request-processing program exit XXRSTAT.....	9
Chapter 3. XRF Transactions.....	11
Working with displays in CEMT.....	11
CEBT.....	11
CEBT SET TAKEOVER.....	12
CEBT PERFORM TAKEOVER.....	13
CEBT PERFORM SHUTDOWN.....	13
CEBT INQUIRE TAKEOVER.....	14
CEBT INQUIRE SURVEILLANCE.....	14
CEBT SET SURVEILLANCE.....	14
CEBT INQUIRE INTTRACE.....	15
CEBT INQUIRE GTFTRACE.....	15
CEBT INQUIRE AUXTRACE.....	16
CEBT INQUIRE DUMP.....	17
CEBT PERFORM SNAP.....	18
CEBT SET AUXTRACE.....	18
CEBT SET DUMP.....	19
CEBT SET GTFTRACE.....	20
CEBT SET INTTRACE.....	21
Chapter 4. XRF Diagnostics.....	23
XRF takeover trace points.....	23
Chapter 5. XRF Messages.....	25
Chapter 6. XRF Resource Definitions.....	27
CLT: command list table.....	27
RST: recoverable service table.....	27

Chapter 1. XRF System Initialization Parameters

XRF

Stabilized feature: The Extended Recovery Facility (XRF) in CICS is stabilized. Consider alternative technologies that provide more flexible high-availability solutions for modern workloads. These solutions include the z/OS Automatic Restart Manager (ARM), CICS data sharing, VTAM persistent sessions, and use of the cross-system coupling facility. See also [Stabilization notices and discontinued functions](#).

The Extended Recovery Facility (XRF) provided high availability through automatic failover between active and alternate CICS regions. XRF is no longer available in CICS TS 6.x.

About XRF

The Extended Recovery Facility (XRF) was a CICS feature that provided high availability through automatic failover. When an active CICS region failed, XRF enabled an alternate CICS region to take over processing with minimal disruption to users and applications.

XRF is stabilized and remains available in CICS TS 6.1, 6.2, and 6.3 for existing users. However, XRF is not available in CICS TS 6.4 and later releases. Consider alternative high availability technologies that provide more flexible solutions for modern workloads.

Documentation for existing XRF users

If you are using XRF in an earlier release of CICS TS, documentation is available:

- **CICS TS 5.6 HTML documentation:** [CICS TS 5.6](#) - Search for "XRF" to find all XRF-related topics including the XRF system initialization parameter, configuration, and operations.
- **CICS TS 6.x PDF documentation:** [XRF Reference PDF](#) - A comprehensive reference that includes all XRF system initialization parameters, user exits, transactions, diagnostics, messages, and resource definitions for CICS TS 6.1, 6.2, and 6.3.

Alternative high availability solutions

Consider these modern high availability technologies:

- Sysplex-based high availability configurations
- CICS regions in a CICSplex with workload management
- Application-level redundancy and failover mechanisms

ADI

Stabilized feature: The Extended Recovery Facility (XRF) in CICS is stabilized. Consider alternative technologies that provide more flexible high-availability solutions for modern workloads. These solutions include the z/OS Automatic Restart Manager (ARM), CICS data sharing, VTAM persistent sessions, and use of the cross-system coupling facility. See also [Stabilization notices and discontinued functions](#).

The **ADI** system initialization parameter specifies the alternate delay interval in seconds for an alternate CICS region when you are running CICS with XRF.

For information about the XRF system initialization parameter, see [XRF](#).

Defining ADI

You can define the ADI system initialization parameter in the following ways:

- On the **PARM** parameter of the **EXEC PGM=DFHSSIP** statement

- In the SYSIN data set of the CICS start up job stream
- Through the system console
- In the DFHSIT macro

Values for ADI

ADI={30|number}

Valid values for the ADI system initialization parameter are as follows:

30

30 is the default value for ADI. This specifies an alternate delay interval of 30 seconds.

number

Specifies the alternate delay interval in seconds. The minimum delay that you can specify is 5 seconds. This is the time that must elapse between the (apparent) loss of the surveillance signal in the active CICS region, and any reaction by the alternate CICS region. The corresponding parameter for the active region is the PDI system initialization parameter. The ADI and PDI system initialization parameters need not have the same value.

Note: You must give careful consideration to the values you specify on the ADI and JESDI system initialization parameters so that they do not conflict with your installation's policy on PR/SM RESETTIME and the XCF INTERVAL and OPNOTIFY intervals. You should ensure that the sum of the interval you specify on the ADI system initialization parameter plus the interval you specify on the JESDI system initialization parameter exceeds the interval specified by the XCF INTERVAL and the PR/SM policy interval RESETTIME.

PDI

Stabilized feature: The Extended Recovery Facility (XRF) in CICS is stabilized. Consider alternative technologies that provide more flexible high-availability solutions for modern workloads. These solutions include the z/OS Automatic Restart Manager (ARM), CICS data sharing, VTAM persistent sessions, and use of the cross-system coupling facility. See also [Stabilization notices and discontinued functions](#).

The PDI system initialization parameter specifies the XRF primary delay interval, in seconds, in a SIT for an active CICS region.

Defining PDI

You can define the PDI system initialization parameter in the following ways:

- On the **PARM** parameter of the **EXEC PGM=DFHSIP** statement
- In the SYSIN data set of the CICS start up job stream
- Through the system console
- In the DFHSIT macro

Values for PDI

Valid values for the PDI system initialization parameter are as follows:

PDI={30|decimal-value}

30 is the default value for PDI. The minimum delay that you can specify is 5 seconds. This is the time that must elapse between the (apparent) loss of the surveillance signal in the alternate CICS region, and any reaction by the active CICS region. The corresponding parameter for the alternate CICS region is ADI. PDI and ADI need not have the same value.

JESDI

Stabilized feature: The Extended Recovery Facility (XRF) in CICS is stabilized. Consider alternative technologies that provide more flexible high-availability solutions for modern workloads. These solutions

include the z/OS Automatic Restart Manager (ARM), CICS data sharing, VTAM persistent sessions, and use of the cross-system coupling facility. See also [Stabilization notices and discontinued functions](#).

The **JESDI** system initialization parameter specifies, in a SIT for an alternate XRF system, the JES delay interval.

Defining JESDI

You can define the JESDI system initialization parameter in the following ways:

- On the **PARM** parameter of the **EXEC PGM=DFHSIP** statement
- In the SYSIN data set of the CICS start up job stream
- Through the system console
- In the DFHSIT macro

Values for JESDI

Valid values for the JESDI system initialization parameter are as follows:

JESDI={30|number} (alternate)

30 is the default value for JESDI. The minimum is 5 seconds. The alternate CICS region has to ensure that the active CICS region has been canceled before it can take over the resources owned by the active.

Note: You must give careful consideration to the values you specify for the parameters ADI and JESDI so that they do not conflict with your installation's policy on PR/SM RESETTIME and the XCF INTERVAL and OPNOTIFY intervals. You should ensure that the sum of the interval you specify for ADI plus JESDI exceeds the interval specified by the XCF INTERVAL and the PR/SM policy interval RESETTIME.

RST

Stabilized feature: The Extended Recovery Facility (XRF) in CICS is stabilized. Consider alternative technologies that provide more flexible high-availability solutions for modern workloads. These solutions include the z/OS Automatic Restart Manager (ARM), CICS data sharing, VTAM persistent sessions, and use of the cross-system coupling facility. See also [Stabilization notices and discontinued functions](#).

The **RST** system initialization parameter specifies a recoverable service table suffix.

Defining RST

You can define the RST system initialization parameter in the following ways:

- On the **PARM** parameter of the **EXEC PGM=DFHSIP** statement
- In the SYSIN data set of the CICS start up job stream
- Through the system console
- In the DFHSIT macro

Values for RST

Valid values for the RST system initialization parameter are as follows:

The recoverable service table (RST) is used for CICS DBCTL XRF (extended recovery facility) support. It contains a description of the DBCTL configuration. On detection of a DBCTL failure, the **active** CICS system uses the RST together with the z/OS subsystem VERIFY to determine the existence of a suitable alternative DBCTL subsystem. The **alternate** CICS system uses the RST to check for the presence of a DBCTL subsystem.

RST={NO|xx|YES}

NO is the default value for RST. If you are running CICS with XRF=YES, and you are using DBCTL, you must specify an RST if you want XRF support for DBCTL.

For information about coding the macros for this table, see [Recoverable service table \(RST\)](#).

CLT

The **CLT** system initialization parameter specifies the suffix for the command list table (CLT), if the system initialization table (SIT) is used by an alternative Extended Recovery Facility (XRF) system.

Stabilized feature: The Extended Recovery Facility (XRF) in CICS is stabilized. Consider alternative technologies that provide more flexible high-availability solutions for modern workloads. These solutions include the z/OS Automatic Restart Manager (ARM), CICS data sharing, VTAM persistent sessions, and use of the cross-system coupling facility. See also [Stabilization notices and discontinued functions](#).

If you are using XRF, you must have a CLT; it is used only by the alternate CICS system. The command list table is used by XRF and contains a list of z/OS system commands and messages to be issued to the operator during takeover. For details on XRF system initialization parameter, see [XRF system initialization parameter](#).

Defining CLT

You can define the CLT system initialization parameter in the following ways:

- In the **PARM** parameter of the **EXEC PGM=DFHSIP** statement.
- In the SYSIN data set of the CICS startup job stream.
- Through the system console.
- In the DFHSIT macro.

Values for CLT

CLT=xx (alternate)

The name of the CLT table is DFHCLTxx and the name consists of six fixed characters followed by a two character suffix xx. A suffix consists of one or two characters. The acceptable characters are: A-Z 0-9 @. (Do not use **NO** or **DY**). For information about coding the macros for this table, see [Command list table \(CLT\)](#).

TAKEOVR

The **TAKEOVR** system initialization parameter specifies the action to be taken by the alternate CICS region, following the apparent loss of the surveillance signal in the active CICS region.

Defining TAKEOVR

You can define the TAKEOVR system initialization parameter in the following ways:

- On the **PARM** parameter of the **EXEC PGM=DFHSIP** statement
- In the SYSIN data set of the CICS start up job stream
- Through the system console
- In the DFHSIT macro

Values for TAKEOVR

Valid values for the TAKEOVR system initialization parameter are as follows:

TAKEOVR={MANUAL|AUTO|COMMAND} (alternate)

Use this system initialization parameter in the SIT for an alternate CICS region. This system initialization parameter also specifies the level of operator involvement.

If both active and alternate CICS regions are running under different MVS images in the same sysplex, and an MVS failure occurs in the MVS image of the active CICS region, the TAKEOVR option is overridden.

- If the MVS images are running in a PR/SM environment, CICS XRF takeover to an alternate CICS region on a separate MVS image completes without the need for any operator intervention.
- If the MVS images are not running in a PR/SM environment, the CICS takeover is still initiated automatically, but needs operator intervention to complete, because XCF outputs a WTOR (IXC402D). Sysplex partitioning does not complete until the operator replies to this message, and CICS waits for sysplex partitioning to complete before completing the XRF takeover.

MANUAL

MANUAL is the default value for TAKEOVR. The operator is asked to approve a takeover if the alternate CICS region cannot detect the surveillance signal of the active CICS region.

The alternate CICS region does not ask the operator for approval if the active CICS region signs off abnormally, or if there is an operator or program command for takeover. In these cases, there is no doubt that the alternate CICS region should take over, and manual involvement by the operator would be an unnecessary overhead in the takeover process.

You could use this option, for instance, to ensure manual takeover of a main or coordinator region in MRO.

AUTO

No operator approval, or intervention, is needed for a takeover.

COMMAND

Takeover occurs only when a CEBT PERFORM TAKEOVER command is received by the alternate CICS region. It ensures, for instance, that a dependent alternate CICS region, in MRO, is activated only if it receives the command from the operator, or from a main or coordinator region.

RMTRAN

The **RMTRAN** system initialization parameter specifies the name of the transaction that you want an alternate CICS to initiate when logged-on class 1 terminals, which are defined with the attribute RECOVNOTIFY(TRANSACTION) specified, are switched following a takeover.

Defining RMTRAN

You can define the RMTRAN system initialization parameter in the following ways:

- On the **PARM** parameter of the **EXEC PGM=DFHSIP** statement
- In the SYSIN data set of the CICS start up job stream
- Through the system console
- In the DFHSIT macro

Values for RMTRAN

Valid values for the RMTRAN system initialization parameter are as follows:

RMTRAN=({CSGM|name1},{CSGM |name2})

CSGM is the default value for RMTRAN. This system initialization parameter is applicable only on an alternate CICS region.

If you do not specify a name here, CICS uses the CSGM transaction, the default CICS good morning transaction.

name1

This is the transaction that CICS initiates at terminals that do **not** remain signed-on after the takeover (that is, they are still connected to CICS, but are signed off).

name2

This is the transaction that CICS initiates at terminals that remain signed-on after the takeover. If you specify only name1, CICS uses the CSGM transaction as the default for name2.

If you are using z/OS Communications Server persistent sessions, the name2 transaction is ignored and the name1 transaction is always initiated.

RSTSIGNOFF

The **RSTSIGNOFF** system initialization parameter specifies whether all users signed-on to the active CICS region are to remain signed-on following a persistent sessions restart.

Defining RSTSIGNOFF

You can define the RSTSIGNOFF system initialization parameter in the following ways:

- On the **PARM** parameter of the **EXEC PGM=DFHSP** statement
- In the SYSIN data set of the CICS start up job stream
- Through the system console
- In the DFHSIT macro

Values for RSTSIGNOFF

Valid values for the RSTSIGNOFF system initialization parameter are as follows:

RSTSIGNOFF={NOFORCE|FORCE}

It applies to the following events:

- A persistent sessions restart, where PSDINT=*value* and PSTYPE=SNPS or MNPS are specified, and the restart follows a CICS abnormal or immediate shutdown.
- A persistent sessions restart, where PSDINT=*value* and PSTYPE=MNPS are specified, and terminal sessions are recovered as a result of a z/OS Communications Server restart.

NOFORCE

NOFORCE is the default value for RSTSIGNOFF. Do not sign off users, unless FORCE is specified on the RSTSIGNOFF parameter in the TYPETERM definition referenced by the user's terminal definition.

Thus for a user to remain signed on after a persistent sessions restart, NOFORCE must be specified as a system initialization parameter and on the TYPETERM definition.

FORCE

Sign off all users regardless of the RSTSIGNOFF attribute specified in the TYPETERM definition referenced by the user's terminal definition.

See [The CICS segment in user profiles](#) for information about user profile options in the CICS segment, and see [TYPETERM resources](#) for information about the TYPETERM resource definition.

RSTSIGTIME

The **RSTSIGTIME** parameter specifies the timeout delay interval for signon retention during a persistent sessions restart.

Defining RSTSIGTIME

You can define the RSTSIGTIME system initialization parameter in the following ways:

- On the **PARM** parameter of the **EXEC PGM=DFHSP** statement
- In the SYSIN data set of the CICS start up job stream
- Through the system console

- In the DFHSIT macro

Values for RSTSIGNTIME

Valid values for the RSTSIGNTIME system initialization parameter are as follows:

RSTSIGNTIME={500|decimal-value}

You can specify a 1-to-6 digit time in hours, minutes and seconds, up to the maximum time of 23 hours 59 minutes 59 seconds. If you specify less than six digits, CICS pads the value with leading zeros. Thus a value of 500 is taken as five minutes exactly.

RSTSIGNTIME is counted from the time when CICS failed. Note that the time of failure cannot be determined with complete accuracy.

If you specify NOFORCE on all the appropriate parameters to enable a user to remain signed on, but the persistent sessions restart takes longer than the time specified on the **RSTSIGNTIME** parameter, CICS ensures users do not remain signed on after the delay period expires.

500

500 is the default value for RSTSIGNTIME. Five minutes is the default value.

time

This is the time, in the range 0 through 23 hours 59 minutes 59 seconds, during which CICS permits users to remain signed on during a persistent sessions restart. The period is measured from the CICS failure to the time when the user starts working on the terminal. If the specified time expires before the user starts working on the terminal, users signed on at the time CICS failed are not signed on again after restart.

A value of 0 means there is no timeout delay, and terminals are not signed on after a persistent sessions restart, which means that RSTSIGNTIME=0 has the same effect as coding RSTSIGNOFF=FORCE.

AUTCONN

The **AUTCONN** system initialization parameter specifies that the reconnection of terminals is to be delayed, to allow time for manual switching.

Defining AUTCONN

You can define the AUTCONN system initialization parameter in the following ways:

- On the **PARM** parameter of the **EXEC PGM=DFHSIP** statement
- In the SYSIN data set of the CICS start up job stream
- Through the system console
- In the DFHSIT macro

Values for AUTCONN

Valid values for the AUTCONN system initialization parameter are as follows:

AUTCONN={0|hhmmss}

0 is the default value for AUTCONN. The delay is *hh* hours, *mm* minutes, and *ss* seconds. The default value of zero means that there is no delay in the attempted reconnection.

The delay interval applies to the connection of terminals with AUTOCONNECT(YES) specified in the TYPETERM definition, at a warm or emergency restart.

Chapter 2. XRF User Exits

XRF request-processing program exit XXRSTAT

This exit is invoked if a z/OS Communications Server failure or a z/OS Communications Server predatory takeover occurs.

XXRSTAT enables you to decide whether to terminate CICS when either of the following occurs:

- CICS is notified of a z/OS Communications Server failure by the TPEND exit.
- A predatory takeover has occurred. Predatory takeover can occur if you are using Release 3.4.0 or later, and a z/OS Communications Server application with the same APPLID as that of the executing CICS system assumes control of all the sessions of the executing CICS system.

XXRSTAT gives you the choice of allowing the system which has suffered the takeover to continue or to terminate.

To avoid potential integrity exposures, CICS default action after a predatory takeover is to terminate without a dump. If you want CICS to terminate with a dump, your exit program should return UERCABDU. CICS terminates with the abend code specified by your exit program.

If you want CICS to continue after a predatory takeover, your exit program must return UERCCOIG. Message DFHZC0101 is issued and CICS continues processing without z/OS Communications Server support. The predatory application assumes control of all z/OS Communications Server sessions.

Note: Allowing CICS to continue after a predatory takeover could cause integrity problems and is not recommended. Use RACF® to protect your CICS APPLIDs.

Chapter 3. XRF Transactions

Working with displays in CEMT

Overtyping a display

When you issue an INQUIRE request, you usually get a display that consists of status information for each resource in the specified group. The status information is displayed as a list of abbreviated keywords. You can move the cursor to some fields and change their contents by overtyping. When you press the ENTER key again, CICS reads the contents of all fields that have been changed, and processes any valid operations implied by the changes. If you make an invalid change, you get an error message, and the field is not changed.

When a field is overtyped, CEMT will accept and identify only as few characters as are necessary to uniquely identify the keyword within the valid options for that position. This is usually only one character.

On many of the status displays, the current status is displayed in certain positional fields at the right-hand side of the display. For some fields, the positional display appears only when the status of a particular resource is 'on'. You can overwrite the current status (when it is either displayed or blank) to change it.

So, for example, if you type CEMT INQUIRE SYD, you get a display of the current settings of the entries in the system dump table. The various attributes of those entries are displayed in fields across the screen. If CICS is to be shut down after the occurrence of an error for this dump code, 'Shu' appears in the third field of attributes for that dump code. If CICS is not to be shut down, however, the 'Shu' space remains blank. If you want CICS to be shut down for this dump code, you can tab to that field and type shu in that blank space in that field only.

The sequence of the positional fields is given in the descriptions of the various CEMT INQUIRE commands.

Whenever you overwrite a display, not only is that particular action taken but all the status information is refreshed. You can avoid the overhead of a large number of table searches either by using the SET command, or by limiting your inquiry to a specific number of resources (either by using a 'wild card' in the search argument or by naming a range of resource identifiers).

Tab key

The fields you can change are different in each display. You can detect them, however, by pressing the tab key repeatedly. This causes the cursor to jump from one field to the next.

Scrolling symbol (+ sign)

A plus (+) sign on the first or last line of a display tells you that there is more data above or below your current display. Scrolling backward reveals the data above, and scrolling forward reveals the data below.

Blank fields in a display

Some displays contain blank fields that allow you to specify options, such as NEWCOPY, on the CEMT SET PROGRAM command, which are not part of the status of a resource. A status, such as NOREAD, which begins NO, is also represented by a blank field. You can detect these fields by using the tab key.

CEBT - main terminal (alternate CICS)

Stabilized feature: The Extended Recovery Facility (XRF) in CICS is stabilized. Consider alternative technologies that provide more flexible high-availability solutions for modern workloads. These solutions

include the z/OS Automatic Restart Manager (ARM), CICS data sharing, VTAM persistent sessions, and use of the cross-system coupling facility. See also [Stabilization notices and discontinued functions](#).

Use CEBT to control an alternate CICS system in an extended recovery facility (XRF) environment.

You can start this transaction only at the operating system console by using the z/OS **MODIFY** command. The CEBT transaction is not subject to transaction security checking, which means that any user is authorized to use CEBT. You can use RACF to control who is allowed to use the MODIFY command. For more information, see [Using an MVS system console as a CICS terminal](#).

Starting a transaction at the system console is described in [Using the system console](#).

Minimum abbreviation of keywords

The CEBT command accepts as few characters of a keyword as needed to identify it uniquely in the request.

An exception to this rule is the SHUTDOWN keyword, for which the minimum abbreviation is SHUT.

In the syntax displays on your screen, the minimum permitted abbreviation is shown in uppercase characters, and the rest of the keyword is shown in lowercase characters.

Minimum abbreviations might change between CICS releases because of the introduction of new commands.

What CEBT commands are available

The **CEBT INQUIRE** and **CEBT SET** commands allow you to query or set the following:

- Auxiliary trace (“CEBT INQUIRE AUXTRACE” on page 16 and “CEBT SET AUXTRACE” on page 18)
- The dump data set (“CEBT INQUIRE DUMP” on page 17 and “CEBT SET DUMP” on page 19)
- GTF trace (“CEBT INQUIRE GTFTRACE” on page 15 and “CEBT SET GTFTRACE” on page 20)
- Internal trace (“CEBT INQUIRE INTTRACE” on page 15 and “CEBT SET INTTRACE” on page 21)
- Surveillance or ‘tracking’ of the active CICS system by the alternate CICS system (“CEBT INQUIRE SURVEILLANCE” on page 14 and “CEBT SET SURVEILLANCE” on page 14)
- Takeover from the active CICS system by the alternate CICS system (“CEBT INQUIRE TAKEOVER” on page 14 and “CEBT SET TAKEOVER” on page 12)

You can use the **CEBT PERFORM** commands for the following tasks:

- Shut down the alternate CICS system (“CEBT PERFORM SHUTDOWN” on page 13).
- Request a dump of the alternate CICS and continue processing (“CEBT PERFORM SNAP” on page 18).
- Cause the alternate CICS to take over from the active CICS (“CEBT PERFORM TAKEOVER” on page 13).

CEBT SET TAKEOVER

Stabilized feature: The Extended Recovery Facility (XRF) in CICS is stabilized. Consider alternative technologies that provide more flexible high-availability solutions for modern workloads. These solutions include the z/OS Automatic Restart Manager (ARM), CICS data sharing, VTAM persistent sessions, and use of the cross-system coupling facility. See also [Stabilization notices and discontinued functions](#).

Set takeover from the active CICS system by the alternate CICS system to be automatic, manual, or command-driven.

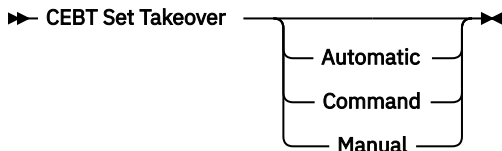
Syntax

Press the Clear key to clear the screen. There are two ways to start this transaction:

- Type CEBT SET TAKEOVER (or suitable abbreviations for the keywords). The resulting display lists the current status, similar to that obtained by using the **CEBT INQUIRE TAKEOVER** command. You can tab to the highlighted or blank fields and overtype them with the required values.

- Type **CEBT SET TAKEOVER** (or suitable abbreviations for the keywords), followed by one or more attribute settings that you want to change. For example, **CEBT STM** changes takeover to a manual operation if it was previously specified to be automatic.

CEBT SET TAKEOVER



Options

Automatic

Takeover is to occur automatically.

Command

Takeover is to be by command.

Manual

Takeover is to be manual.

CEBT PERFORM TAKEOVER

Stabilized feature: The Extended Recovery Facility (XRF) in CICS is stabilized. Consider alternative technologies that provide more flexible high-availability solutions for modern workloads. These solutions include the z/OS Automatic Restart Manager (ARM), CICS data sharing, VTAM persistent sessions, and use of the cross-system coupling facility. See also [Stabilization notices and discontinued functions](#).

The **CEBT PERFORM TAKEOVER** command initiates a takeover by the alternate CICS system, causing the active CICS system to sign off abnormally.

Syntax

CEBT PERFORM TAKEOVER

➡ CEBT Perform Takeover — Dump ➡

Options

Dump

Sends a message to the active CICS system requesting it to take a system dump from the CAVM data set. This request is not honored if the active CICS fails before the dump can be taken.

CEBT PERFORM SHUTDOWN

Stabilized feature: The Extended Recovery Facility (XRF) in CICS is stabilized. Consider alternative technologies that provide more flexible high-availability solutions for modern workloads. These solutions include the z/OS Automatic Restart Manager (ARM), CICS data sharing, VTAM persistent sessions, and use of the cross-system coupling facility. See also [Stabilization notices and discontinued functions](#).

Shut down the alternate CICS system in an XRF complex.

Description

If you enter **CEBT PERFORM SHUTDOWN**, all active system tasks are allowed to finish, and the alternate CICS system signs off normally from the CICS availability manager (CAVM) data set.

CEBT PERFORM SHUTDOWN

►► CEBT Perform SHUTdown — Dump — Immediate →◄

Options

Dump

Produces a dynamic storage dump when the shutdown is complete.

Immediate

Shuts down the alternate CICS system immediately, terminating all active tasks. The alternate CICS signs off abnormally from the CAVM data set. This action can cause the primary (active) CICS system toabend if tasks are still running.

CEBT INQUIRE TAKEOVER

Stabilized feature: The Extended Recovery Facility (XRF) in CICS is stabilized. Consider alternative technologies that provide more flexible high-availability solutions for modern workloads. These solutions include the z/OS Automatic Restart Manager (ARM), CICS data sharing, VTAM persistent sessions, and use of the cross-system coupling facility. See also [Stabilization notices and discontinued functions](#).

Display whether any takeover from the active CICS system by the alternate CICS system is to be automatic, manual, or command-driven.

Input

Press the Clear key and type CEBT INQUIRE TAKEOVER (or suitable abbreviations for the keywords).

To change various attributes, use the **CEBT SET TAKEOVER** command.

CEBT INQUIRE TAKEOVER

►► CEBT Inquire Takeover →◄

CEBT INQUIRE SURVEILLANCE

Stabilized feature: The Extended Recovery Facility (XRF) in CICS is stabilized. Consider alternative technologies that provide more flexible high-availability solutions for modern workloads. These solutions include the z/OS Automatic Restart Manager (ARM), CICS data sharing, VTAM persistent sessions, and use of the cross-system coupling facility. See also [Stabilization notices and discontinued functions](#).

Display the surveillance status of the active CICS system by the alternate CICS system.

Input

Press the Clear key and type CEBT INQUIRE SURVEILLANCE (or suitable abbreviations for the keywords).

To change various attributes, use the **CEBT SET SURVEILLANCE** command.

CEBT INQUIRE SURVEILLANCE

►► CEBT INQUIRE SURVEILLANCE →◄

CEBT SET SURVEILLANCE

Stabilized feature: The Extended Recovery Facility (XRF) in CICS is stabilized. Consider alternative technologies that provide more flexible high-availability solutions for modern workloads. These solutions include the z/OS Automatic Restart Manager (ARM), CICS data sharing, VTAM persistent sessions, and use of the cross-system coupling facility. See also [Stabilization notices and discontinued functions](#).

Set the surveillance status of the active CICS region by the alternate CICS region.

Syntax

CEBT SET SURVEILLANCE



Options

OFF

Stop surveillance of the active CICS region by the alternate CICS region.

ON

Start surveillance of the active CICS region by the alternate CICS region.

CEBT INQUIRE INTTRACE

Stabilized feature: The Extended Recovery Facility (XRF) in CICS is stabilized. Consider alternative technologies that provide more flexible high-availability solutions for modern workloads. These solutions include the z/OS Automatic Restart Manager (ARM), CICS data sharing, VTAM persistent sessions, and use of the cross-system coupling facility. See also [Stabilization notices and discontinued functions](#).

Show the status of CICS internal tracing.

Description

CEBT INQUIRE INTTRACE shows whether CICS internal trace is in progress.

This command is intended for use at terminals that do not support the full-screen tracing transaction CETR.

Input

Press the Clear key and type **CEBT INQUIRE INTTRACE** (or suitable abbreviations for the keywords).

To change various attributes, use the **CEBT SET INTTRACE** command.

CEBT INQUIRE INTTRACE

➤ CEBT Inquire Intrtrace ➤

Displayed fields

Intrtrace

Indicates that this panel relates to an INTTRACE inquiry.

Start

CICS internal trace is in progress.

Stopped

CICS internal trace is not in progress.

CEBT INQUIRE GTFTRACE

Stabilized feature: The Extended Recovery Facility (XRF) in CICS is stabilized. Consider alternative technologies that provide more flexible high-availability solutions for modern workloads. These solutions include the z/OS Automatic Restart Manager (ARM), CICS data sharing, VTAM persistent sessions, and use of the cross-system coupling facility. See also [Stabilization notices and discontinued functions](#).

Show the status of CICS trace to z/OS Generalized Tracing Facility (GTF).

Description

CEBT INQUIRE GTFTRACE shows whether CICS trace to GTF is started or stopped.

This command is intended for use at terminals that do not support the CETR full-screen tracing transaction.

For information about GTF trace, see [z/OS Generalized Trace Facility \(GTF\) trace as an alternative CICS trace destination](#).

Input

Press the Clear key and type **CEBT INQUIRE GTFTRACE** (or suitable abbreviations for the keywords).

To change any attributes, use the **CEBT SET GTFTRACE** command.

CEBT INQUIRE GTFTRACE

➤ CEBT Inquire Gtftrace ➤

Displayed fields

Gtftrace

Indicates that this panel relates to a GTFTRACE inquiry.

Start

CICS trace to z/OS GTF is in progress.

Stopped

CICS trace to z/OS GTF is not in progress.

CEBT INQUIRE AUXTRACE

Stabilized feature: The Extended Recovery Facility (XRF) in CICS is stabilized. Consider alternative technologies that provide more flexible high-availability solutions for modern workloads. These solutions include the z/OS Automatic Restart Manager (ARM), CICS data sharing, VTAM persistent sessions, and use of the cross-system coupling facility. See also [Stabilization notices and discontinued functions](#).

Return information about the status of auxiliary trace.

Description

Auxiliary trace entries are made to a pair of CICS-controlled BSAM data sets, A and B.

CEBT INQUIRE AUXTRACE returns the following information:

- Whether the auxiliary trace data set is open or closed
- Which auxiliary trace data set is active, Cur(A) or Cur(B)
- Whether an auxiliary trace is in progress (started) or not (stopped).

For background information about auxiliary trace, see [Using CICS trace for problem determination](#).

Input

Press the Clear key and type **CEBT INQUIRE AUXTRACE** (or suitable abbreviations for the keywords).

To change various attributes, use the **CEBT SET AUXTRACE** command.

CEBT INQUIRE AUXTRACE

➤ CEBT Inquire Auxtrace ➤

Displayed fields

All

Automatic switching occurs as necessary until the end of this CICS session without the need for operator intervention.

Auxiliary

Identifies this panel as relating to auxiliary trace.

Current(A|B)

Displays a one character identifier of the current auxiliary data set, which can be A or B. This value is blank if there is no auxiliary trace data set.

Next

Automatic switching occurs when the current trace data set is full, but not subsequently.

Noswitch

Switching does not occur without operator intervention.

Pause

Auxiliary tracing stopped, but the trace data set remains open. A subsequent START request causes trace entries to be written immediately following those that were written before the PAUSE request.

Start

Auxiliary tracing is in progress.

Stop

Auxiliary tracing has stopped.

Switch

Displays the information that an immediate switch is being made from the current auxiliary trace data set to the alternate trace data set.

CEBT INQUIRE DUMP

Stabilized feature: The Extended Recovery Facility (XRF) in CICS is stabilized. Consider alternative technologies that provide more flexible high-availability solutions for modern workloads. These solutions include the z/OS Automatic Restart Manager (ARM), CICS data sharing, VTAM persistent sessions, and use of the cross-system coupling facility. See also [Stabilization notices and discontinued functions](#).

Retrieve information about the CICS dump data sets.

Description

CEBT INQUIRE DUMP tells you which dump data set (A or B) is currently open.

For general information about dumps, see [Using dumps in problem determination](#).

Input

Press the Clear key and type **CEBT INQUIRE DUMP** (or suitable abbreviations for the keywords).

To change various attributes, use the **CEBT SET DUMP** command.

CEBT INQUIRE DUMP

➤ CEBT Inquire Dump ➤

Displayed fields

Autoswitch

The switch occurs only when the active dump data set is full, but not subsequently.

Closed

The active CICS dump data set is closed.

Currentdds(value)

Displays a one character indicator that shows which dump data set is active. This can be A or B.

Dump

Indicates that this panel relates to a dump data set inquiry.

Noautoswitch

When the active dump data set is full, there is not an automatic switch to the inactive dump data set.

Note: Because this is a negative attribute, the field appears blank.

Open

The active CICS dump data set is open.

Switch

The currently active dump data set is to become inactive, and the currently inactive data set is to become active.

CEBT PERFORM SNAP

Stabilized feature: The Extended Recovery Facility (XRF) in CICS is stabilized. Consider alternative technologies that provide more flexible high-availability solutions for modern workloads. These solutions include the z/OS Automatic Restart Manager (ARM), CICS data sharing, VTAM persistent sessions, and use of the cross-system coupling facility. See also [Stabilization notices and discontinued functions](#).

Produce a snap dump of the alternate CICS system while CICS continues to run.

Description

CEBT PERFORM SNAP causes a snap dump of the alternate CICS system to be taken while CICS continues to run. All **CEBT PERFORM SNAP** requests result in an SDUMP on an MVS SYS1.DUMPnn data set. The use of **CEBT PERFORM SNAP** prevents all other tasks from running on the alternate system, and could delay takeover, or recovery after takeover.

Syntax

CEBT PERFORM SNAP

➤ CEBT Perform SNap ➤

CEBT SET AUXTRACE

Stabilized feature: The Extended Recovery Facility (XRF) in CICS is stabilized. Consider alternative technologies that provide more flexible high-availability solutions for modern workloads. These solutions include the z/OS Automatic Restart Manager (ARM), CICS data sharing, VTAM persistent sessions, and use of the cross-system coupling facility. See also [Stabilization notices and discontinued functions](#).

Change auxiliary trace options.

Description

You can start, stop, or pause tracing, and specify that automatic switching of the auxiliary data set is to occur when needed. You can use the switch option to change the data set.

Instead of using the **SET** command, you can overwrite your changes on the INQUIRE screen after tabbing to the appropriate field (see [“Working with displays in CEMT” on page 11](#)).

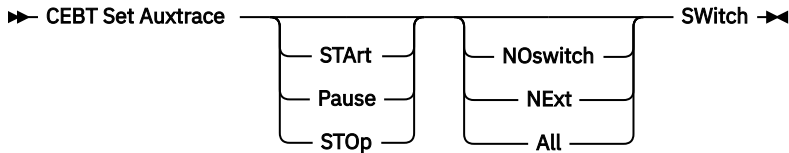
For information about using traces, see [Using CICS trace for problem determination](#).

Syntax

Press the Clear key to clear the screen. There are two ways to start this transaction:

- Type **CEBT SET AUXTRACE** (or suitable abbreviations for the keywords). The resulting display lists the current status, similar to that obtained by using the **CEBT INQUIRE AUXTRACE** command. You can tab to the highlighted or blank fields and overwrite them with the required values.
- Type **CEBT SET AUXTRACE** (or suitable abbreviations for the keywords), followed by one or more attribute settings that you want to change. For example, **CEBT S AUX STO** stops auxiliary trace if it is already running.

CEBT SET AUXTRACE



Options

All

Specifies that automatic switching between the two auxiliary trace data sets is to occur as necessary until the end of this CICS session, without the need for operator intervention.

NExt

Automatic switching of the auxiliary trace data sets is to occur when the current trace data set is full, but not subsequently.

NOswitch

Switching between the auxiliary trace data sets is not to occur without operator intervention.

Pause

Auxiliary tracing is to stop, but the data set is to remain open. A subsequent **START** request causes trace entries to be written immediately following those that were written before the **PAUSE** request.

STArt

CICS is to start auxiliary trace and open the auxiliary trace data set if it is currently closed.

STOp

CICS is to stop auxiliary trace and close the auxiliary trace data set. A subsequent **START** request causes new trace entries to be written at the start of the data set, thereby overwriting the trace entries that were written before the **STOP** request.

SWitch

Specifies that an immediate switch from the current auxiliary trace data set is to be made to the alternate trace data set.

CEBT SET DUMP

Stabilized feature: The Extended Recovery Facility (XRF) in CICS is stabilized. Consider alternative technologies that provide more flexible high-availability solutions for modern workloads. These solutions include the z/OS Automatic Restart Manager (ARM), CICS data sharing, VTAM persistent sessions, and use of the cross-system coupling facility. See also [Stabilization notices and discontinued functions](#).

Change the attributes of a CICS dump data set.

Description

You can use the **CEBT SET DUMP** command to open or close the active CICS dump data set, and specify whether or not the automatic switch to the inactive dump data set is to occur when the active dump data set is full. Instead of using the **SET** command, you can overwrite your changes on the **INQUIRE** screen after tabbing to the appropriate field (see [“Working with displays in CEMT”](#) on page 11).

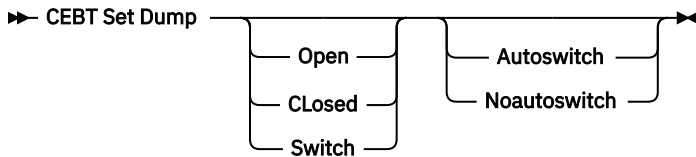
For information about using dumps, see [Using dumps in problem determination](#).

Syntax

Press the Clear key to clear the screen. There are two ways to start this transaction:

- Type **CEBT SET DUMP** (or suitable abbreviations for the keywords). The resulting display lists the current status, similar to that obtained by using the **CEBT INQUIRE DUMP** command. You can tab to the highlighted or blank fields and overwrite them with the required values.
- Type **CEBT SET DUMP** (or suitable abbreviations for the keywords), followed by one or more attribute settings that you want to change. For example, **CEBT S DU A** causes an automatic switch to the inactive dump data set if no automatic switch was previously specified.

CEBT SET DUMP



Options

Autoswitch

The switch occurs **only** when the active dump data set is full, but not subsequently.

Closed

The active CICS dump data set is closed.

Noautoswitch

When the active dump data set is full, there is not to be an automatic switch to the inactive dump data set.

Open

The active CICS dump data set is opened.

Switch

The currently active dump data set is to become inactive, and the currently inactive data set is to become active.

CEBT SET GTFTRACE

Stabilized feature: The Extended Recovery Facility (XRF) in CICS is stabilized. Consider alternative technologies that provide more flexible high-availability solutions for modern workloads. These solutions include the z/OS Automatic Restart Manager (ARM), CICS data sharing, VTAM persistent sessions, and use of the cross-system coupling facility. See also [Stabilization notices and discontinued functions](#).

Change the status of Generalized Tracing Facility (GTF) tracing.

Description

CEBT SET GTFTRACE allows you to switch CICS trace to z/OS GTF on and off. This command is intended for use at terminals that do not support the CETR full-screen tracing transaction.

For information about using GTF trace, see [z/OS Generalized Trace Facility \(GTF\) trace as an alternative CICS trace destination](#).

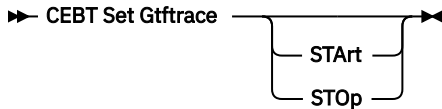
Syntax

Press the Clear key to clear the screen. There are two ways to start this transaction:

- Type **CEBT SET GTFTRACE** (or suitable abbreviations for the keywords). The resulting display lists the current status, similar to that obtained by using the **CEBT INQUIRE GTFTRACE** command. You can tab to the highlighted or blank fields and overwrite them with the required values.

- Type `CEBT SET GTFTRACE` (or suitable abbreviations for the keywords), followed by one or more attribute settings that you want to change. For example, `CEBT S G STO` stops GTF trace if it is already running.

CEBT SET GTFTRACE



Options

STArt

CICS trace to z/OS GTF is started.

STOp

CICS trace to z/OS GTF is stopped.

CEBT SET INTTRACE

Stabilized feature: The Extended Recovery Facility (XRF) in CICS is stabilized. Consider alternative technologies that provide more flexible high-availability solutions for modern workloads. These solutions include the z/OS Automatic Restart Manager (ARM), CICS data sharing, VTAM persistent sessions, and use of the cross-system coupling facility. See also [Stabilization notices and discontinued functions](#).

Switch CICS internal tracing on or off.

Description

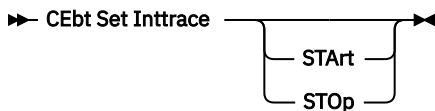
This command is intended for use at terminals that do not support the full-screen tracing transaction CETR.

Syntax

Press the Clear key to clear the screen. There are two ways to start this transaction:

- Type `CEBT SET INTTRACE` (or suitable abbreviations for the keywords). The resulting display lists the current status, similar to that obtained by using the **CEBT INQUIRE INTTRACE** command. You can tab to the highlighted or blank fields and overtype them with the required values.
- Type `CEBT SET INTTRACE` (or suitable abbreviations for the keywords), followed by one or more attribute settings that you want to change. For example, `CEBT S IN STO` stops internal trace if it is already running.

CEBT SET INTTRACE



Options

STArt

CICS internal trace is started.

STOp

CICS internal trace is stopped.

Chapter 4. XRF Diagnostics

XRF takeover trace points

This table lists the XRF takeover trace points, including the trace ID, the module name, the trace level, the trace type, and the data returned by the trace point. XRF takeover trace points range from AP 0A00 to AP 0A15.

Table 1. XRF takeover—signon and signoff				
Point ID	Module	Lvl	Type	Data
AP 0A00	DFHSUSX	AP 1	Entry	1 SUSX parameter list
AP 0A01	DFHSUSX	AP 1	Exit	1 SUSX parameter list
AP 0A02	DFHSUSX	Exc	Unable to produce key from TCTTE	1 ZXTR buffer 2 ZC make key response 3 TCTTE
AP 0A03	DFHSUSX	Exc	Key longer than expected	1 ZXTR buffer before sending to alternate 2 TCTTE
AP 0A04	DFHSUSX	Exc	Unsuccessful locate	1 ZXTR buffer as received by alternate
AP 0A05	DFHSUSX	AP 2	Data	1 TCTTE
AP 0A06	DFHSUSX	Exc	Unable to unlock TCTTE	1 ZXTR buffer as received by alternate
AP 0A07	DFHCSSC	AP 1	Data	1 Number of TCTTEs eligible for signoff during takeover
AP 0A10	DFHXRCF	AP 1	Entry	None
AP 0A11	DFHXRCF	AP 1	Exit	None
AP 0A12	DFHXRCF	AP 1	Resume	None
AP 0A13	DFHXRCF	AP 1	Suspend	None

<i>Table 1. XRF takeover–signon and signoff (continued)</i>				
Point ID	Module	Lvl	Type	Data
AP 0A14	DFHXRCP	AP 1	Command input buffer (CIB) processing	1 CIB 2 Console id
AP 0A15	DFHXRCP	AP 1	Command input buffer (CIB) data	1 CIB

Chapter 5. XRF Messages

DFHH0951

XRF is in use.

Explanation:

CICS is running with XRF=YES specified in the SIT. The extended recovery facility (XRF) support is stabilized.

System action:

The system continues processing.

Operator response:

Report this warning to the system programmer.

System programmer response:

Consider alternative technologies that provide more flexible high-availability solutions for modern workloads. These solutions include the z/OS Automatic Restart Manager (ARM), CICS data sharing, VTAM persistent sessions, and use of the cross-system coupling facility.

For more information about stabilized technologies, capabilities, and functions, see [Stabilization notices and discontinued functions](#).

Applicable releases in Version 6

• 6.2

Chapter 6. XRF Resource Definitions

CLT: command list table

The command list table (CLT) is used by the *extended recovery facility* (XRF) and contains a list of MVS system commands and messages to the operator, to be issued during takeover. Typically, the function of these commands is to tell alternate systems to take over from their active systems in the same MRO-connected configuration.

The command list table also contains the name of the alternate system, with the jobname of the active system that it is allowed to cancel. (See DFHCLT TYPE=LISTSTART FORALT operand.) This provides a security check against the wrong job being canceled, when the alternate system takes over.

In addition, the DFHCLT TYPE=INITIAL macro gives JES routing information, needed to send cancel commands to the appropriate MVS system. If you are using XRF, you **must** have a CLT: it is used only by the alternate CICS system.

For security reasons, link-edit the CLT into a library authorized using APF. For virtual storage constraint relief considerations, link-edit using a MODE control statement specifying AMODE(31),RMODE(ANY). The table should be link-edited as reentrant. The CLT is not loaded into the CICS nucleus.

Your CLT can contain the following statements:

- DFHCLT TYPE=INITIAL
- DFHCLT TYPE=LISTSTART
- DFHCLT TYPE=COMMAND
- DFHCLT TYPE=WTO
- DFHCLT TYPE=LISTEND
- DFHCLT TYPE=FINAL (see [Format of macros](#))

Note: Although the CLT may be shared by a number of alternate systems, take care that MVS is not given too many redundant commands during takeover. For example, in multiregion operation and using one CLT with commands for several regions, region 1 would send valid commands to other regions, but they would in turn send redundant commands to region 1 and to each other.

RST: recoverable service table

Note on terminology: DBCTL refers to the CICS-IMS/ESA® DBCTL (database control) interface.

The recoverable service table (RST) is used for CICS DBCTL XRF (extended recovery facility) support. It contains a description of the DBCTL configuration. On detection of a DBCTL failure, the **active** CICS system uses the RST together with the z/OS subsystem VERIFY to determine the existence of a suitable alternative DBCTL subsystem. The **alternate** CICS system uses the RST to check for the presence of a DBCTL subsystem. For security reasons, the RST should be link-edited into a library authorized using APF. The RST is not loaded as part of the CICS nucleus.

You can code the following macros in a recoverable service table:

- DFHRST TYPE=INITIAL establishes the control section.
- DFHRST TYPE=RSE specifies the start of a recoverable service element (RSE). An RSE consists of a (nonempty) set of identifiers of equivalent DBCTL subsystems, the CICS applids associated with these DBCTL subsystems, and the application identifiers of the CICS systems which use the DBCTL subsystems.
- DFHRST TYPE=SBSYS specifies one of the DBCTL subsystems in an RSE.
- DFHRST TYPE=FINAL concludes the RST (see [Format of macros](#)).

The RST to be used by the system must be defined in the system initialization table by the following system initialization parameter:

➡ DFHSIT — ... — ,RST= { NO }
 { xx } ➡

