

SYSTP Functions under CICS

This section provides information on the SYSTP utility functions available under CICS.

To invoke the SYSTP functions under CICS

- On the Natural SYSTP Utility Main Menu, in the Code field, enter **E** for Environment-Dependent Functions.

On the menu displayed then, you can select the following functions which are explained in this section.

- 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
- Applied NCI Zaps

Note:

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

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 displaying the following information:

Column	Explanation
Term ID	Unique terminal ID within CICS associated with the Natural session.
User ID	Natural user ID of the Natural session.
Tran	CICS transaction ID under which Natural session is currently running. For pseudo-conversational sessions, this is the pseudo-conversational restart transaction ID.
Start Date/Time	Starting date and time of the Natural session.
Last Act	Time of last screen output.
Stat	Session status: see Operational Status below.
Program	Natural program currently active.
Library	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
Thrd Grp	Thread group to which user is assigned.
Thread	Name of thread last used.
Roll Fac	Assigned roll facility.

The sections below cover the following information:

- Commands for Natural User Sessions
- Natural User Session Statistics

Commands for Natural User Sessions

For each item displayed on the Natural User Sessions screen, you can execute any of the commands described below.

To execute commands for list items

- In the **M** column, position the cursor at the input field(s) next to the item(s) desired, and enter any of the line commands described below.

Command	Function
C	Cancel session. 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 User ID. Additionally, for the session concerned, the operational status "Purged by Admin" appears on the Natural User Session Statistics screen (see below) of the user (administrator) who executed the cancel command. 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 receives a corresponding termination notification.
F	Flush session. 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 User ID. The user (administrator) who terminated the session receives a termination message when trying to invoke the Natural User Session Statistics screen (see below) for the session terminated but still listed on the Natural User Session screen. The session owner receives a corresponding termination notification.
R	Reactivate session. 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.
S	Invoke the Natural User Session Statistics screen with additional information on the individual user session(s) selected as described below.
U	
W	Wake up session. Reactivates immediately a session that has been suspended by a CMROLL call with a non-zero wait interval specified. See also the example program SUSPEND supplied in the Natural system library SYSEXTP.

To limit 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, for example:

AB* , *BC, A?B

Natural User Session Statistics

For each session displayed in the Natural User Sessions screen shown above, additional information can be displayed by invoking the Natural User Session Statistics screen. The following section describes the information provided on this screen.

Note:

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

Field	Explanation
Started	Day, date and time when the session was started.
Last Actions	Date and time the user was active last.
User	Natural user ID as assigned by the Natural system variable *USER.
at Terminal	ID of the terminal associated with the Natural session as assigned by the Natural system variable *INIT-ID.
Transid	(Pseudo-conversational) transaction ID under which Natural is running.
Task # in	Task number assigned by CICS followed by the ID of the CICS region.
Cur Strg Used	Current amount of storage used by this session.
Max Strg Used	Maximum amount of storage ever used by this session.
Thread Size	Size of this thread.
Thread Name	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.
Common Thread Size	This group's common thread size.
Thread Group	Name of the associated thread group (triggered by starting the transaction ID).
of Type	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.
Natural Library	Natural library ID as assigned by the Natural system variable *LIBRARY-ID.

Field	Explanation
Natural Program	Name of the Natural program currently used by the session as assigned by as assigned by the Natural system variable *PROGRAM.
Line No.	Line number in the Natural program currently used by the session.
Operational Status	See Operational Status below.
Roll Facility	Name of associated roll facility.
Roll Recs (Last)	Number of records written to roll facility for last roll-out.
Roll Recs (Max)	Maximum number of records ever written during roll-out.
Roll Record Size	Record size of this roll facility.
Slot Size	Number of records required to roll-out a thread completely.
Restart Rec. No.	Number of the record that contains roll-out control information; this record must be rolled in first. VSAM Roll Files The following information applies to VSAM roll files only: The relationship between restart record number (RecNum), slot number (SN) and slot size (SZ) is: $\text{RecNum} = (\text{SN}-1) * \text{SZ} + 2$ or $\text{SN} = (\text{RecNum}-2) / \text{SZ} + 1$
Slot Number	Number of slot in VSAM roll file belonging to this session (for VSAM only). See also VSAM Roll Files in Restart Rec. No. above.
Compressed Length	Amount of relevant storage currently swapped/rolled out.
Session Resumes	Total number of session resumes.
Swap-Ins	Number of session resumes with swapping in from swap pool.
Thread Switches	Number of session resumes with swapping/rolling into a thread which is different to the one the session had been in before.
Roll-Ins	Number of session resumes with rolling in from roll facility.
Region Switches	Number of CICS region switches.
OpSys Switches	Number of operating system image switches in a 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.
Forced Conversational	Last screen I/O of a PSEUDO=ON session was conversational.
No-Roll	Session is not allowed to roll.
Compressed	Session is compressed (in swap pool or roll facility).
Thread Switched	The thread currently used is not the same as used before.
Thread Locked	Session kept from switching threads (for example, RELO=OFF); may also force No-Roll/Conversational status.
Purged by Admin	Session canceled by administrator (flag set).
Spool Task	The task is a spool/print task.
Asynchronous Task	The 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
Facility Name	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).
Record Size	Record Size of this roll facility.
Slot Size	Number of records required to roll out a thread completely (maximum thread size divided by record size, rounded up).
No. of Slots	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.
Facility Users Cur/Max	Current (Cur) and maximum (Max) number of user sessions assigned to this roll facility.
Roll Counts Out/In	Number of session roll operations from or into this roll facility.
Status	Indicates Full if the facility users equal the number of available slots.

 **To display all Natural user sessions that use a roll facility**

- In the **M** column, position the cursor at the input field(s) next to the roll facility (facilities) desired, and enter the line command **U** or press PF4.

The Natural User Sessions screen appears as described in the relevant section.

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
Group Name	Thread group name.
Group Users Cur/Max	Current (Cur) and maximum (Max) number of users assigned to this thread group.
Thread Type	Type of thread used: see Natural User Session Statistics above.
TCBs	Maximum number of sessions concurrently active.
Thread Size	Thread group's common thread size.
Strg Used	Maximum storage allocated to any thread in this group.
Queue Sizes Cur/Max/atMax	Current (Cur) and maximum (Max) queue size for the thread group's central wait queue and the number of times the maximum was reached (atMax). Only applies if the parameter THREADS has been defined as greater than zero for this thread group.
VSAM/Aux/Main	Roll facilities defined for group; CICS temporary storage (auxiliary or main) always backs up VSAM if VSAM roll files are not available or full.

 **To display additional information on a thread group**

- In the **M** column, position the cursor at the input field(s) next to the item(s) desired, and enter any of the following line commands or press the corresponding PF key:

Command	PF Key	Function
D	PF11	Display Natural thread group definitions (see the relevant section).
T	PF10	Display Natural storage threads (see below) in thread group.
U	PF4	Display all Natural user sessions (see the relevant section) that use the thread group selected.

Natural Storage Threads

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

 **To display additional information on Natural storage threads**

- In the **M** column, position the cursor at the input field(s) next to the item(s) desired, and enter any of the following line commands or press the corresponding PF key (if available):

Command	PF Key	Function
C		See "Cancel session" in Natural User Sessions.
D	PF11	Display Natural thread group definitions (see the relevant section).
F		See "Flush session" in Natural User Sessions.
G	PF10	Display Natural thread group (see the relevant section).
R		See "Reactivate session" in Natural User Sessions.
U	PF4	Display statistics on the Natural user sessions currently active in the thread. See also Natural User Session Statistics.

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
Natural User Sessions	Current and maximum number of Natural sessions in the system.
Concurrent SCP Active	Current and maximum number of concurrent system control program (SCP) requests (INIT/SUSP/RESM/TERM).
SIR Block Extensions	Current and maximum number of local SIR block extensions.
Slots in 1st SIR Block	Number of user sessions that fit into the primary user control block (first USERS subparameter in NCMDIR macro).
Slots in SIR Block Extns.	Number of user sessions that fit into a secondary user control block (second USERS subparameter in NCMDIR macro).
VSAM Roll File Slots	Number of VSAM roll files to check (ROLLFLS).
Possible Roll Facilities	Number of VSAM roll files plus two for CICS TEMPSTOR.
Thread Groups	Number of thread groups determined by evaluating all NCMTGD macro specifications at system startup.
System Recoveries	Number of corrections of statistics counts and/or control block chain.
Size of DIR Extension (B)	Number of bytes used at system startup for thread control blocks and VSAM roll file online directories.
Operating System Host ID	Name of the operating system image.
CICS System ID	The ID of the CICS region.

Field	Explanation
Available Resources: Swap Pool Local Buff. Pool Sort Buffer Pool DL/I Buffer Pool Edit Buffer Pool Monitor Pool	Resources available in the current NCI system environment: swap pools, Natural buffer pools and monitor buffer pools. Type, size (in KB) and location (below or above the 16 MB line) of all buffer pools supported.
Max Thread Size	Largest thread size across all valid thread groups.
VSAM Roll Files	Indicates whether VSAM roll files are available; that is, existing in VSAM, formatted and defined in the CICS FCT.
Main/Aux TempStor	Indicates whether CICS main or auxiliary temporary storage is available for the Natural/CICS roll facilities.
Session Logging	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.
Message Logging	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.
Message Switching	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. Note: If this transaction ID is not available, a SYSTP session flush (see "Flush session" in Natural User Sessions) is not possible.
Trace Active	Indicates whether the Natural/CICS trace function is currently active; see also System Administration Facilities.
Assembled Last	Date and time when the system directory source module was last assembled.

* The NCMPRM macro parameters LOGDEST, MSGDEST and MSGTRAN are described in Natural CICS Generation Parameters, Natural under CICS, in the Natural 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 Natural/CICS 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. Use PF10 to toggle between the screen containing the parameter names and explanations of the parameters.

Related Topics:

Installing the Natural CICS Interface - Natural Installation Guide for Mainframes
 NCMPRM Macro Parameters - Natural CICS Generation Parameters, Natural under CICS, Natural 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
Grp No.	Thread group number.
Group Type	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.
Roll Fac.	Primary roll facility assigned: VSAM, TEMPSTOR, MAINSTOR or "none".
Thread Size	Thread storage GETMAIN size (for thread group types GETM and SHR).
No. Thrds.	Maximum number of Natural sessions concurrently active in this thread group.
Transaction IDs	As defined in CICS Transaction Definition.
Task Request Keys	As defined in CICS Transaction Definition.

 **To display additional information on a thread group definitions**

- In the **M** column, position the cursor at the input field(s) next to the item(s) desired, and enter any of the following line commands or press the corresponding PF key:

Command	PF Key	Function
G	PF10	Display Natural storage threads (see the relevant section) associated with the thread group.
S	PF4	Display thread group definitions for current thread group only.

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 on 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 is displayed which offers you the following functions:

- Trace Facilities
(reserved for internal use by Software AG only)
- Debugging Facilities
(reserved for internal use by Software AG only)
- System Snapshot for Logging
- Reset System Highwater Marks

The section below contains information on:

- System Snapshot for Logging
- Reset System Highwater Marks

System Snapshot for Logging

This function provides complete SYSTP batch reports (see also SYSTP in Batch for CICS Sessions) with information on 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.

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.