

webMethods EntireX

Monitoring Scripts

Version 10.8

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This document applies to webMethods EntireX Version 10.8 and all subsequent releases.

Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

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Document Conventions

Convention	Description
Bold	Identifies elements on a screen.
Monospace font	Identifies service names and locations in the format <code>folder.subfolder.service</code> , APIs, Java classes, methods, properties.
<i>Italic</i>	Identifies: Variables for which you must supply values specific to your own situation or environment. New terms the first time they occur in the text. References to other documentation sources.
Monospace font	Identifies: Text you must type in. Messages displayed by the system. Program code.
{ }	Indicates a set of choices from which you must choose one. Type only the information inside the curly braces. Do not type the { } symbols.
	Separates two mutually exclusive choices in a syntax line. Type one of these choices. Do not type the symbol.
[]	Indicates one or more options. Type only the information inside the square brackets. Do not type the [] symbols.
...	Indicates that you can type multiple options of the same type. Type only the information. Do not type the ellipsis (...).

Online Information and Support

Product Documentation

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- Download products, updates and fixes.
- Search the Knowledge Center for technical information and tips.
- Subscribe to early warnings and critical alerts.
- Open and update support incidents.
- Add product feature requests.

Data Protection

Software AG products provide functionality with respect to processing of personal data according to the EU General Data Protection Regulation (GDPR). Where applicable, appropriate steps are documented in the respective administration documentation.

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The monitoring scripts available with EntireX allow you to define your environment, to monitor it and to define actions in case of an error. Although the scripts are installed and run on Microsoft Windows, you can monitor your EntireX environment that is running on any other operating system. You can specify any broker accessible in the network, for example one running under z/OS. The scripts can be used with brokers of any supported EntireX version.

Getting Started

After installing EntireX on Windows you can find the shortcut to the monitoring scripts under *your installation name* > **Administration**.



The following menu appears:

```
List of EntireX Monitoring Scripts
Current Broker: localhost:1971
1 : Show Broker and registered Services
The following scripts write to CSV file:
2 : Monitor Broker
3 : Monitor Services
4 : Monitor Clients
5 : Change current Broker (this session only)
6 : Edit Broker and other defaults (persistent)
7 : Define your Environment
8 : Monitor your Environment
9 : Open new command window (in script directory)
0 : Exit
Enter the number to be executed or ? for help
```

Monitoring your EntireX Components (Snapshot)

Choose Option 1 from the **EntireX Monitoring Scripts** menu for an overview of the specified broker and registered services.

- For the **specified broker** you see:
 - information where the broker is running
 - license information
 - some basic settings
- For the **registered services** you see:
 - the class/server/service to identify the service
 - for each service, basic KPIs such as number of active replicates (active server instances)
 - maximum of pending parallel conversations
 - number of times all server instances were busy

In addition to this menu option, you can also call this function using a script. See [Show Broker and Registered Services](#) under *EntireX Monitoring Scripts* for command syntax and more information.



Note: This option provides a snapshot of your current environment. The script runs once only and then terminates. You can also monitor your EntireX components over time.

Overview of Broker localhost:1971

Broker ID : ETB001
Running on : pcusr1
Version : 10.8.0.00
License expiration: UNLIMITED
Trace level : 0
Platform : PC Windows 10 Enterprise
Client timeout : 900

Transport Settings
NET : NO
SSL : NO
TCP : YES

Dynamic Memory Management: YES
Dynamic Worker Management: NO
Re-read attribute file : YES

Attribute file: C:\SoftwareAG\EntireX\config\etb\ETB001\ETB001.atr
Log file : C:\SoftwareAG\EntireX\config\etb\ETB001\ETB001.log
License file : C:\SoftwareAG\common\conf\exx108.xml

Workers : Active: 1
Services : Active: 9

High Watermarks
Servers : 1
Clients : 2
Conversations : 2
Memory : 30153112

List of Active (External) Services for Broker localhost:1971

Class : RPC
Server : SRV1
Service : CALLNAT

No. of times all server instances were busy: 0
Maximum of pending parallel conversations : 1
Total No. of requests : 1
No. of active server instances : 1
Conversation high watermarks : 1

End of overview

Monitoring your EntireX Components over Time

The options described here monitor your EntireX components over a period of time. The scripts write basic KPIs to a CSV file. By default the CSV files are written to folder *My Documents/Software AG/EntireX* and are updated with the latest information, by default every 60 seconds. The scripts run until they are canceled. You can change the defaults with Option 6 from the **EntireX Monitoring Scripts** menu. See also [Default Handling](#) under *Monitoring EntireX Components* for more information.

- [Monitor Broker](#)
- [Monitor Services](#)
- [Monitor Clients](#)

In addition to the menu options described here, you can also call the functions using a script. See [Monitoring EntireX Components](#) under *EntireX Monitoring Scripts* for command syntax and more information.



Note: You can also create a one-off snapshot of your environment.

Monitor Broker

The CSV file for Option 2 **Monitor Broker** shows the following information:

- time when the report was taken
- time (in seconds) the broker was running (uptime)
- number of active workers, servers, services and clients
- allocated memory
- high watermarks (HWMs) for servers, clients, conversations and memory

Sample output:

Time	Uptime (seconds)	Active workers	Servers	Server HWM	Clients	Client HWM	Services	Conversation HWM	Allocated storage (bytes)	Storage HWM (bytes)
02.01.2017 14:50	4302	1	1	1	3	3	9	6	32438648	32496160
02.01.2017 14:51	4363	1	1	1	3	4	9	7	32438648	32496160
02.01.2017 14:52	4424	1	1	1	3	4	9	7	32438648	32496160

In addition to the menu option described here, you can also call this function using a script. See [Monitoring Broker](#) under *Monitoring EntireX Components* for command syntax and more information.

Monitor Services

The CSV file for Option 3 **Monitor Services** shows the following information:

- time when the report was taken
- for each service that matches the selection: the class/server/service, which identifies the service
- number of active servers providing this service
- number of requests for this service
- and information about the conversations

The server busy (count) is the number of times an incoming request had to wait because all instances of the server were busy. A high number (in relation to the total number of requests) may indicate that more replicates could help to improve the performance.

Sample output:

Time	Class	Server	Service	Active Servers	Server Busy (count)	Requests	Pending Conversations
02.01.2017 14:50	RPC	SRV1	CALLNAT	1	0	2	0
02.01.2017 14:51	RPC	SRV1	CALLNAT	1	0	18	0
02.01.2017 14:52	RPC	SRV1	CALLNAT	1	0	35	0

Pending Conversations HWM	Active Conversations	Conversation HWM	Server Wait (count)
1	0	1	2
1	0	3	18
1	0	3	35

In addition to the menu option described here, you can also call this function using a script. See [Monitoring Services](#) under *EntireX Monitoring Scripts* for command syntax and more information.

Monitor Clients

The CSV file for Option 4 **Monitor Clients** shows the following information:

- time when the report was taken
- for each active client: the user ID, token, unique ID that identifies the client
- status (waiting or not waiting)
- start time of the client
- host name where the client is running
- information about the application

Sample output:

Time	UserID	Token	Unique user ID	Status	Wait conversation type	Wait Class	Wait Server	Wait Service
02.01.2017 14:50	EUR\pho		31374A616E20322D3	NotWaiting				
02.01.2017 14:50	PHO		31374A616E20322D3	NotWaiting				
02.01.2017 14:50	PHO		31374A616E20322D3	NotWaiting				
02.01.2017 14:51	EUR\pho		31374A616E20322D3	NotWaiting				
02.01.2017 14:51	PHO		31374A616E20322D3	NotWaiting				
02.01.2017 14:51	PHO		31374A616E20322D3	NotWaiting				
02.01.2017 14:52	EUR\pho		31374A616E20322D3	NotWaiting				
02.01.2017 14:52	PHO		31374A616E20322D3	NotWaiting				
02.01.2017 14:52	PHO		31374A616E20322D3	NotWaiting				

Last active (seconds)	Sum conversations	Host name	Application	Application type	Application version	Start time	IPV4	IPV6
0	1	mcpho02	etbinfo.exe	WIN64	9.12.0.0	Mon Jan 2 14:50:39 2017	127.0.0.1	
27	1	mcpho02	natural.exe	WIN32	9.12.0.0	Mon Jan 2 14:50:12 2017	127.0.0.1	
27	5	127.0.0.1				Mon Jan 2 14:50:07 2017	127.0.0.1	
0	1	mcpho02	etbinfo.exe	WIN64	9.12.0.0	Mon Jan 2 14:51:40 2017	127.0.0.1	
0	25	mcpho02	natural.exe	WIN32	9.12.0.0	Mon Jan 2 14:50:12 2017	127.0.0.1	
88	5	127.0.0.1				Mon Jan 2 14:50:07 2017	127.0.0.1	
0	1	mcpho02	etbinfo.exe	WIN64	9.12.0.0	Mon Jan 2 14:52:41 2017	127.0.0.1	
1	41	mcpho02	natural.exe	WIN32	9.12.0.0	Mon Jan 2 14:50:12 2017	127.0.0.1	
149	5	127.0.0.1				Mon Jan 2 14:50:07 2017	127.0.0.1	

In addition to the menu option described here, you can also call this function using a script. See [Monitoring Clients](#) under *EntireX Monitoring Scripts* for command syntax and more information.

Monitoring your EntireX Environment over Time

In this scenario you have an EntireX production environment with a broker and RPC or ACI servers that you want to monitor. You also want to receive notifications when a component of your environment goes down and is no longer available.

To do this, you can use the monitoring scripts available with EntireX. They allow you to define your environment, to monitor it and to define actions in case of an error. Although the scripts are installed and run on Microsoft Windows, you can monitor your EntireX environment that is running on any other operating system.

Use the options offered in the menu of the monitoring scripts to define and to monitor your environment.

- [Defining your Environment](#)
- [Monitoring your Environment](#)

Defining your Environment

Choose Option 7 **Define your Environment** to define your environment. This opens an editor with a sample definition of an environment. Adjust this definition to your needs.

Here you see an example of a basic environment:

```
ENVIRONMENT MyProductionServers
ERROREXIT handle_error.bat
BROKER myProductionBroker localhost:1971
@rem Example of a definition of an RPC Service
RPCSERVICE myRPCServer RPC SRV1 CALLNAT
@rem Example of a definition of an ACI Service
SERVICE myACIServer ACLASS ASERVER ASERVICE
```

An environment is defined by the keyword `ENVIRONMENT`, which you can define with a meaningful name. You need to define the following for this environment:

- a user-written exit to handle outages
- the broker
- ACI or RPC services



Note: The broker does not have to be running on the local PC; it can run anywhere in your network (as long as it is accessible from the PC where the monitoring script is running).

Use the keyword `ERROREXIT` to define your own error routine (a batch file) that is called in case of an outage. The batch file has to be in the `PATH` so that the monitoring script can call it. The error exit is called in case of an outage and provides information on the component (Broker or Server)

that caused the error. File `handle_error.bat` is provided as an example. Adjust the error exit to your needs (for example send a notification in case of an outage).

Use the keyword `BROKER` followed by your logical name of the broker and the broker ID to define the broker to be monitored. See the provided sample environment for examples of how to specify user ID and the file containing the encrypted password if your broker is running with EntireX Security (see [Using an Encrypted Password](#)).

Use the keyword `RPCSERVICE` (for an RPC server) or `SERVICE` (for an ACI service) followed by your logical name and the class, server and service to define the server(s) to be monitored. You can define multiple servers. Example:

```
RPCSERVICE myCICSRPCServer RPC CICSSRV CALLNAT
@rem my CICS RPC Server
RPCSERVICE myBATCHRPCServer RPC BATCHSRV CALLNAT
@rem my Batch RPC Server
```

In this case the monitoring script will first check if the RPC Server for CICS can be called. Secondly it will check the availability of the RPC Server for Batch.

The definition of the environment is stored under *My Documents/ Software AG/EntireX*.

Monitoring your Environment

Choose Option 8 **Monitor your Environment** to start monitoring the environment you defined in the previous step. During execution, the definition of the environment will be passed.

- Keyword `BROKER` checks if the defined broker can be accessed.
- Keyword `SERVICE` checks if the defined (ACI) service is registered with the broker.
- Keyword `RPCSERVICE` defines an RPC server. During execution this service will be "pinged" using the `RPC ping` command, which checks if the defined service can be called.

If an outage or error occurs, the error exit you wrote is called.

The environment check is repeated after a specified time (default is 60 seconds).

The technical basis for all these checks is the command-line utility `etbinfo`. Full details are provided under `etbinfo` in the Windows Administration documentation.

Handling Outages

If the check of a component in your environment (BROKER, SERVICE or RPCSERVICE) fails, the specified `ERRROEXIT` is called and provides the following information:

- the object (BROKER or SERVICE)
- error number and error text returned by `etbinfo`
- environment name
- broker name and broker ID
- if a service fails, the name, class, server and service

If an outage occurs, you can use this information to send a notification about the checked environment (using your defined environment name) and the component (broker or service) that is not available. Or you can try to automatically restart the component that is down.

Changing the Current Broker

➤ To change the current broker for your current session

- Choose option 5 from the **EntireX Monitoring Scripts** menu, “Change current Broker (this session only)”. This changes the current broker ID used for executing the monitoring scripts in this session.

If you restart the script, the broker ID will be (re)set to the default value.

➤ To change the current broker permanently

- Choose option 6 from the **EntireX Monitoring Scripts** menu, “Edit Broker and other Defaults (persistent)”.

Or:

Run command `edit_user_specific_monitor_defaults.bat` in the EntireX bin directory.

See [Default Handling](#).

Script Menu Options

The following table lists the menu options and gives the corresponding command-line script.

Option	Description	Corresponding Script	Note
1	Show Broker and registered Services. Displays information on the current broker and its registered services.	entirex_overview.bat	
2	Monitor Broker. Monitors the current broker.	monitor_broker_to_csv.bat	Output for these three monitoring scripts is written to a CSV file (comma-separated values), which you can view, for example, with a spreadsheet tool.
3	Monitor Services. Monitors services registered to the current broker.	monitor_service_to_csv.bat	
4	Monitor Clients. Monitors clients registered to the current broker.	monitor_client_to_csv.bat	
5	Change Current Broker. Changes the broker used in the various scripts for this session only.		When the session is restarted, this value reverts to the default.
6	Edit Broker and other Defaults. You can modify defaults for Broker ID, timeout values and output files.	edit_user_specific_monitor_defaults.bat	
7	Define your Environment. You can define the environment (list of broker and registered services) you want to monitor.	edit_user_specific_environment_definition.bat	
8	Monitor your Environment (defined with option 7).	monitor_environment.bat	
9	Open New Command Window (in command-line script directory).		This enables you to start the scripts with your parameters.
0	Exit.		Exits the menu. If you changed the current broker with Option 5, this will revert to the default value. Monitoring scripts that write to CSV files running in a separate command window continue to run.

Using an Encrypted Password

You can encrypt a password and store this in a file. Specify this file instead of a cleartext password when you call a secure broker.



Note: We strongly recommend that your cleartext password is longer than 16 characters.

> To encrypt a password

- 1 Enter the command:

```
etbnattr --echo_password_only -w clear_text_password ↵
```

The encrypted password is written to stdout.

- 2 Copy the password value to an empty file. (Ignore the prefix `KEY-PASSWD-ENCRYPTED:.`)

See also:

- [Using an Encrypted Password](#) in the Windows Administration documentation
- [Monitoring Broker](#) under *Monitoring EntireX Components* for a sample script using an encrypted password
- Note under [Default Handling](#) if your default settings file was created with a previous version of EntireX that did not support password encryption.

3 Show Broker and Registered Services

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- Example 19

Scenario: “I want a quick overview of my standard broker and a list of active external services that are running.”

With script `entirex_overview.bat`, EntireX offers a simple solution to show details of a specified or default broker and the active external services registered to it.

Calling the Script

> To show a broker and its registered services

- Choose option 1 from the **EntireX Monitoring Scripts** menu, “Show Broker and registered Services”.

Or:

Enter one of the following commands:

```
entirex_overview.bat
```

```
entirex_overview.bat <BrokerId>
```

```
entirex_overview.bat <BrokerId> <UserId>
```

```
entirex_overview.bat <BrokerId> <UserId> FILE <EncryptedPasswordFile>
```

<code>where <BrokerId></code>	is the ID of the broker to be monitored (default <code>localhost:1971</code>), and
<code><UserId></code>	is your user ID for broker calls if your broker is running with EntireX Security (no default)
<code><EncryptedPasswordFile></code>	is a file containing your encrypted password. See Using an Encrypted Password .

The parameter `FILE` indicates that the encrypted password will be read from the specified file.



Notes:

1. The file containing the encrypted password must be located at `%HOMEDRIVE%%HOMEPATH%\documents\Software AG\EntireX`, or specify the complete file path. Enclose the file name in quotes (" ") if the file path or file name contains blanks.
2. The cleartext `<Password>` option of earlier versions is deprecated but still supported in this version.

If no broker ID is specified, an overview of the default broker is provided. See [Default Handling](#) on how to change this.

See also *Using the Broker ID in Applications* in the ACI Programming documentation.

Example

Sample command:

```
entirex_overview.bat localhost:1971 myUserId FILE myEncryptedPasswordFile.txt
```

Sample output:

```
Overview of Broker localhost:1971

Broker ID       : ETB001
Running on     : pcusr1
Version        : 10.8.0.00
License expiration: UNLIMITED
Trace level    : 0
Platform       : PC           Windows 10 Enterprise
Client timeout : 900

Transport Settings
NET            : NO
SSL           : NO
TCP           : YES

Dynamic Memory Management: YES
Dynamic Worker Management: YES
Re-read attribute file   : YES

Attribute file: C:\SoftwareAG\EntireX\config\etb\ETB001\ETB001.atr
Log file      : C:\SoftwareAG\EntireX\config\etb\ETB001\ETB001.log
License file  : C:\SoftwareAG\common\conf\exx108.xml

Workers       : Active: 1
Services      : Active: 9

High Watermarks
Servers       : 2
Clients      : 1
Conversations : 1
Memory       : 30153112

List of Active (External) Services for Broker localhost:1971
```

Show Broker and Registered Services

```
Class      : RPC
Server     : XMLSERVER
Service    : CALLNAT
```

```
No. of times all server instances were busy: 0
Maximum of pending parallel conversations : 0
Total No. of requests                     : 0
No. of active server instances             : 2
Conversation high watermarks               : 0
```

End of overview

4 Monitoring EntireX Components

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Scenario: “I want to monitor an EntireX component (broker, service, client) over time.”

EntireX provides multiple scripts to monitor - at a specified interval - your standard broker, registered services, and clients that call your broker. Output is written to a CSV file.

Monitoring Broker

Scenario: “I want to monitor my standard broker over time.”

Script `monitor_broker_to_csv.bat` writes key broker usage information to a CSV file. The report includes information such as active workers, clients, servers, allocated storage etc. The report is appended at a specified interval until the script is stopped.

Calling the Script

➤ To monitor your current broker

- Choose option 2 from the **EntireX Monitoring Scripts** menu, “Monitor Broker”.

Or:

Enter one of the following commands:

```
monitor_broker_to_csv.bat
```

```
monitor_broker_to_csv.bat <BrokerId>
```

```
monitor_broker_to_csv.bat <BrokerId> <Time> <UserId> FILE <EncryptedPasswordFile>
```

<code>where <BrokerId></code>	is the ID of the broker to be monitored (default <code>localhost:1971</code>), and
<code><Time></code>	is the interval between reports in seconds (default 60)
<code><UserId></code>	is your user ID for broker calls if your broker is running with EntireX Security (no default)
<code><EncryptedPasswordFile></code>	is a file containing your encrypted password. See Using an Encrypted Password .

The parameter `FILE` indicates that the encrypted password will be read from the specified file.



Notes:

1. The file containing the encrypted password must be located at `%HOMEDRIVE%%HOMEPATH%\documents\Software AG\EntireX`, or specify the complete file path. Enclose the file name in quotes (" ") if the file path or file name contains blanks.
2. The cleartext `<Password>` option of earlier versions is deprecated but still supported in this version.

The first time you execute this script in a session, the results are displayed on screen so you can verify that the correct data is returned. You can override this behavior using environment variable `MONITOR_VERIFY`. Example:

```
set MONITOR_VERIFY=NO
```

The results of subsequent executions are written to a CSV file, with a new line created for each call. Default is `<drive>:\Users\user_id\documents\SoftwareAG\EntireX\out_monitor_broker.csv`. See also [Default Handling](#). Use environment variable `MONITOR_BROKER_OUTFILE` to specify a different output file. Example:

```
set MONITOR_BROKER_OUTFILE=c:\my_monitor_broker_outfile.csv
```

The content is based on broker information object `BROKER-OBJECT (Struct INFO_BKR)`.

CSV Column	Field Name of BROKER-OBJECT
Uptime (seconds)	RUNTIME
Active Workers	NUM-WORKER-ACT
Servers	SERVER-ACT
Server HWM	SERVER-HIGH
Clients	CLIENT-ACT
Client HWM	CLIENT-HIGH
Services	SERVICE-ACT
Conversation HWM	CONV-HIGH
Allocated Storage (bytes)	TOTAL-STORAGE-ALLOCATED
Storage HWM (bytes)	TOTAL-STORAGE-ALLOCATED-HIGH

where HWM=high watermark

The script will run until it is cancelled, for example with `ctrl+C` or by closing the command window.

Example

Sample command:

```
monitor_broker_to_csv.bat localhost:1971 10 myUserId FILE myEncryptedPasswordFile.txt
```

Sample output:

1	Time	Uptime	Active w	Servers	Server HWM	Clients	Client HWM	Services	Conversat	Allocated stor	Storage HWM
2	15:12.1	6098	1	2	17	1	31	9	59	29795200	334446456
3	16:13.2	6159	1	2	17	1	31	9	59	29795200	334446456
4	17:14.5	6220	1	32	32	61	61	12	62	368009320	368009320
5	18:16.2	6282	1	32	32	61	61	12	62	368009320	368009320
6	19:19.7	6345	1	32	32	54	61	12	62	359095928	368009320
7	20:22.3	6408	1	29	32	19	61	12	62	354639232	368009320
8	21:23.2	6469	1	3	32	7	61	10	62	307706280	368009320
9	22:24.2	6530	1	3	32	6	61	10	62	222753768	368009320
10	23:25.2	6591	1	3	32	6	61	10	62	90098240	368009320
11	24:26.2	6652	1	3	32	6	61	10	62	85641544	368009320
12	25:27.2	6713	1	3	32	6	61	10	62	85641544	368009320
13	26:28.2	6774	1	3	32	1	61	10	62	85641544	368009320
14											

Monitoring Services

Scenario: “I want to monitor the services registered to my standard broker over time.”

Script `monitor_service_to_csv.bat` writes key service usage information on external services registered to the current broker to a CSV file. The report includes information such as Class/Server/Service, active servers, number of requests, number of times the server was busy, pending conversations etc. The report is appended at a specified interval until the script is stopped.

By default, services with `CLASS=RPC` and `SERVICE=CALLNAT` are monitored.

Calling the Script

➤ To monitor the services registered your current broker

- Choose option 3 from the **EntireX Monitoring Scripts** menu, “Monitor Services”.

Or:

Enter one of the following commands:

```
monitor_service_to_csv_file.bat
```

```
monitor_service_to_csv_file.bat <BrokerID>
```

```
monitor_service_to_csv_file.bat <BrokerID> <Time> <Class> <Server> <Service> ↵
<UserId> FILE <EncryptedPasswordFile>
```

<code>where <BrokerId></code>	is the ID of the broker to be monitored (default <code>localhost:1971</code>), and
<code><Time></code>	is the interval between reports in seconds (default 60)
<code><Class></code>	is the class to be monitored (default <code>RPC</code>)
<code><Server></code>	is the server to be monitored (default <code>*</code>)
<code><Service></code>	is the service to be monitored (default <code>CALLNAT</code>)
<code><UserId></code>	is your user ID for broker calls if your broker is running with EntireX Security (no default)
<code><EncryptedPasswordFile></code>	is a file containing your encrypted password. See Using an Encrypted Password .

The parameter `FILE` indicates that the encrypted password will be read from the specified file.



Notes:

1. The file containing the encrypted password must be located at `%HOMEDRIVE%%HOMEPATH%\documents\Software AG\EntireX`, or specify the complete file path. Enclose the file name in quotes (" ") if the file path or file name contains blanks.
2. The `cleartext <Password>` option of earlier versions is deprecated but still supported in this version.

The first time you execute this script in a session, the results are displayed on screen so you can verify that the correct data is returned. You can override this behavior using environment variable `MONITOR_VERIFY`. Example:

```
set MONITOR_VERIFY=NO
```

The results of subsequent executions are written to a CSV file, with a new line created for each (active) Service. Default is `<drive>:\Users\user_id\documents\SoftwareAG\EntireX\out_monitor_service.csv`. Specify a different output file with environment variable `MONITOR_SERVICE_OUTFILE`. Example:

```
set MONITOR_SERVICE_OUTFILE=c:\my_monitor_service_outfile.csv
```

The content is based on broker information object `SERVICE-OBJECT (Struct INFO_SV)`.

CSV Column	Field Name of SERVICE-OBJECT
Class	SERVER-CLASS
Server	SERVER-NAME
Service	SERVICE
Active Servers	SERVER-ACT
Server Busy (count)	NUM-SERV-OCC
Requests	REQ-SUM
Pending Conversations	NUM-PEND
Pending Conversations HWM	PEND-HIGH
Active Conversations	CONV-ACT
Conversation HWM	CONV-HIGH
Server Wait (count)	NUM-WAIT-SERVER

where HWM=high watermark

The script will run until it is cancelled, for example with `ctrl+C` or by closing the command window.

Example

Sample command:

```
monitor_service_to_csv_file.bat localhost:1971 10 RPC * ←
* myUserId FILE myEncryptedPasswordFile.txt
```

Sample output:

1	Time	Class	Server	Service	Active Ser	Server Bus	Requests	Pending C	Pending C	Active Cor	Conversat	Server Wait
2	15:14.2	RPC	XMLSERVE	CALLNAT	2	0	0	0	0	0	0	0
3	16:15.1	RPC	XMLSERVE	CALLNAT	2	0	0	0	0	0	0	0
4	17:16.7	RPC	XMLSERVE	CALLNAT	2	0	0	0	0	0	0	0
5	17:16.8	AClass	ASERVER	ASERVICE	10	13	85	0	10	8	22	85
6	17:16.8	CCLASS	CSERVER	CSERVICE	10	11	73	0	9	3	20	73
7	17:16.8	BCLASS	BSERVER	BSERVICE	10	27	90	0	8	7	20	90
8	18:20.0	RPC	XMLSERVE	CALLNAT	2	0	0	0	0	0	0	0
9	18:20.3	AClass	ASERVER	ASERVICE	10	21	589	0	10	5	22	589
10	18:20.3	CCLASS	CSERVER	CSERVICE	10	45	669	0	9	6	21	669
11	18:20.5	BCLASS	BSERVER	BSERVICE	10	49	598	0	8	7	20	598
12	19:24.2	RPC	XMLSERVE	CALLNAT	2	0	0	0	0	0	0	0
13	19:24.4	AClass	ASERVER	ASERVICE	10	86	1130	0	10	6	22	1130
14	19:24.4	CCLASS	CSERVER	CSERVICE	10	238	1328	0	9	8	21	1328
15	19:24.7	BCLASS	BSERVER	BSERVICE	10	102	1094	0	8	5	20	1094
16	20:27.3	RPC	XMLSERVE	CALLNAT	2	0	0	0	0	0	0	0
17	20:27.4	AClass	ASERVER	ASERVICE	10	86	1792	0	10	8	22	1792
18	20:27.4	CCLASS	CSERVER	CSERVICE	8	240	1873	0	9	7	21	1873
19	20:27.5	BCLASS	BSERVER	BSERVICE	9	102	1584	0	8	9	20	1584
20	21:29.2	RPC	XMLSERVE	CALLNAT	2	0	0	0	0	0	0	0
21	21:29.2	BCLASS	BSERVER	BSERVICE	1	110	1807	5	8	6	20	1807
22	22:30.2	RPC	XMLSERVE	CALLNAT	2	0	0	0	0	0	0	0
23	22:30.2	BCLASS	BSERVER	BSERVICE	1	110	1807	5	8	5	20	1807
24	23:31.2	RPC	XMLSERVE	CALLNAT	2	0	0	0	0	0	0	0
25	23:31.2	BCLASS	BSERVER	BSERVICE	1	110	1807	5	8	5	20	1807
26	24:32.3	RPC	XMLSERVE	CALLNAT	2	0	0	0	0	0	0	0
27	24:32.3	BCLASS	BSERVER	BSERVICE	1	110	1807	5	8	5	20	1807
28	25:33.2	RPC	XMLSERVE	CALLNAT	2	0	0	0	0	0	0	0

Monitoring Clients

Scenario: "I want to monitor the clients calling my standard broker over time."

Script `monitor_client_to_csv.bat` writes key usage information on clients calling the current broker at a defined interval to a CSV file. The report includes information such as user ID, token, wait time, Class/Server/Service, hostname, environment information, start time and IP address etc. The report is appended at a specified interval until the script is stopped.

Calling the Script

➤ To monitor the clients calling your current broker

- Choose option 4 from the **EntireX Monitoring Scripts** menu, "Monitor Clients".

Or:

Enter one of the following commands:

```
monitor_client_to_csv.bat
```

```
monitor_client_to_csv.bat <BrokerId>
```

```
monitor_client_to_csv.bat <BrokerId> <Time> <UserId> FILE <EncryptedPasswordFile>
```

<code>where <BrokerId></code>	is the ID of the broker to be monitored (default <code>localhost:1971</code>), and
<code><Time></code>	is the interval between reports in seconds (default 60)
<code><UserId></code>	is your user ID for broker calls if your broker is running with EntireX Security (no default)
<code><EncryptedPasswordFile></code>	is a file containing your encrypted password. See Using an Encrypted Password .

The parameter `FILE` indicates that the encrypted password will be read from the specified file.



Notes:

1. The file containing the encrypted password must be located at `%HOMEDRIVE%%HOMEPATH%\documents\Software AG\EntireX`, or specify the complete file path. Enclose the file name in quotes (" ") if the file path or file name contains blanks.

2. The `cleartext <Password>` option of earlier versions is deprecated but still supported in this version.

The first time you execute this script in a session, the results are displayed on screen so you can verify that the correct data is returned. You can override this behavior using environment variable `MONITOR_VERIFY`. Example:

```
set MONITOR_VERIFY=NO
```

The results of subsequent executions are written to a CSV file, with a new line created for each (active) client. Default is `<drive>:\Users\user_id\documents\SoftwareAG\EntireX\out_monitor_service.csv`. See also [Default Handling](#). Use environment variable `MONITOR_CLIENT_OUTFILE` to specify a different output file. Example:

```
set MONITOR_CLIENT_OUTFILE=c:\my_monitor_client_outfile.csv
```

The content is based on broker information object `CLIENT-SERVER-PARTICIPANT-OBJECT` (Struct `INFO_CS`).

CSV Column	Field Name of BROKER-OBJECT
UserID	USER-ID
Token	TOKEN
Unique User ID	P-USER-ID
Status	STATUS
Wait Conversation Type	WAIT-CONV-TYPE
Wait Class	WAIT-SERVER-CLASS
Wait Server	WAIT-SERVER-NAME
Wait Service	WAIT-SERVICE
Last Active (seconds)	LAST-ACTIVE
Sum Conversations	SUM-CONV
HostName	HOST-NAME
Application	APPLICATION-NAME
Application Type	APPLICATION-TYPE
Application Version	APPLICATION-VERSION
Start Time	CREATE-TIME
IPV4	IP-ADDRESS
IPV6	IPV6-ADDRESS

The script will run until it is cancelled, for example with `ctrl+C` or by closing the command window.

Example

Sample command:

```
example monitor_client_to_csv.bat localhost:1971 ↵
10 myUserId FILE myEncryptedPasswordFile.txt
```

Sample output (truncated):

1	Time	UserID	Token	Unique user ID	Status	Wait conv	Wait Class	Wait Serve	Wait Servi	Last activ	Sum conv	Host name	Application	Applicatio	
2	15:18.1	EUR\usr		206D6370686F3	0						0	1	mcusr01	etbinfo.exe	WIN64
3	16:19.2	EUR\usr		206D6370686F3	0						0	1	mcusr01	etbinfo.exe	WIN64
4	17:20.5	STDCLT		206D6370686F3	0						6	2	mcusr01	nconvCl.exe	WIN64
5	17:20.5	STDCLT		206D6370686F3	0						7	2	mcusr01	nconvCl.exe	WIN64
6	17:20.6	STDCLT		206D6370686F3	0						9	1	mcusr01	nconvCl.exe	WIN64
7	17:20.6	STDCLT		206D6370686F3	0						8	1	mcusr01	nconvCl.exe	WIN64
8	17:20.7	STDCLT		206D6370686F3	5 NONE						7	9	mcusr01	nconvCl.exe	WIN64
9	17:20.7	STDCLT		206D6370686F3	0						7	1	mcusr01	nconvCl.exe	WIN64
10	17:20.8	STDCLT		206D6370686F3	0						9	1	mcusr01	nconvCl.exe	WIN64
11	17:20.8	STDCLT		206D6370686F3	0						11	1	mcusr01	nconvCl.exe	WIN64
12	17:20.8	STDCLT		206D6370686F3	0						11	1	mcusr01	nconvCl.exe	WIN64
13	17:20.8	STDCLT		206D6370686F3	0						11	1	mcusr01	nconvCl.exe	WIN64
14	17:20.9	STDCLT		206D6370686F3	0						11	1	mcusr01	nconvCl.exe	WIN64
15	17:20.9	STDCLT		206D6370686F3	5 NONE						0	9	mcusr01	nconvCl.exe	WIN64
16	17:20.9	STDCLT		206D6370686F3	0						11	1	mcusr01	nconvCl.exe	WIN64
17	17:20.9	STDCLT		206D6370686F3	0						11	1	mcusr01	nconvCl.exe	WIN64
18	17:21.0	STDCLT		206D6370686F3	5 NONE						0	10	mcusr01	nconvCl.exe	WIN64
19	17:21.0	STDCLT		206D6370686F3	0						0	11	mcusr01	nconvCl.exe	WIN64
20	17:21.1	STDCLT		206D6370686F3	5 NONE						1	10	mcusr01	nconvCl.exe	WIN64
21	17:21.1	STDCLT		206D6370686F3	0						0	7	mcusr01	nconvCl.exe	WIN64
22	17:21.2	STDCLT		206D6370686F3	0						0	3	mcusr01	nconvCl.exe	WIN64
23	17:21.2	STDCLT		206D6370686F3	0						2	2	mcusr01	nconvCl.exe	WIN64
24	17:21.2	STDCLT		206D6370686F3	5 NONE						0	12	mcusr01	nconvCl.exe	WIN64
25	17:21.2	STDCLT		206D6370686F3	0						0	18	mcusr01	nconvCl.exe	WIN64
26	17:21.3	STDCLT		206D6370686F3	0						11	1	mcusr01	nconvCl.exe	WIN64
27	17:21.3	STDCLT		206D6370686F3	0						1	6	mcusr01	nconvCl.exe	WIN64
28	17:21.4	STDCLT		206D6370686F3	5 NONE						0	20	mcusr01	nconvCl.exe	WIN64
29	17:21.4	STDCLT		206D6370686F3	0						0	6	mcusr01	nconvCl.exe	WIN64

Default Handling

You can customize the defaults used for the monitoring scripts.

› To customize the defaults

- 1 Choose option 6 from the **EntireX Monitoring Scripts** menu, "Edit Broker and other defaults (persistent)".

Or:

Enter command `edit_user_specific_monitor_defaults`.

This copies file *default_values_for_monitor_to_csv_file.bat* to directory `<drive>:\Users\user_id\documents\SoftwareAG\EntireX` (if it does not already exist) and opens a text editor, for example Notepad.

- 2 Edit the file to match your environment settings. You can change defaults such as:

- broker ID
- default timeouts for the monitoring scripts
- output files for the monitoring scripts

The changes you make here are persistent: they apply to all subsequent sessions.

If your broker is running with EntireX Security you can specify a file containing an encrypted password instead of a cleartext password.



Note: If your default settings file was created with a previous version of EntireX that did not support an encrypted password file and your default Broker is running with EntireX Security, you can enable password encryption, using one of the following methods:

- Add the environment variable `MONITOR_DEFAULT_ENCRYPTED_PWD_FILE` to your default file and specify the file containing the encrypted password. Example:

```
set MONITOR_DEFAULT_ENCRYPTED_PWD_FILE=myEncryptedPasswordFile.txt
```

- Rename the existing file *default_values_for_monitor_to_csv_file.bat* in directory `<drive>:\Users\user_id\documents\SoftwareAG\EntireX` and from the **EntireX Monitoring Scripts** menu choose Option 6 "Edit Broker and other defaults (persistent)".
- Enter the following command to create a new defaults file and adjust it to your needs:

`edit_user_specific_monitor_defaults`

5 Monitoring your EntireX Environment

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Scenario: “I want to monitor my environment and check that all components (broker, RPC servers) are up and running.”

EntireX offers a script-based solution to check if all brokers and services of a defined environment are active.

Defining your Environment

➤ To define the environment to be monitored

- Choose option 7 from the **EntireX Monitoring Scripts** menu, “Define your Environment”.

Or:

Enter command `edit_user_specific_environment_definition.bat` to specify the environment to be monitored (defined by broker and list of services).

This opens a text editor (for example Notepad) with a sample definition of an environment that you can customize. You can enter values for the following parameters:

Parameter	Value	Description	Note
ENVIRONMENT	<Env_Name>	Logical name of the environment	
LOGEXIT	<Exit_Name>	User exit called after each component check.	Optional. See Logging Exit .
ERROREXIT	<Exit_Name>	Batch file to be called if a component of the environment is not active.	See Error Handling .
BROKER	<Broker_Name> <Broker_ID>	Logical name and ID of broker used for the etbinfo calls.	
	<Broker_Name> <Broker_ID> <UserId> FILE <EncryptedPasswordFile>	Additional user ID and encrypted password file if the broker is running with EntireX Security.	See Using an Encrypted Password .
SERVICE	<Service_Name> <Class> <Server> <Service>	Logical service name, class, server, service to be monitored.	Checks if the specified service is registered at the broker.
RPCSERVICE	<RPC_Service_Name> <Class> <Server> <Service>	Logical RPC service name, class, server, service to be monitored.	Valid only for RPC servers and issues an RPC ping command to the specified service.



Notes:

1. The file may contain a list of environments.
2. Each environment can consist of list of brokers, and for each broker a list of services can be defined.
3. Blanks in the logical names are not supported.
4. The `cleartext <Password>` option of earlier versions is deprecated but still supported in this version.

The file you define here is used for the following scripts:

<code>monitor_environment.bat</code>	See Monitoring your Environment .
<code>process_environment_file.bat</code>	This batch file processes the environment definition file and calls <code>check_environment.bat</code> . This batch file is called by <code>monitor_environment.bat</code> .
<code>check_environment.bat</code>	This batch file is called by <code>process_environment_file.bat</code> with the parameters of one line of the environment definition file. The batch file checks the parameters and either: <ul style="list-style-type: none"> ■ sets environment variables for subsequent calls ■ calls <code>etbinfo</code> to check if the broker/service is running

Examples

This environment has one broker:

```
ENVIRONMENT myProductionServers
ERROEXIT handle_error.bat
BROKER myProductionBroker localhost:1971
RPCSERVICE myRPCServer RPC SRV1 CALLNAT
```

This environment has multiple brokers:

```
ENVIRONMENT myMFServers
ERROEXIT handle_error.bat
BROKER myMFBroker ibm2:3930
SERVICE myACIServer ACLASS ASERVER ASERVICE
BROKER myMFBroker2 ibm2:3940
SERVICE myACIServer2 ACLASS ASERVER ASERVICE
RPCSERVICE myRPCServer2 RPC SRV2 CALLNAT
```

Monitoring your Environment

> To monitor your environment

- Choose option 8 from the **EntireX Monitoring Scripts** menu, “Monitor your Environment”.

Or:

Enter a command as shown below:

```
monitor_environment.bat
```

```
monitor_environment.bat <Time>
```

```
monitor_environment.bat <Time> <EnvDefFile>
```

where `<Time>` is the interval between checks in seconds (default 60)
`<EnvDefFile>` is the file containing the definition of the environment (default *MyEnvironment.cfg*).

Example:

```
monitor_environment.bat 30 myEnvironmentDefinitionFile.txt
```

The following checks are performed:

- That the service is registered at the broker.
- That the server can be called. This is done with an RPC ping command.

A user exit specified in the environment definition file (see [Defining your Environment](#)) is called if a specified broker or service is not active. See [Error Handling](#) below.

Error Handling

A sample batch file `handle_error.bat` is provided to handle the situation where a component of a defined environment (see [Defining your Environment](#)) is not available. The environment definition file specifies the name of the error exit to be called. You can use this file as a template for your own exit to customize your error handling. We strongly recommend you rename this file.

```

@echo off
@rem the following environment variables are set when the bat file is called
@rem environment variable %OBJECT% Error Object. possible values: BROKER or SERVICE
@rem environment variable ETBINFOERROR Error Number returned by ETBINO
@rem environment variable ETBINFOERRORTEXT Error text
@rem the following environment variables are set for OBJECT SERVICE and OBJECT BROKER
@rem environment variable %ENV% logical name of environment
@rem environment variable %BNAME% logical name of Broker
@rem environment variable %BID% Broker ID
@rem the following environment variables are only set for OBJECT SERVICE
@rem environment variable %SNAME% logical service name
@rem environment variable %CLASS% Class
@rem environment variable %SERVER% Server
@rem environment variable %SERVICE% Service

echo Example User exit to handle errors: handle_error.bat
echo Error during check of Environment %ENV%
echo Broker %BNAME% (%BID%)

@rem check error object
@rem %OBJECT% == BROKER - Error Situation: defined Broker cannot be called
if %OBJECT%.==BROKER. goto Broker
@rem %OBJECT% == SERVICE - Error Situation: defined Service not registered
if %OBJECT%.==SERVICE. goto Service
echo Unknown Error Object %OBJECT%
goto end

:Broker
@rem the Broker (logical Name BNAME, Broker ID BID) is not running.
@rem add your code here to handle this situation

echo FATAL ERROR
echo Environment %ENV%
echo Broker %BNAME% ( %BID%) not active
goto end

:Service
@rem the Service (logical Name SNAME , CLASS / SERVER / SERVICE ) on
@rem Broker (logical Name BNAME, Broker ID BID) is not running.
@rem add your code here to handle this situation

echo FATAL ERROR
echo Environment %ENV%
echo Service %SNAME% (%CLASS% / %SERVER% / %SERVICE% ) at Broker %BNAME% ( %BID%) ←
  not registered
goto end

:end
@rem remove the pause so that monitoring of the environment can continue without a ←
break
pause

```

Logging Exit

You optionally specify a logging exit when you are monitoring your environment. The exit is called every time a component in the environment is checked (BROKER, RPCSERVICE, SERVICE). With the exit you can, for example, write a CSV file with the result of the checks. A sample script `log_environment.bat` is provided, which you can use as a template. We strongly recommend you rename this file.

The exit contains the following environment variables:

```
@rem the following environment variables are set when the bat file is called
@rem environment variable %OBJECT% Object. Possible values: BROKER or SERVICE
@rem environment variable %CHECK_ERROR% Error Flag. Possible values: TRUE or FALSE
@rem in case of error the following environment variable provide details about the ↵
Error.
@rem environment variable ETBINFOERROR Error Number returned by ETBINO
@rem environment variable ETBINFOERRORTXT Error text
@rem the following environment variables are set for OBJECT SERVICE and OBJECT BROKER
@rem environment variable %ENV% logical name of environment
@rem environment variable %BNAME% logical name of Broker
@rem environment variable %BID% Broker ID
@rem the following environment variables are only set for OBJECT SERVICE
@rem environment variable %SNAME% logical service name
@rem environment variable %CLASS% Class
@rem environment variable %SERVER% Server
@rem environment variable %SERVICE% Service
```