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# Genesys Rules System Deployment Guide

Deploying GRE in Genesys Administrator

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# Deploying GRE in Genesys Administrator

## Prerequisites

To install GRE on Configuration Servers 8.1.0 or later, Genesys Administrator 8.1.0 or later is required.

## Procedure

1. Import the installation package into Genesys Administrator.

### Import the installation package into Genesys Administrator

1. On the Deployment tab of Genesys Administrator, select Import.
2. Select Installation CD-ROM.
3. Click Next.
4. Browse to the MediaInfo.xml file on the CD or the CD image location on the network (the path must be in UNC format).
5. Click Next.
6. To import the installation package, select GRE for your operating system as well as the appropriate type in the list:
  - For Management Framework 8.1, the type is Business Rules Execution Server.
  - For Management Framework 8.0 and earlier, the type is Genesys Generic Server.
7. Select Next to start the import.
8. Click Finish when the import is complete.

2. Install the GRE IP.

## Install the GRE IP

1. Select the Deployment tab in Genesys Administrator. The list of installation packages will now display GRE.
2. Right-click and select **Install Package** for the IP for your operating system and type.
3. Click **Next** to start the installation wizard. The following parameters must be defined/selected:
  - a. Application Name for the GRE application
  - b. Target Host—The host to which the .war file will be copied during the installation procedure
  - c. Working Directory—The directory in which the .war file will be created
  - d. Client Side IP Address (optional)
  - e. Client Side Port (optional)
  - f. Configuration Server hostname
  - g. Configuration Server port

### Important

For a secure connection, the Configuration Server port should be of type **Auto Detect (Upgrade)**.

- h. Connection delay time in seconds
- i. Reconnect Attempts.

### Important

Items *a* through *i* will be written to the `bootstrapconfing.xml` file in the .war file. Any subsequent updates to the parameters will have to be made in that file.

10. On the next screen, enter Connection ID and Connection Port for GRE.
11. Edit the Connection port for the genesys-rules-engine connection. The Connection Port is the connector port of the servlet container. For example, on Tomcat the default listening port is 8080. The Connection Protocol can be set in the configuration part under Provisioning.
12. Verify the previously defined installation parameters on the Deployment Summary screen.

### 3. Configure the Rules Engine application.

#### Configure the Rules Engine application

1. In the **Server Info** section, verify the default listening port, as well as the connector port on which the Rules Engine Servlet receives requests:

- The **ID** value is the name of the Rules Engine web application. The default name of this application is `genesys-rules-engine`.
  - The **Listening port** is the connector port of the servlet container. For example, on Tomcat the default listening port is 8080.
  - The **Connection Protocol** must be `http`.
- On the **Tenants** tab, add the Tenants that will be available to the Rules Engine.
  - On the **Connections** tab, add a connection to Message Server if you want to use network logging.
  - On the **Options** tab, configure options. In addition to the standard logging options that you can configure, you can configure an option named `fileEncoding` in the **logging** section.

`fileEncoding` specifies the encoding that is to be used during creation of the log file, for example, UTF-8. This value is optional. If you do not specify this option, the server's locale information will determine the log file encoding. This option is available for both GRE and GRAT. Also, the `log4j.properties` file that is included in both components supports a similar option, `log4j.appender.runtime.Encoding`. The `log4j.properties` file is used for initial log configuration prior to the reading of the log configuration from the Configuration Server database.

- There are several optional configuration options in the settings section:

#### Settings in GRE

Description	Valid values	Default value	Takes effect
<b>deployed-rules-directory</b>			
Specifies the directory in which to keep the working copy of deployed rule packages. When a		<code>/GCTI/logs/GRS_Engine</code>	After restart

Description	Valid values	Default value	Takes effect
<p>package is deployed, a copy of the deployed package is placed here. When the rules engine is restarted, all packages defined in this directory are loaded and made available for execution. Specifying a deployed-rules-directory is recommended. If a value is not assigned to the deployed-rules-directory, the rule packages are placed in the WEB-INF\config sub-directory within the genesys-rules-engine web application directory. At this location the deployed rule packages may be deleted when an updated .war file is deployed.</p> <p>If you choose to change the default value, ensure that the path exists and</p>			

Description	Valid values	Default value	Takes effect
that the application server can write to the specified directory.			
<b>max-number-rule-executions</b>			
<p>The maximum number of rules to be executed during a request. This is used to detect unwanted recursion when <code>sequential-mode</code> is false. If this maximum is reached an error is reported.</p> <p>May be set to -1 to denote no maximum.</p>	Any positive integer or -1	10,000	Next rules execution
<b>sequential-mode</b>			
Indicates whether to run the rules engine in sequential mode. In sequential mode, after the initial data set, no more data can be inserted or modified. This allows for the rules engine to	true/false	false	On rules deployment

Description	Valid values	Default value	Takes effect
operate in a simplified way.			
<b>verify-deployer-address</b>			
Indicates whether to verify the TCP address of the application deploying rules to be that of an associated Genesys Rules Authoring Tool.	true/false	true	Immediately
<b>esp-worker-threads</b>			
Specifies the maximum number of worker threads available when using the ESP interface to execute rules.	Any positive integer	5	Immediately
<b>load-packages-on-start</b>			
Indicates whether to load deployed rule packages at application start up. If packages are not loaded at startup (value=false), then a package is loaded on its first execution	true/false	true	Immediately

Description	Valid values	Default value	Takes effect
request.			
<b>json-hierarchical-driver</b>			
With value true, the <code>JsonHierarchicalStreamDriver</code> class is used to serialize JSON responses. With value false, the <code>JettisonMappedXmlDriver</code> class is used. The Jettison driver is unaware of the original data type and will try to detect numerical values and omit the quotes, whereas the <code>JsonHierarchicalStreamDriver</code> will maintain the data type.	true/false	false	Immediately
<b>cache-operational-parameters</b> (new in 8.5.0)			
Operational parameters are rule parameters whose value is obtained at rule execution time. They are configured in GAX as Parameter Groups, and stored in the Configuration	true/false	true	Immediately



Description	Valid values	Default value	Takes effect
<p>Server database. Prior to 8.5, whenever an operational parameter was referenced during the execution of a rule, GRE would fetch the current value from Configuration Server. In high-volume environments, this could put unnecessary stress on Configuration Server.</p> <p>In GRS 8.5, the value of the operational parameters can be cached inside GRE, to make fetching faster. Instead of fetching the value with each reference, GRE will set up a listener to Configuration server and maintain the value in a local cache. When the administrator changes the value</p>			

Description	Valid values	Default value	Takes effect
<p>of the parameter using GAX, GRE will receive an event and update its local cache.</p> <p>If cache-operational-parameters is set to true (default), this new caching mechanism will be enabled.</p> <p>If cache-operational-parameters is set to false, no caching will be used and each reference will fetch the current value from Configuration Server (as was done prior to 8.5).</p>			
<b>parameter-cache-timeout</b> (new in 8.5.0)			
<p>When cache-operational-parameters is set to true, parameter-cache-timeout defines how long (in hours) an operational “parameter</p>	Integer	168	Immediately

Description	Valid values	Default value	Takes effect
group” will remain in the cache. After the timeout expires, the transaction will be removed from the cache until the next time the value is requested. This is used to clean up old subscriptions to parameter groups which are no longer being referenced. The default value for this will be 168 (168 hours = 1 week).			
<b>clear-cache-on-disconnect</b> (new in 8.5.0)			
When cache-operational-parameter is set to true, the clear-cache-on-disconnect parameter defines what the behavior should be if GRE loses connection with the Configuration Server. If clear-cache-on-disconnect is set to false, GRE will	true/false	false	Immediately

Description	Valid values	Default value	Takes effect
continue to use the cached value for any rule evaluations, until such time as the Configuration Server is restored. With this option, there is a risk that GRE could use “stale” values for rule evaluation during the time the connection to Configuration Server is down. If clear-cache-on-disconnect is set to true, the cache will be cleared and a null (“”) value will be used in the rules. With this option, there is potential that rules will fail evaluation during the period that the Configuration Server connection is down.			
<b>include-rule-evaluation-detail-in-response</b> (new in 8.5.001)			
Returns disqualified rules (rules that did not fire), conditions that evaluated	true/false	false	Immediately

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Description	Valid values	Default value	Takes effect
<p>false and rule evaluation time back to the REST client invoking the rule evaluation request. Prior to 8.5.001, only the results of rules that fired were returned.</p> <p>Note: Currently, the rulesDisqualified and executionTime is not returned via ESP to iWD.</p>			

- Save your changes.

### Next Steps

- Deploy the genesys-rules-engine.war file to your application server. See [Deploying the .WAR files](#).