

# SYSTP Functions under CICS

The SYSTP utility provides functions that are specific to CICS.

## To invoke specific SYSTP functions under CICS

- In the **Code** field of the SYSTP Main Menu, enter **E** for **Environment-Dependent Functions**.

From the menu displayed then, you can select the functions explained in this section.

### **Note:**

In the remainder of this section, the Natural CICS Interface is also referred to as NCI.

This section covers the following topics:

- Natural User Sessions
  - Natural Roll Facilities
  - Natural Thread Groups
  - Natural Storage Threads
  - NCI Global System Information
  - NCI Generation Options
  - Natural Thread Group Definitions
  - Own Natural User Session
  - CICS Task Information
  - System Administration Facilities
- 

## Natural User Sessions

This function is used to display a list of active user sessions in a Natural environment.

When you invoke this function, the **Natural User Sessions** screen appears, which displays the following information:

Column	Explanation
<b>Term ID</b>	Unique terminal ID within CICS associated with the Natural session.
<b>User ID</b>	Natural user ID of the Natural session.
<b>Tran</b>	CICS transaction ID under which Natural session is currently running. For pseudo-conversational sessions, this is the pseudo-conversational restart transaction ID.
<b>Start Date / Time</b>	Starting date and time of the Natural session.
<b>Last Act</b>	Time of last screen output.
<b>Stat</b>	Session status: see <i>Operational Status</i> .
<b>Program</b>	Natural program currently active.
<b>Library</b>	Natural library in which the user is currently working.

If you press PF10, the display of the session date and time is replaced by the following session resource data:

Column	Explanation
<b>Thrd Grp</b>	Thread group to which user is assigned.
<b>Thread</b>	Name of thread last used.
<b>Roll Fac</b>	Assigned roll facility.

This section covers the following topics:

- Commands for Natural User Sessions
- Natural User Session Statistics

## Commands for Natural User Sessions

In addition to the commands described in *Using SYSTP Utility Screens*, for each item displayed on the **Natural User Sessions** screen, you can execute one of the following line commands.

Line Command	Function
C	<p>Cancel session.</p> <p>Invokes a confirmation window where you can enter YES to mark a session for termination. The session selected is then flagged with number (#) signs that appear in the column <b>User ID</b>. Additionally, for the session concerned, the operational status Purged by Admin appears on the <b>Natural User Session Statistics</b> screen of the user (administrator) who executed the cancel command.</p> <p>The session actually terminates when the owner of the session marked for termination performs the next terminal I/O, Adabas call or external program call. The session owner then receives a corresponding termination notification.</p>
F	<p>Flush session.</p> <p>Invokes a confirmation window where you can enter YES to terminate a session immediately. The session terminated is then flagged with number (#) signs that appear in the column <b>User ID</b>. The user (administrator) who terminated the session receives a termination message when trying to invoke the <b>Natural User Session Statistics</b> screen for the session terminated but still listed on the <b>Natural User Sessions</b> screen. The session owner receives a corresponding termination notification.</p>
R	<p>Reactivate session.</p> <p>Reverses a C (Cancel) command as described earlier. The R command removes the termination flags set for a session and resets the session status to active. Note that you cannot reactivate a session that has been terminated with the F (Flush) command described above.</p>
W	<p>Wake up session.</p> <p>Reactivates immediately a session that has been suspended by a CMROLL call with a non-zero wait interval specified with the MAXROLL profile parameter (see the <i>Parameter Reference</i> documentation). See also the example program SUSPEND supplied in the Natural system library SYSEXTP.</p>

 **To reduce the number of list items by specifying selection criteria**

- On the **Natural User Sessions** screen, press PF4.

The **Selection for User Sessions** window appears where you can select user sessions by inactivity date and time, inactivity time interval, Natural server ID, CICS system ID, terminal ID, user ID or transaction ID.

Inactivity date and time and inactivity interval list all sessions that were not active before the date and time specified or before the time interval specified.

A date must be specified in the format *YYYY-MM-DD* (*YYYY* = year, *MM* = month, *DD* = day).  
The time must be specified in the format *HH:II:SS* (*HH* = hours, *II* = minutes, *SS* = seconds).

To specify a range of IDs, use the asterisk (\*) as a leading or trailing character or use the question mark (?) as a wildcard character. See also *Examples of Name Ranges*.

## Natural User Session Statistics

For each session displayed on the **Natural User Sessions** screen shown above, additional information can be displayed by invoking the **Natural User Session Statistics** screen with the S or U line command. The following section describes the information provided on this screen.

All sizes on the **Natural User Session Statistics** screen are in KB unless otherwise indicated in the field descriptions below.

Field	Explanation
<b>Started</b>	Day, date and time when the session was started.
<b>Last Actions</b>	Date and time when the user was active last.
<b>User</b>	Natural user ID as assigned by the Natural system variable *USER (see the <i>System Variables</i> documentation).
<b>at Terminal</b>	ID of the terminal associated with the Natural session as assigned by the Natural system variable *INIT-ID (see the <i>System Variables</i> documentation).
<b>Transid</b>	Pseudo-conversational transaction ID under which Natural is running.
<b>Task # in</b>	Task number assigned by CICS followed by the ID of the CICS region.
<b>Cur Strg Used</b>	Current amount of storage used by this session.
<b>Max Strg Used</b>	Maximum amount of storage ever used by this session.
<b>Thread Size</b>	Size of this thread.
<b>Thread Name</b>	Name of the thread used last. For threads allocated by using GETMAIN, the thread name is composed of the prefix NSCP followed by the terminal ID.
<b>Thread Group</b>	Name of the associated thread group (triggered by starting the transaction ID).
<b>of Type</b>	Type of thread used for thread group:  SHR      Permanent storage threads.  GETM     Storage threads allocated by using GETMAIN.  NONE     No threads used; all Natural storage requests are passed to CICS.
<b>Natural Library</b>	Natural library ID as assigned by the Natural system variable *LIBRARY-ID (see the <i>System Variables</i> documentation).
<b>Natural Program</b>	Name of the Natural program currently used by the session as assigned by the Natural system variable *PROGRAM (see the <i>System Variables</i> documentation).
<b>Line No.</b>	Line number in the Natural program currently used by the session.

Field	Explanation
<b>Operational Status</b>	See <i>Operational Status</i> in the following section.
<b>Roll Facility</b>	Name of associated roll facility.
<b>Roll Recs (Last)</b>	Number of records written to roll facility for last roll-out.
<b>Roll Recs (Max)</b>	Maximum number of records ever written during roll-out.
<b>Roll Record Size</b>	Record size of this roll facility.
<b>Slot Size</b>	Number of records required to roll-out a thread completely.
<b>Restart Rec. No.</b>	<p>Number of the record that contains roll-out control information; this record must be rolled in first.</p> <p><b>VSAM Roll Files:</b></p> <p>The following applies to VSAM roll files only.</p> <p>The relationship between restart record number (RecNum), slot number (SN) and slot size (SZ) is:</p> $\text{RecNum} = (\text{SN}-1) * \text{SZ} + 2$ <p>or</p> $\text{SN} = (\text{RecNum}-2) / \text{SZ} + 1$
<b>Slot Number</b>	Number of slot in VSAM roll file belonging to this session (for VSAM only). See also <i>VSAM Roll Files</i> in <b>Restart Rec. No.</b> above.
<b>Compressed Length</b>	Amount of relevant storage currently swapped/rolled out.
<b>Session Resumes</b>	Total number of session resumes.
<b>Swap-Ins</b>	Number of session resumes with swapping in from swap pool.
<b>Thread Switches</b>	Number of session resumes with swapping/rolling into a thread which is different to the one the session had been in before.
<b>Roll-Ins</b>	Number of session resumes with rolling in from roll facility.
<b>Region Switches</b>	Number of CICS region switches.
<b>OpSys Switches</b>	Number of operating system image switches in a z/OS Parallel Sysplex environment.

## Operational Status

This field indicates any of the following operational statuses:

Status	Abbreviation	Description
Active	Act	Currently active.
Inactive	Ina	Inactive, still in thread.
Swapped	Swp	Swapped, in swap pool.
Rolled out	Rld	Rolled out, in roll facility.
Wait (Init)	WtI	Waiting for thread on session initialization.
Wait (Resume)	WtR	Waiting for thread on session resume.
Initializing	Int	Initializing session.
Resuming	Res	Resuming session, in thread, not active yet.
Suspending	Sus	Suspending session.
Terminating	Trm	Terminating session.
Swapping out	Swo	Session swapping out.
Swapping in	Swi	Session swapping in.
Rolling out	Out	Rolling out from thread or swap pool.
Rolling in	In	Rolling in from roll facility.

The following additional information can appear in **Operational Status**:

Status	Description
Conversational	Dialog-oriented session (PSEUDO=OFF) as opposed to pseudo-conversational/transaction-oriented session.  See also the PSEUDO profile parameter described in the <i>Parameter Reference</i> documentation.
Forced Conversational	Last screen I/O of a PSEUDO=ON session was conversational.  See also the PSEUDO profile parameter described in the <i>Parameter Reference</i> documentation.
No-Roll	Session is not allowed to roll.
Compressed	Session is compressed (in swap pool or roll facility).
Thread Switched	Thread currently used is not the same as used before.
Thread Locked	Session kept from switching threads (for example, RELO=OFF); can also force No-Roll/Conversational status.  See also the RELO profile parameter described in the <i>Parameter Reference</i> documentation.
Purged by Admin	Session canceled by administrator (flag set).
Spool Task	Task is a spool/print task.
Asynchronous Task	Task is an asynchronous task, not bound to a terminal.

## Natural Roll Facilities

This function is used to display which swap files are available for rolling out user work areas to make room in the swap pool for active users. These swap files are known as roll facilities.

When you invoke this function, the **Natural Roll Facilities** screen appears for the current CICS region (as indicated by the CICS ID in the screen title). For each roll facility, the following information is displayed:

Column	Explanation
<b>Facility Name</b>	TEMPSTOR is used for auxiliary temporary storage, MAINSTOR for main temporary storage, and remaining file names are VSAM roll files as defined in the CICS file control table (FCT). none denotes that no roll facility is used.
<b>Record Size</b>	Record size of this roll facility.
<b>Slot Size</b>	Number of records required to roll out a thread completely (maximum thread size divided by record size, rounded up).
<b>No. of Slots</b>	Number of sessions which fit into this roll file (number of file records divided by slot size, rounded down); applies to VSAM roll files only.
<b>Facility Users Cur / Max</b>	Current ( <b>Cur</b> ) and maximum ( <b>Max</b> ) number of user sessions assigned to this roll facility.
<b>Roll Counts Out / In</b>	Number of session roll operations from or into this roll facility.
<b>Status</b>	Indicates Full if the facility users equal the number of available slots.

In addition to the commands described in *Using SYSTP Utility Screens*, the **Natural Roll Facilities** screen provides the following PF key and corresponding line command:

PF Key	Line Command	Function
PF4	U	Invokes the <b>Natural User Sessions</b> screen (see the relevant section) for the marked roll facility which displays all Natural user sessions that use this facility.

## Natural Thread Groups

This function is used to display which thread groups are available to Natural.

When you invoke this function, the **Natural Thread Groups** screen appears for the current CICS region (as indicated by the CICS ID in the screen title). For each thread group, the following information is displayed on this screen:



Column	Explanation
<b>Group Name</b>	Thread group name.
<b>Group Users Cur / Max</b>	Current ( <b>Cur</b> ) and maximum ( <b>Max</b> ) number of users assigned to this thread group.
<b>Thread Type</b>	Type of thread used: see <b>Natural User Session Statistics</b> .
<b>TCBs</b>	Maximum number of sessions concurrently active.
<b>Thread Size</b>	Thread group's common thread size.
<b>Strg Used</b>	Maximum storage ever used by a session that uses this thread group.
<b>Queue Sizes Cur / Max / AtMax</b>	Current ( <b>Cur</b> ) and maximum ( <b>Max</b> ) queue size for the thread group's central wait queue and the number of times the maximum was reached ( <b>AtMax</b> ).  Only applies if the parameter <b>THREADS</b> has been defined as greater than zero for this thread group. See also <i>THREADS - Number of Threads or Tasks Per Thread Group</i> in the <i>TP Monitor Interfaces</i> documentation.
<b>VSAM Aux / Main</b>	Roll facilities defined for group; CICS temporary storage (auxiliary or main) always backs up VSAM if VSAM roll files are not available or full.

## Commands for Natural Thread Groups

In addition to the commands described in *Using SYSTP Utility Screens*, the **Natural Thread Groups** screen provides the following PF keys and corresponding line commands:

PF Key	Line Command	Function
PF4	U	Displays all Natural user sessions (see the relevant section) that use the thread group marked with the cursor/command.
PF10	T	Displays Natural storage threads (see below) for the thread group marked with the cursor/command.
PF11	D	Displays Natural thread group definitions (see the relevant section) for the thread group marked with the cursor/command.

## Natural Storage Threads

This function is used to display information about the storage threads in the Natural environment.

When you invoke this function, the **Natural Storage Threads** screen appears for the current CICS region (as indicated by the CICS ID in the screen title). The screen displays the following information:

Column	Explanation
<b>Thread Name</b>	Name of the thread.
<b>Grp No.</b>	Number of the group to which this thread belongs.
<b>Thrd Size</b>	Usable thread size.
<b>Strg Used</b>	Maximum storage ever used by a session that uses this thread.
<b>Use Count</b>	Number of times this thread has been selected for processing.
<b>Roll-Ins Log. / Phys.</b>	<p>Number of roll-in operations:</p> <p><b>Log.</b>                      Session resumes.</p> <p><b>Phys.</b>                      Roll-in from roll facility.</p>
<b>Queue Sizes Cur / Max / AtMax</b>	<p>Number of users waiting in the queue:</p> <p><b>Cur</b>            Current number of users queuing on thread. If this number <i>n</i> is greater than 1, <i>n</i> minus 1 users are waiting.</p> <p><b>Max</b>            Maximum queue count for this thread.</p> <p><b>AtMax</b>        Number of times at maximum.</p>
<b>Term ID</b>	Terminal ID belonging to the Natural session whose data are in this thread.
<b>Task No.</b>	ID of CICS task currently active in this thread. If no ID is displayed, no session is active in this thread.

## Commands for Natural Storage Threads

In addition to the commands described in *Using SYSTP Utility Screens*, the **Natural Storage Threads** screen provides the following line commands and PF key:

Line Command	PF Key	Function
C	-	See <i>Cancel session</i> in <i>Natural User Sessions</i> .
D	PF11	Displays Natural thread group definitions (see the relevant section).
F	-	See <i>Flush session</i> in <i>Natural User Sessions</i> .
G	PF10	Displays Natural thread group (see the relevant section).
R	-	See <i>Reactivate session</i> in <i>Natural User Sessions</i> .
U	-	Displays statistics about the Natural user sessions currently active in the thread. See also <i>Natural User Session Statistics</i> .

## NCI Global System Information

This function is used to display data on the system directory.

When you invoke this function, the **Global System Information** screen appears for the current CICS region (as indicated by the CICS ID in the screen title). The screen provides the following information:

Field	Explanation
<b>Natural User Sessions</b>	Current ( <b>Cur</b> ) and maximum ( <b>Max</b> ) number of Natural sessions in the system.
<b>Concurrent SCP Active</b>	Current ( <b>Cur</b> ) and maximum ( <b>Max</b> ) number of concurrent system control program (SCP) requests.  SCP requests are: session initialization, session suspension, session resumption and session termination.
<b>SIR Block Extensions</b>	Current ( <b>Cur</b> ) and maximum ( <b>Max</b> ) number of local SIR block extensions.
<b>Slots in 1st SIR Block</b>	Number of user sessions that fit into the primary user control block (first <i>USERS</i> subparameter in <i>NCMDIR</i> macro; see <i>USERS - Session Information Record*</i> ).
<b>Slots in SIR Block Extns</b>	Number of user sessions that fit into a secondary user control block (second <i>USERS</i> subparameter in <i>NCMDIR</i> macro; see <i>USERS - Session Information Record*</i> ).
<b>VSAM Roll File Slots</b>	Number of VSAM roll files to check ( <i>ROLLFLS</i> ).
<b>Possible Roll Facilities</b>	Number of VSAM roll files plus two for CICS ( <i>MAINSTOR</i> and <i>TEMPSTOR</i> ).
<b>Thread Groups</b>	Number of thread groups determined by evaluating all <i>NCMTGD</i> macro specifications at system startup. See also <i>NCMTGD Macro Parameters*</i> .
<b>System Recoveries</b>	Number of corrections of statistics counts and/or control block chain.
<b>Size of DIR Extension (B)</b>	Number of bytes used at system startup for thread control blocks and VSAM roll file online directories.
<b>Operating System Host ID</b>	Name of the operating system image.

Field	Explanation
<b>Assembled Last</b>	Date and time when the system directory source module was last assembled.
<b>CICS System ID</b>	ID of the CICS region.
<b>Available Resources:</b> <b>Swap Pool</b> <b>Local Buff. Pool</b> <b>Sort Buffer Pool</b> <b>DL/I Buffer Pool</b> <b>Edit Buffer Pool</b> <b>Monitor Pool</b> <b>RNM Buffer Pool</b>	Resources available in the current NCI system environment: swap pools, Natural buffer pools, monitor buffer pools and RNM buffer pools.  Type, size (in KB) and location (below or above the 16 MB line) of all buffer pools supported.
<b>Max Thread Size</b>	Largest thread size across all valid thread groups.
<b>VSAM Roll Files</b>	Number of VSAM roll files.
<b>Main/Aux TempStor</b>	Indicates whether CICS main or auxiliary temporary storage is available for the Natural/CICS roll facilities.
<b>Session Logging</b>	Indicates whether the Natural/CICS log destination is defined in the CICS DCT (destination control table) and whether the log destination is available. The log destination for sessions is defined with the LOGDEST* parameter of the NCMPRM macro.
<b>Message Logging</b>	Indicates whether the Natural/CICS error message log destination is defined in the CICS DCT and whether the log destination is available.  The log destination for messages is defined with the MSGDEST* parameter of the NCMPRM macro.
<b>Message Switching</b>	Indicates whether the message switching transaction ID is defined in CICS and whether the transaction ID is available. The transaction for switching messages is defined with the MSGTRAN* parameter of the NCMPRM macro.  If a transaction ID is not available, a SYSTP session flush (see <i>Flush session</i> in <i>Natural User Sessions</i> ) is not possible.
<b>Console Terminal</b>	Indicates whether the CICS console terminal for Natural/CICS is available. The console terminal ID is defined with the CONSOLE* parameter of the NCMPRM macro.

\* described in the *TP Monitor Interfaces* documentation

## NCI Generation Options

This function is used to display generation parameter settings for Natural running under CICS. The values of these parameters are determined in the macro NCMPRM, which is part of the NCIPARM parameter module created during installation.

When you invoke this function, the **Generation Options** screen appears for the current CICS region (as indicated by the CICS ID in the screen title). This screen displays an overview of the generation option settings for Natural.

Behind each parameter setting in the **Generation Options** screen is a parameter of the NCMPRM macro. These parameter names can be viewed by pressing PF10. Press PF10 to toggle between the screen containing the parameter names and explanations of the parameters.

### **Related Topics:**

- *Installing the Natural CICS Interface* in the *Installation* documentation
- *NCMPRM Macro Parameters* in the *TP Monitor Interfaces* documentation

## **Natural Thread Group Definitions**

This function is used to display Natural thread group definitions.

When you invoke this function, the **Natural Thread Group Definitions** screen appears for the current CICS region (as indicated by the CICS ID in the screen title). This screen displays the following information:

Column	Explanation
<b>Grp No.</b>	Thread group number.
<b>Group Type</b>	Type of group definition:  SHR      Permanent storage threads to be used for thread group.  GETM     Storage threads allocated by using GETMAIN.  none      No threads to be used; all Natural storage requests are passed to CICS.  Alias     Thread group redefinition to assign other primary roll facility triggered by transaction ID/task request key.
<b>Roll Fac.</b>	Primary roll facility assigned:  VSAM, Aux (auxiliary temporary storage), Main (main temporary storage) or none (no roll facility assigned).
<b>Thread Size</b>	Thread storage GETMAIN size (for thread group types GETM and SHR).
<b>TCBs</b>	Maximum number of Natural sessions concurrently active in this thread group.
<b>Transaction IDs / Task Request Keys</b>	As defined in the CICS transaction definitions for Natural.

## Commands for Natural Thread Group Definitions

In addition to the commands described in *Using SYSTP Utility Screens*, the **Natural Thread Group Definitions** screen provides the following PF keys and corresponding line commands:

PF Key	Line Command	Function
PF4	S	Displays thread group definitions for the thread group marked with the cursor/command.
PF10	G	Displays Natural storage threads (see the relevant section) associated with the thread group marked with the cursor/command.

## Own Natural User Session

This function invokes the **Natural User Session Statistics** screen described in *Natural User Session Statistics*.

## CICS Task Information

This function invokes the **SYSTP Task Information** window, which displays status information about the Natural task in a CICS environment.

## System Administration Facilities

This function is used to access facilities for debugging and tracing.

When you invoke this function, a menu appears with the following functions:

- Trace Facilities
- Debugging Facilities
- System Snapshot for Logging
- Reset System Highwater Marks
- Common Dynamic Parm Control Information
- Applied NCI Source Changes
- Applied NCI Zaps

### Trace Facilities

This function reserved for internal use by Software AG personnel only.

### Debugging Facilities

This function reserved for internal use by Software AG personnel only.

### System Snapshot for Logging

This function provides complete SYSTP batch reports (see also *SYSTP in Batch for CICS Sessions*) with information about all SCP facilities, regardless of whether they have been used or not. Such facilities are:

- Thread groups
- TYPE=SHR threads
- Roll facilities

All this information is logged to the Natural/CICS log file, if available.

## Reset System Highwater Marks

This function comprises the system snapshot function previously described. In addition, all system highwater marks can be reset, for example:

- The number of user sessions.
- Every thread group and roll facility.
- The number of UCB block extensions.
- The amount of storage.
- All thread groups and TYPE=SHR threads.
- All wait queue values and counts.
- All roll facility roll counts.

## Common Dynamic Parms Control Information

This function displays common dynamic profile parameters as retrieved from the PRMDEST destination, if available. See also *PRMDEST - Name of the Natural CICS Profile Parameter Input Destination* described in the *TP Monitor Interfaces* documentation.

## Applied NCI Source Changes

This function invokes the **Applied NCI Source Changes** screen for the current CICS region (as indicated by the CICS ID in the screen title). This screen displays the numbers of all source changes that have been applied to the current Natural TP environment.

## Applied NCI Zaps

This function invokes the **Applied NCI Zaps** screen for the current CICS region (as indicated by the CICS ID in the screen title). This screen displays the numbers of all Zaps that have been applied to the current Natural TP environment.