

Broker Command and Information Services

EntireX Broker provides two internal services: Command Service and Information Services that can be used to administer and monitor the EntireX Broker. The command service allows you to issue a set of Broker commands; the information services provide you with various statistics to better administer and tune your Broker. Because these services are implemented internally, nothing has to be started or configured. You can use these services immediately after starting EntireX Broker.

This chapter covers the following topics:

- CIS Overview Table
- Modes of Requesting the Services
- ETBCMD: Executable Command Requests
- ETBINFO: Returnable Information Requests

See also *Broker CIS Data Structures*.

CIS Overview Table

EntireX Broker provides these predefined internal services:

- **Command Service**
Provides a facility to issue commands against the Broker (e.g. SHUTDOWN etc.).
- **Information Services**
Provides a query mechanism to obtain various types of information on the Broker, which is helpful for administration and tuning.

Since these services are implemented internally, nothing has to be started, configured or defined in the Broker attribute file. You can use them immediately after starting the Broker. They can be requested as follows:

| Mode of Request | Tools | Services | Requirements |
|---------------------------------|--|--|--|
| <i>User-Written Interface</i> | application program | <ul style="list-style-type: none"> ● INFO ● USER-INFO ● CMD ● PARTICIPANT-SHUTDOWN ● SECURITY-CMD | <ul style="list-style-type: none"> ● request structures |
| <i>Graphical User Interface</i> | System Management Hub | <ul style="list-style-type: none"> ● INFO ● USER-INFO ● CMD ● SECURITY-CMD | <ul style="list-style-type: none"> ● none |
| <i>Command-line Utilities</i> | ETBINFO utility | <ul style="list-style-type: none"> ● INFO ● USER-INFO | <ul style="list-style-type: none"> ● profile ● command-line parameters |
| | ETBCMD utility | <ul style="list-style-type: none"> ● CMD ● PARTICIPANT-SHUTDOWN ● SECURITY-CMD | <ul style="list-style-type: none"> ● command-line parameters |
| | System Management Hub (batch interface argbatch) | <ul style="list-style-type: none"> ● INFO ● USER-INFO ● CMD ● SECURITY-CMD | <ul style="list-style-type: none"> ● command-line parameters |

Applicable operating systems: z/OS, UNIX and Windows.

Description of Services

INFO and USER-INFO

- INFO is the full information service. Specify it for the full information service. All clients, servers and conversations are listed.
- USER-INFO is limited to your user-specific information. Specify it for limited information service. Only the user's own resources are listed.

CMD, PARTICIPANT-SHUTDOWN and SECURITY

- CMD is the full command service.
- PARTICIPANT-SHUTDOWN is limited to shutting down participants.
- SECURITY-CMD is limited to EntireX Security-related commands.

Modes of Requesting the Services

Use one of these three modes to request a service:

- Command-line Utilities
- Graphical User Interface
- User-Written Interface

The method for requesting these services is the same as the method for requesting any other service. For both types of services, an application issues a `SEND` command with appropriate data and retrieves a reply. The request itself is specified within the `SEND` buffer; the reply - if there is one - is specified in the `RECEIVE` buffer.

For Information Services requests, `RECEIVE` operations must be repeated until the Information Service indicates the end of data with an `EOC` return message.

Command-line Utilities

Software AG provides three command-line utility programs for use with EntireX Broker. All utility programs use command-line parameters that specify various options and information to be built into a request. These utility programs are:

- **ETBINFO**
Queries the Broker for different types of information, generating an output text string with basic formatting. This text output can be further processed by script languages (or elsewhere). `ETBINFO` uses data descriptions called profiles to control the type of data that is returned for a request. `ETBINFO` is useful for configuring and administering EntireX Broker efficiently - e.g., how many users are to run concurrently and whether the number of specified message containers is large enough.

See *ETBINFO* under `z/OS` | `UNIX` | `Windows` | `z/VSE` for profiles, examples and utility parameters.

- **ETBCMD**
Allows you to take actions - e.g., purge a unit of work, stop a server, shut down a Broker - against EntireX Broker.

See *ETBCMD* under `z/OS` | `UNIX` | `z/VSE` for utility parameters.

- **ARGBATC**
This is the command line utility of SMH (see *Graphical User Interface*). It allows you to perform various administrative commands over a broker. You can access Broker Command and Information Services with a subset of all available commands.

See *Description of argbatch Commands*.

Version Information

- The `ETBINFO` and `ETBCMD` CIS command-line utilities are compatible with all versions of EntireX Broker.
- Display keywords applying to a specific version of Broker will not be returned when a call is made to any older version of Broker.

Graphical User Interface

Software AG provides a graphical user interface, the System Management Hub (SMH), for displaying information on the Broker and/or executing administrative functions.

Many of the capabilities of the Broker CIS can be accessed through the SMH, which is Software AG’s cross-product and cross-platform product management framework. The EntireX-specific SMH agents are installed automatically when the EntireX software is installed under UNIX or Windows. SMH is not installable under z/OS.

User-Written Interface

If you access the Command and Information Services through a user-written application, you must use a defined protocol. This protocol describes the structures needed to communicate with the service(s) so that the request is correctly interpreted by the Broker.

See *Writing Applications: Command and Information Services* and *Broker CIS Data Structures*.

ETBCMD: Executable Command Requests

The following command requests can be issued, using ETBCMD. All the functions listed in this table are applicable to all three request modes; see *Modes of Requesting the Services*.

Note:

Version numbers in this table refer to the interface version and not to the Broker version.

| Command Request | Comment | CIS Interface Version |
|---------------------|---|-----------------------|
| ALLOW-NEWUOWMSG | New UOW messages are allowed. | 3 |
| CLEAR-CMDLOG-FILTER | Remove the specified command log filter. | 5 |
| CONNECT-PSTORE | Connects the persistent store. See <i>Availability of Persistent Store</i> . | 4 |
| DISABLE-ACCOUNTING | Disables accounting. Accounting records are discarded until accounting is enabled. | 5 |
| DISABLE-CMDLOG | Disable command logging. | 5 |
| DISABLE-DYN-WORKER | Disable the DYNAMIC-WORKER-MANAGEMENT. DYNAMIC-WORKER-MANAGEMENT=YES must be configured in the attribute file. The current number of active worker tasks will not be changed until DYNAMIC-WORKER-MANAGEMENT is enabled again. | 7 |
| DISCONNECT-PSTORE | Disconnects the persistent store. See <i>Availability of Persistent Store</i> . | 4 |
| ENABLE-ACCOUNTING | Enable accounting. | 5 |
| ENABLE-CMDLOG | Enable command logging. | 5 |
| ENABLE-DYN-WORKER | Enable the DYNAMIC-WORKER-MANAGEMENT again. DYNAMIC-WORKER-MANAGEMENT=YES must be configured in the attribute file. DYNAMIC-WORKER-MANAGEMENT has been disabled before. Additional worker tasks can be started again, or stopped if not used. | |
| FORBID-NEWUOWMSG | New UOW messages are not allowed. | 3 |
| PRODUCE-STATISTICS | Output current statistics to the broker log. | 5 |
| PURGE | Remove a unit of work from the persistent store. | 2 |

| Command Request | Comment | CIS Interface Version |
|-------------------|---|-----------------------|
| RESET-USER | Clear all cached security information for the specified user ID. | 5 |
| RESUME | Transport ID: NET <i>Snn</i> <i>Tnn</i> . Resume a suspended transport communicator. If the communicator was not suspended before, an error message will be returned. | |
| SET-CMDLOG-FILTER | Add the specified command log filter. | 5 |

| Command Request | | Comment | CIS Interface Version |
|--|--|---|-----------------------|
| SHUTDOWN | BROKER | Shutdown Broker immediately. | 1 |
| | CONVERSATION <conversation-id> | Command applies to conversations without units of work only. The security rights shutting down the service are required for shutting down the conversation. | 7 |
| | | IMMED The specified conversation is immediately removed. All messages of the conversation are lost. | |
| | | QUIESCE An end of conversation is issued. The conversation remains active. | |
| | SERVER | IMMED Shutdown server immediately. The server must be uniquely identified using field P-USER-ID or SEQNO and will be completely removed from the broker environment. The following steps will be performed: <ul style="list-style-type: none"> • Error code 00100050 will be returned to the server, if it is waiting. • All existing conversations will be finished with EOC. • User will be logged off. | 1 |
| QUIESCE Shutdown server but allow existing conversations to continue. The termination is signaled to the server by error code 00100051. After this, the next call issued must be a Deregister for all services (SC=*, SN=*, SV=* if more than one service is active). | | | |
| SERVICE <class/server/service> | Internal services cannot be shut down. | | 7 |
| | IMMED Caution: All servers offering this service will be deregistered and logged off. The following steps will be performed: <ul style="list-style-type: none"> • Error code 00100050 will be replied to all servers, if they are waiting. • All existing conversations will be finished with EOC. • Users will be logged off. | | |
| | QUIESCE All servers offering this service are deregistered. Shutdown servers but allow existing conversations to continue. The termination is signaled to the servers by error code 00100051. After this, the next call issued must be a Deregister for the service. | | |
| PARTICIPANT | IMMED Shutdown participant immediately. The participant must be identified, using fields P-USER-ID, UID TOKEN or SEQNO and will be completely removed from the Broker environment. The following steps will be performed: <ul style="list-style-type: none"> • Error code 00100050 will be replied to the participant, if it is waiting. • All existing conversations will be finished with EOC. • User will be logged off. Within EntireX Broker nomenclature, a participant is an application implicitly or explicitly logged on to the Broker as a specific user. A participant could act as client, server, publisher or subscriber. | 4 | |
| | QUIESCE Shutdown participant but allow existing conversations to continue. The termination is signaled to the participant by error code 00100051. | | |
| START | TRANSPORT | Transport ID: NET Snn Tnn | 7 |

| Command Request | | | Comment | CIS Interface Version |
|-----------------|-----------|----------------------------------|---|-----------------------|
| STATUS | TRANSPORT | Transport ID: NET Snn Tnn | Check the current status of the transport communicator. | 7 |
| STOP | TRANSPORT | Transport ID: NET Snn Tnn | Stop an active or suspended transport communicator. The transport communicator will shut down. All transport-specific resources will be freed. User requests receive response code 148. | 7 |
| SUBSCRIBE | | | Subscribe a user to a topic. | 4 |
| SUSPEND | TRANSPORT | Transport ID: NET Snn Tnn | Suspend an active transport communicator. | 7 |
| SWITCH-CMDLOG | | | Force a switch of command logging output files. | 5 |
| TRACE-FLUSH | BROKER | | Flush all trace data kept in internal trace buffers to stderr (DD:SYSOUT). The broker-specific attribute TRMODE=WRAP is required. | 7 |
| TRACE-OFF | BROKER | | Set TRACE-LEVEL off in Broker. | 1 |
| | PSF | | Set TRACE-LEVEL off in persistent store. | 5 |
| | SECURITY | | Set TRACE-LEVEL off in EntireX Security. | 5 |
| TRACE-ON | BROKER | | Set TRACE-LEVEL on in Broker. Values: 1 2 3 4. | 1 |
| | PSF | | Set TRACE-LEVEL on in persistent store. Values: 1 2 3 4. | 5 |
| | SECURITY | | Set TRACE-LEVEL on in EntireX Security. Values: 1 2 3 4. | 5 |
| TRAP-ERROR | BROKER | Error number: nnnn | Modifies the setting of the broker-specific attribute TRAP-ERROR. | 7 |
| UNSUBSCRIBE | | | Unsubscribe a user from a topic. | 4 |

ETBINFO: Returnable Information Requests

The following information requests can be returned. All the functions listed in this table are applicable to all three request modes; see *Modes of Requesting the Services*.

Note:

Version numbers in this table refer to the interface version and not to the Broker version.

| Information Request | Comment | Interface Version |
|---------------------|--|-------------------|
| BROKER | Global information on this Broker. No additional selection criteria are needed. Other selection criteria fields are ignored. | 1 |
| CLIENT | Information on active clients. | 1 |
| CMDLOG-FILTER | Information on command log filters. | 5 |
| CONVERSATION | Information on active conversations. | 1 |
| NET | Information on the Entire Net-Work communicator. | 5 |
| POOL | Information on Broker pool usage and dynamic memory management. | 7 |
| PSF | Information on a unit of work's status and Information for persistent store. | 2 |
| PSFDIV | Global information on the DIV persistent store. | 2 |

| Information Request | Comment | Interface Version |
|----------------------------|--|--------------------------|
| PSFADA | Global information on the Adabas persistent store. | 3 |
| PSFCTREE | Global information on the c-tree persistent store. | 5 |
| PSFFILE | Global information on the B-Tree persistent store (no longer supported). | 4 |
| PUBLICATION | Information on active publications. | 4 |
| PUBLISHER | Information on active publishers. | 4 |
| RESOURCE | Information on Broker resource usage. | 7 |
| SECURITY | Global information on EntireX Security. | 5 |
| SERVER | Information on active servers. | 1 |
| SERVICE | Information on active services. | 1 |
| SSL | Information on the SSL communicator. | 5 |
| STATISTICS | Statistics on selected Broker resources. | 7 |
| SUBSCRIBER | Information on subscribers. | 4 |
| TCP | Information on the TCP/IP communicator. | 5 |
| TOPIC | Information on active topics. | 4 |
| USER | Information on all users of Broker regardless of the user type. | 7 |
| WORKER | Global information on all workers. No additional selection criteria are needed. Other selection criteria fields are ignored. | 1 |
| WORKER_USAGE | Information on usage of worker tasks and dynamic worker management. | 7 |