Administrating EntireX CICS® ECI RPC Server

The EntireX CICS® ECI RPC Server allows standard RPC clients to communicate with CICS programs running on IBM CICS® version 3.2 and higher. The CICS ECI RPC Server transforms the RPCs from the clients into messages to CICS ECI. The CICS ECI RPC Server acts on one side as an RPC server and on the other side as a client for CICS ECI. The CICS ECI RPC Server is a Java-based component that can run on a different host to the one where CICS is running. This allows it to operate with a zero footprint of EntireX on the CICS host.

This chapter covers the following topics:

- Customizing the CICS ECI RPC Server

- Configuring the RPC Server Side

- Configuring the CICS ECI Side

- Starting the CICS ECI RPC Server

- Stopping the CICS ECI RPC Server

- Application Identification

Customizing the CICS ECI RPC Server

For the setup of the CICS ECI RPC Server there are

- a configuration file and

- scripts to start the CICS ECI RPC Server.
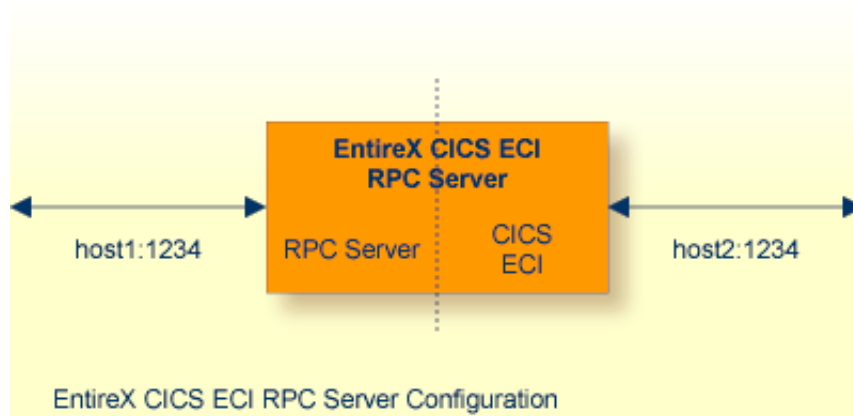
Location of the CICS ECI RPC Server

The CICS ECI RPC Server is contained in the file *entirex.jar*.

The Configuration File

The default name of the configuration file is *entirex.cicseci.properties*. The CICS ECI RPC Server searches for this file in the current working directory.

You can set the name of the configuration file with `-Dentirex.server.properties=<your file name>` with "/" as file separator.

The configuration file contains the configuration for both parts of the CICS ECI RPC Server.

EntireX CICS ECI RPC Server Configuration

≫ **To set up the CICS ECI RPC Server**

1. Use the RPC server agent of the System Management Hub.

2. Add the CICS ECI RPC Server as an RPC server.

    See *Administering the EntireX RPC Servers using System Management Hub* under UNIX | Windows for details.

    Or:
    Use the scripts to start the CICS ECI RPC Server.

    Both scripts use the configuration file *entirex.cicseci.properties* in the folder *etc*.

Configuring more than one CICS ECI RPC Server

If you configure more than one CICS ECI RPC Server that connect to the same EntireX Broker, the following items must be distinct:

-   the trace output file (property `entirex.server.logfile`)

-   the monitor port for SMH (property `entirex.server.monitorport`)

-   the log for the Windows Service (property `entirex.server.serverlog`)

-   the trace output file of the SMH agent for RPC servers

Configuring the RPC Server Side

The RPC server side of the CICS ECI RPC Server is configured like the Java RPC Server. The CICS ECI RPC Server uses the properties that start with "entirex.server".

The RPC server side can adjust the number of worker threads to the number of parallel requests. Use the properties `entirex.server.fixedservers`, `entirex.server.maxservers` and `entirex.server.minservers` to configure this scalability.

- If `entirex.server.fixedservers=yes`, the number of `entirex.server.minservers` is started and the server can process this number of parallel requests.

- If `entirex.server.fixedservers=no`, the number of worker threads balances between `entirex.server.minservers` and `entirex.server.maxservers`. This is done by a so-called attach server thread. On startup, the number of worker threads is `entirex.server.minservers`.

If more than `entirex.server.minservers` are waiting for requests, a worker thread stops if its receive call times out. The timeout period is configured with `entirex.server.waitserver`.

Alternatively to the properties, you can use the command-line option. The command-line options have a higher priority than the properties set as Java system properties and these have higher priority than the properties in the configuration file.

Name	Command-line Option	Default Value	Explanation
`entirex.bridge.verbose`		`no`	Verbose/trace mode of CICS ECI RPC Server. Set this to "`yes`" to trace sent to CICS ECI.
`entirex.server.brokerid`	`-broker`	`localhost`	Broker ID
`entirex.server.serveraddress`	`-server`	`RPC/SRV1/CALLNAT`	Server address.
`entirex.server.userid`	`-user`	`CICSECIRPCServer`	The user ID for the Broker for RPC. See `entirex.server.password`.
`entirex.server.fixedservers`		`no`	**no** Use attach server to manage worker threads. **yes** Run minimum number of server threads.
`entirex.server.minservers`		`1`	Minimum number of server threads.
`entirex.server.maxservers`		`32`	Maximum number of server threads.
`entirex.server.restartcycles`	`-restartcycles`	`15`	Number of restart attempts if the Broker is not available. This can be used to keep the CICS ECI RPC Server running while the Broker is down for a short time.
`entirex.server.password`	`-password`		The password for secured access to the Broker. The password is encrypted and written to the property `entirex.server.password.e`. To change the password, set the new password in the properties file (default is `entirex.cicseci.properties`). To disable password encryption set `entirex.server.passwordencrypt=no`. Default for this property is "yes".
`entirex.server.security`	`-security`	`no`	no|yes|auto|name of `BrokerSecurity` object
`entirex.server.encryptionlevel`		`0`	Encryption level. Valid values: 0,1,2.

Name	Command-line Option	Default Value	Explanation
entirex.server.compresslevel	-compresslevel	0	Permitted values (you can enter the text or the numeric value) BEST_COMPRESSION 9 BEST_SPEED 1 DEFAULT_COMPRESSION -1, mapped to 6 DEFLATED 8 NO_COMPRESSION 0 N 0 Y 8
entirex.server.waitattach		600S	Wait timeout for the attach server thread.
entirex.server.waitserver		300S	Wait timeout for the worker threads.
entirex.timeout		20	TCP/IP transport timeout. See *Setting the Transport Timeout* under *Writing Advanced Applications - EntireX Java ACI.*
entirex.server.verbose	-verbose	no	Enable verbose output to the log file.
entirex.server.logfile	-logfile		Name of the log file, default is standard output.
entirex.trace	-trace	0	Trace level (1,2,3).
entirex.server.monitorport	-smhport	0	The port where the server listens for commands from the System Management Hub (SMH). If this port is 0, no port is used and management by the SMH is disabled.

Configuring the CICS ECI Side

These properties are used to configure the connection to CICS ECI.

Alternatively, you can use the command-line option. The command-line options have a higher priority than the properties set as Java system properties and these have higher priority than the properties in the configuration file.

Name	Default Value	Explanation
`cics.host`		Host name of CICS ECI. Mandatory.
`cics.port`		Port number of CICS ECI. Mandatory.
`cics.transaction`		Name of the CICS mirror transaction that will receive transactions. Mandatory.
`entirex.bridge.targetencoding`	`cp037`	Specify the appropriate EBCDIC encoding used by your CICS ECI. This codepage is also used when communicating with the EntireX Broker. **Note:** Enable conversion in the Broker attribute file so the data can be converted correctly, typically by setting service-specific attribute `CONVERSION` to `"SAGTCHA"`. Default `"cp037"` is EBCDIC codepage with full Latin-1 character set.
`cics.sockettimeout`	`10000`	Socket timeout for connection to CICS ECI (in milliseconds).
`cics.userid`		RACF user ID. Maximum 8 bytes (optional).
`cics.password`		RACF password/PassTicket. Maximum 8 bytes (optional).
`cics.sslparams`		SSL parameters (optional). Same syntax as Broker ID.
`cics.mapping.folder`		The folder where the RPC server expects server-side mapping files (EntireX Workbench files with extension .svm). See *Deploying Server-side Mapping Files to the RPC Server* and *Undeploying Server-side Mapping Files to the RPC Server*. There are also client-side mapping files that do not require configuration here. See *Server Mapping Files for COBOL*. If *no* server requires server-side mapping, you can omit this property. If *one* server requires server-side mapping, this property must be specified.

Starting the CICS ECI RPC Server

≫ **To start the CICS ECI RPC Server**

- Use the script *cicseciserver* in the folder *bin* to start the CICS ECI RPC Server. You may customize this file.

  Or:
  Use the RPC server agent in the System Management Hub to configure and start the CICS ECI RPC Server.

  See *Administering the EntireX RPC Servers using System Management Hub* under UNIX | Windows for details.

Stopping the CICS ECI RPC Server

≫ **To stop the CICS ECI RPC Server**

- Use the RPC server agent in the SMH to stop the CICS ECI RPC Server.

  Or:
  Use the agent for the Broker. Use `Deregister` on the service, specified with the property `entirex.server.serveraddress`.

Application Identification

The application identification is sent from the CICS ECI RPC Server to the Broker. It is visible with Broker Command and Information Services.

The identification consists of four parts: name, node, type, and version. These four parts are sent with each Broker call and are visible in the trace information.

For the CICS ECI RPC Server, these values are:

Identification Part	Value
Application name	`ANAME=CICS ECI RPC Server`
Node name	`ANODE=<host name>`
Application type	`ATYPE=Java`
Version	`AVERS=9.5.0.0`