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# Genesys Rules System Deployment Guide

GRE Configuration Options

4/7/2025

# GRE Configuration Options

## Settings in GRE

Description	Valid values	Default value	Takes effect
<b>deployed-rules-directory</b>			
<p>Specifies the directory in which to keep the working copy of deployed rule packages. When a 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 <code>deployed-rules-directory</code> is recommended. If a value is not assigned to the <code>deployed-rules-directory</code>, the rule packages are placed in the <code>WEB-INF\config</code> sub-directory within the <code>genesys-rules-engine</code> web application directory. At this location the deployed rule packages may be deleted when an updated <code>.war</code> file is deployed.</p> <p>If you choose to change the default value, ensure that the path exists and that the application server can write to the specified directory.</p>		/GCTI/logs/GRS_Engine	After restart
<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	true/false	false	On rules deployment

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mode. In sequential mode, after the initial data set, no more data can be inserted or modified. This allows for the rules engine to 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 request.	true/false	true	Immediately
<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 Server database. Prior to 8.5, whenever an operational parameter was referenced	true/false	true	Immediately

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<p>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 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 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).</p>	Integer	168	Immediately
<b>clear-cache-on-disconnect</b> (new in 8.5.0)			
<p>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</p>	true/false	false	Immediately

Description	Valid values	Default value	Takes effect
<p>is set to <code>false</code>, GRE will 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 <code>clear-cache-on-disconnect</code> is set to <code>true</code>, 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.</p>			
<p><b>include-rule-evaluation-detail-in-response</b> (new in 8.5.001)</p>			
<p>Returns rules that did not fire, conditions that evaluated 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 <code>rulesDisqualified</code> and <code>executionTime</code> is not returned via ESP to iWD.</p>	<p>true/false</p>	<p>false</p>	<p>Immediately</p>
<p><b>unload-inactive-package-timeout</b> (new in 8.5.1)</p>			
<p>Specifies the interval (in minutes) after which, if a rule package remains unused by GRE, it is unloaded from memory. If the option is not specified, then packages are loaded in GRE with no timeout. If a request for a rule package is received after the package has been unloaded, it is automatically loaded into memory again and the timer is restarted.</p>	<p>Integer</p>	<p>No default</p>	<p>At GRE start/restart</p>
<p><b>iwd-set-department-from-process</b> (new in 8.5.100.21)</p>			
<p>Enables (value = <code>true</code>), GRE to determine the Department from the properties of its Process, for ESP server requests. The setting of the Department from the Process properties will only occur if the Department is not specified and the business</p>	<p>true/false</p>	<p>false</p>	<p>At GRE start/restart</p>

Description	Valid values	Default value	Takes effect
context level 1 is not specified.			
<b>enable-memory-monitor</b> (implemented in HF 8.5.100.15)			
Enables or disables the Memory Monitor feature.	true/false: Absence of this property or invalid value results in false	false	At GRE start/restart
<b>memory-monitor-interval</b> (implemented in HF 8.5.100.15)			
The interval in seconds between periodic memory usage checks.	integer: min 1	60	At GRE start/restart
<b>memory-monitor-threshold</b> (implemented in HF 8.5.100.15)			
The memory usage threshold expressed as a percentage. If memory usage goes above the threshold, GRE's status.jsp returns HTTP 503 status with a message SYSTEM_STATUS_MEMORY_USAGE_ABOVE_THRESHOLD. Genesys Management layer is also notified about GRE's unavailability via status set in LCA Connection. When memory usage is back below the threshold, GRE's status.jsp returns HTTP 200 status and Genesys Management Layer is notified that GRE is available.	integer: min 40, max 80	70	Immediately
<b>memory-monitor-threshold-strategy</b> (implemented in HF 8.5.100.15)			
Allows you to change the out of memory error handling behavior of memory monitor. <ul style="list-style-type: none"> <li>adaptive—At out-of-memory error, a new threshold is calculated and it is obtained by reducing the configured memory-monitor-adaptive-threshold-safety-margin amount from the percentage memory usage at the time Memory Monitor receives the out-of-memory notification. The threshold is reset</li> </ul>	adaptive/forced	adaptive	Immediately

Description	Valid values	Default value	Takes effect
<p>only if the new calculated value is less than the configured threshold (or less than current override)—for example, if the configured threshold is 80 %, the safety margin is 10 % and if an out-of-memory error notification is retrieved when memory usage is 70 %, the new override threshold will be <math>70 - 10 = 60</math> %. In this scenario, Memory Monitor learned that out-of-memory error can happen at 70 % memory usage, so it adjusts the threshold to be 60 %.</p> <p>The override threshold that the "adaptive" strategy sets can be removed by temporarily setting the strategy to "forced". It must be kept as "forced" for at least the <code>memory-monitor-interval</code> time. The override can also be removed by reducing the configured threshold value so that the new configured value is equal to, or lower than, the override threshold.</p> <p>The override is removed if GRE is restarted, so it is recommended to</p>			

Description	Valid values	Default value	Takes effect
<p>change the configured threshold to match the override threshold before restarting the GRE.</p> <ul style="list-style-type: none"> <li>forced—At out-of-memory error, it does nothing except logging the current memory usage. It forces Memory Monitor to raise an alarm only when memory usage is above the threshold. If using this approach, the threshold must be set low enough so that no out-of-memory errors occur. Temporarily setting this strategy allows the removal of the override threshold set by the "adaptive" strategy.</li> </ul>			
<p><b>memory-monitor-adaptive-threshold-safety-margin</b> (implemented in HF 8.5.100.15)</p>			
<p>The safety margin percentage used by the "adaptive" strategy, when set. The new threshold, set when application memory is exhausted, is obtained by reducing this percentage amount from the percentage memory usage at the time of memory exhaustion.</p>	<p>integer: min 10, max 30</p>	<p>10</p>	<p>Immediately</p>