Configurations Options Reference Manual

Management Framework Current

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Framework Configuration Options Reference

This document describes the configuration options for the Genesys 8.5 Framework components, which you must configure in the Configuration Layer. This document is designed to be used along with the *Framework Deployment Guide*.

Configuration options, enabled when a component starts up, define that component's configuration. You set configuration option values in Genesys Administrator, where indicated by the "Setting Configuration Options" section for each component. Any mandatory options are listed in the "Mandatory Options" section for each component. For applications that are configured by configuration files, namely Configuration Server and Local Control Agent, set options in the respective configuration file for the application.

The options in the current document are divided by sections, as they are in a component configuration. Section names are set by default; changing them is not recommended.

Configuration Server Proxy Options

Local Control Agent (LCA) Options

Genesys Deployment Agent (GDA) Options

Message Server Options

Solution Control Server Options

SNMP Master Agent Options

Host Options

Tenant and User Options

TLS Configuration Options

This chapter describes configuration options that are used to configure Transport Layer Security (TLS) to enable data transport across secured connections and through secured ports. For more information about TLS and how to implement it, see “Protection of Data in Transport” in the *Genesys 8.5 Security Deployment Guide*. Unless otherwise noted, the options described in this chapter are common to all Framework server components. They may also be used by other Genesys server applications; refer to product-specific documentation to determine if these options apply to your product.

This chapter contains the following sections:

> **Warning**
> Use information provided in this chapter as a reference for all TLS options supported by Management Framework. To configure TLS on connections between various Management Framework components using these options, consult the Protection of Data in Transit: Secure Connections (TLS) section in the *Genesys Security Deployment Guide* for particular step-by-step instructions that refer to the place and actual values for which each option should be set for a particular connection.

Setting TLS Configuration Options

Refer to “Where to Set TLS Properties” in the *Genesys Security Deployment Guide* for detailed information about where and how to set TLS-related configuration options.

Use Genesys Administrator 8.1.309 or later when following the procedures described in the Security Guide to set these options correctly and in the right order.

Supported Management Framework TLS Options Reference

This section contains a high-level description of TLS options supported by Management Framework, Use the provided links to get more information about how they are used and in what particular situations.

certificate

Default Value: No default value
Valid Values: On Windows, the thumbprint of a valid TLS certificate; on UNIX, the path to a valid TLS certificate

Specifies the security certificate used to secure connections.

Refer to the appropriate section of the *Genesys Security Deployment Guide*, as follows:

- For Core Framework connections—Securing Core Framework Connections
- For Local Control Agent and Genesys Deployment Agent connections—Securing Local Control Agent Connections
- For Centralized Log connections—Secure Network Logging Connections

certificate-key

Default Value: No default value
Valid Values: Any valid path

Specifies the full path to the Private Key **.pem** file corresponding to the Public Key in the certificate; or, if the Private Key is stored with the certificate, the full path to the certificate **.pem** file.

Refer to the appropriate section of the *Genesys Security Deployment Guide*, as follows:

- For Core Framework connections—Securing Core Framework Connections
- For Local Control Agent and Genesys Deployment Agent connections—Securing Local Control Agent Connections
- For Centralized Log connections—Secure Network Logging Connections

cipher-list

Default Value: No default value
Valid Values: The list of ciphers

Specifies the defined list of ciphers. The cipher list must be in a valid format.

Refer to the appropriate section of the *Genesys Security Deployment Guide*, as follows:

- For Core Framework connections—Securing Core Framework Connections
- For Local Control Agent and Genesys Deployment Agent connections—Securing Local Control Agent Connections
- For Centralized Log connections—Secure Network Logging Connections

client-auth

Default Value: 1
Valid Values: `0, 1`

Specifies whether authentication of the security certificate in the client TLS socket is to be disabled. When set to 1 (default), authentication is enabled. When set to `0`, the client socket does not authenticate the server when connected over TLS.

Refer to the appropriate section of the *Genesys Security Deployment Guide*, as follows:

- For Core Framework connections—Securing Core Framework Connections
- For Local Control Agent and Genesys Deployment Agent connections—Securing Local Control Agent Connections
- For Centralized Log connections—Secure Network Logging Connections

crl

Default Value: No default value
Valid Values: Valid path name

Specifies the path to, and the name of, the file that contains one or more certificates in PEM format, defining the Certificate Revocation List.

Refer to the appropriate section of the *Genesys Security Deployment Guide*, as follows:

- For Core Framework connections—Securing Core Framework Connections
- For Local Control Agent and Genesys Deployment Agent connections—Securing Local Control Agent Connections
- For Centralized Log connections—Secure Network Logging Connections

gda-tls

Default Value: `false`
Valid Values: `false, true`

Specifies whether all communication between Genesys Deployment Agent and its clients must be through a secured connection. Refer to the Securing Local Control Agent Connections section of the *Genesys Security Deployment Guide*.

lca-upgrade

Default Value: `0` (false) Valid Values: `0` (false), `1` (true)

Specifies whether all communication between SCS and LCA must be done through a secured connection.

Refer to the Securing Local Control Agent Connections section of the *Genesys Security Deployment Guide*.

sec-protocol

Default Value: no default value
Valid Values: `TLSv11, TLSv12, TLSv13`

Specifies the protocol used by the component to set up secure connections. Exactly how this option behaves depends on the platform on which the application for which the option is configured is running.

When configured on the Windows platform, this option complements Windows operating system settings that enable and disable a particular secure protocol. If there is a conflict between Windows settings and this option, the operating system settings are used.

On UNIX and Linux platforms, this option controls how the Security Pack on UNIX selects the protocol to use, as shown in the following table.

	Protocol		
option value	TLS 1.1	TLS 1.2	TLS 1.3*
""		+	+
"TLSv11"	+		
"TLSv12"		+	
"TLSv13"			+

*applicable to Genesys Security Pack based on OpenSSL 1.1.1

Refer to the appropriate section of the *Genesys Security Deployment Guide*, as follows:

- For Core Framework connections—Securing Core Framework Connections
- For Local Control Agent and Genesys Deployment Agent connections—Securing Local Control Agent Connections
- For Centralized Log connections—Secure Network Logging Connections

tls

Default Value: `0`
Valid Values: `0, 1`

Specifies whether secured connections are to be used. If set to 1, TLS certificates must be configuredIf set to 0 (the default), certificates are not required, and TLS is not used to secure connections.

tls-mutual

Default Value: 0
Valid Values: 0, 1

Specifies if mutual TLS is used for secure data transfer. If set to 1 on the server side of the connection, the client must also have a certificate configured. If set to 0 (the default), client certificates are not required, and either simple TLS or data encryption (if client-auth=0) is used.

Refer to the appropriate section of the *Genesys Security Deployment Guide*, as follows:

- For Core Framework connections—Securing Core Framework Connections
- For Local Control Agent and Genesys Deployment Agent connections—Securing Local Control Agent Connections
- For Centralized Log connections—Secure Network Logging Connections

tls-target-name

Default Value: No default value
Valid Values: Any string

Specifies the target host name to which the name in remote certificate will be checked against, regardless of whether IP address or FQDN is used for the connection.

tls-target-name-check

Default Value: no
Valid Values: no, host

Specifies if the Common Name in the subject field and/or the Subject Alternate Names of the server's certificate will be compared to the target host name (option value host). If they are not identical, the connection fails. If the option is set to no, a comparison is not made, and the connection is allowed.

Refer to the appropriate section of the *Genesys Security Deployment Guide*, as follows:

- For Core Framework connections—Securing Core Framework Connections
- For Local Control Agent and Genesys Deployment Agent connections—Securing Local Control Agent Connections
- For Centralized Log connections—Secure Network Logging Connections

trusted-ca

Default Value: No default value
Valid Values: Any valid path

Specifies the full path to the **ca_cert.pem** file.

Refer to the appropriate section of the *Genesys Security Deployment Guide*, as follows:

- For Core Framework connections—Securing Core Framework Connections
- For Local Control Agent and Genesys Deployment Agent connections—Securing Local Control Agent Connections
- For Centralized Log connections—Secure Network Logging Connections

upgrade

Default Value: `0` (false) Valid Values: `0` (false), `1` (true); corresponding to the numerical equivalent of the lca-upgrade option

> **Important**
>
> Valid values for this option must have no spaces before or after the = delimiter character.

Specifies whether TLS will be used to secure the connection between LCA and SCS. If set to 0 (the default), regular (unsecured) connections will be used.

Refer to the Securing Local Control Agent Connections section of the *Genesys Security Deployment Guide*.

Common Configuration Options

Unless otherwise noted, the common configuration options described in the following sections are common to all Framework server components. They may also be used by other Genesys server applications; refer to product-specific documentation to determine if these options apply to your product.

> **Important**
> Some server applications also support log options that are unique to them. For descriptions of a particular application's unique log options, refer to the documentation for that particular application.

This chapter describes common configuration options as follows:

Setting Configuration Options

Unless specified otherwise, use Genesys Administrator to set common configuration options in the options of the Application object, using the following navigation path:

- `Application` object > `Options` tab > `Advanced View (Options)`

> **Warning**
> Configuration section names, configuration option names, and predefined option values are case-sensitive. Type them in Genesys Administrator exactly as they are documented here.

Mandatory Options

You do not have to configure any common options to start Server applications.

Common Log Options

This page describes common options used to create, view, and otherwise use the Centralized Log facility in Genesys software.

[log] Section

This section must be called **log**.

> **Warning**
> For applications configured via a configuration file, changes to log options take effect after the application is restarted.

buffering

Default Value: `true`
Valid Values:

`true`	Enables buffering
`false`	Disables buffering

Changes Take Effect: Immediately

Turns on/off operating system file buffering. The option is applicable only to the stderr and stdout output (see the Log Output Options section). Setting this option to `true` increases the output performance.

> **Important**
> When buffering is enabled, there might be a delay before log messages appear at the console.

check-point

Default Value: `1`
Valid Values: `0–24`
Changes Take Effect: Immediately

Specifies, in hours, how often the application generates a check point log event, to divide the log into

sections of equal time. By default, the application generates this log event every hour. Setting the option to `0` prevents the generation of `check-point` events.

enable-thread

Default Value: `false`
Valid Values: `true`, `false`
Changes Take Effect: Immediately

Specifies whether to enable or disable the logging thread. If set to `true` (the logging thread is enabled), the logs are stored in an internal queue to be written to the specified output by a dedicated logging thread. This setting also enables the log throttling feature, which allows the verbose level to be dynamically reduced when a logging performance issue is detected. Refer to the *Framework Management Layer User's Guide* for more information about the log throttling feature.

If this option is set to `false` (the logging thread is disabled), each log is written directly to the outputs by the thread that initiated the log request. This setting also disables the log throttling feature.

expire

Default Value: `10`
Valid Values:

`false`	No expiration; all generated segments are stored.
`<number> file` or `<number>`	Sets the maximum number of log files to store. Specify a number from `1`–`1000`.
`<number> day`	Sets the maximum number of days before log files are deleted. Specify a number from `1`–`100`.

Changes Take Effect: Immediately

Determines whether log files expire. If they do, sets the measurement for determining when they expire, along with the maximum number of files (segments) or days before the files are removed. This option is ignored if log output is not configured to be sent to a log file.

> **Important**
> If the option's value is set incorrectly—out of range of the valid values— it will be automatically reset to `10`.

keep-startup-file

Default Value: `false`
Valid Values:

`false`	No startup segment of the log is kept.
`true`	A startup segment of the log is kept. The size of the segment equals the value of the **segment** option.

`<number> KB`	Sets the maximum size, in kilobytes, for a startup segment of the log.
`<number> MB`	Sets the maximum size, in megabytes, for a startup segment of the log.

Changes Take Effect: After restart

Specifies whether a startup segment of the log, containing the initial configuration options, is to be kept. If it is, this option can be set to `true` or to a specific size. If set to `true`, the size of the initial segment will be equal to the size of the regular log segment defined by the **segment** option. The value of this option will be ignored if segmentation is turned off (that is, if the **segment** option is set to `false`).

memory

Default Value: No default value
Valid Values: <string> (memory file name)
Changes Take Effect: Immediately

Specifies the name of the file to which the application regularly prints a snapshot of the memory output, if it is configured to do this (see Log Output Options). The new snapshot overwrites the previously written data. If the application terminates abnormally, this file will contain the latest log messages. Memory output is not recommended for processors with a CPU frequency lower than 600 MHz.

> **Important**
>
> If the file specified as the memory file is located on a network drive, the application does not create a snapshot file (with the extension ***.memory.log**). Logging output to a file at a network location is not recommended and could cause performance degradation.

memory-storage-size

Default Value: `2 MB`
Valid Values:

`<number> KB` or `<number>`	The size of the memory output, in kilobytes. The minimum value is 128 KB.
`<number> MB`	The size of the memory output, in megabytes. The maximum value is 64 MB.

Changes Take Effect: When memory output is created

Specifies the buffer size for log output to the memory, if configured. See also Log Output Options.

message-format

Default Value: `short`
Valid Values:

`short`	An application uses compressed headers when writing log records in its log file.
`full`	An application uses complete headers when writing log records in its log file.

Changes Take Effect: Immediately

Specifies the format of log record headers that an application uses when writing logs in the log file. Using compressed log record headers improves application performance and reduces the log file's size. With the value set to `short`:

- A header of the log file or the log file segment contains information about the application (such as the application name, application type, host type, and time zone), whereas single log records within the file or segment omit this information.
- A log message priority is abbreviated to `Std`, `Int`, `Trc`, or `Dbg`, for Standard, Interaction, Trace, or Debug messages, respectively.
- The message ID does not contain the prefix `GCTI` or the application type `ID`.

A log record in the full format looks like this:

```
2002-05-07T18:11:38.196 Standard localhost cfg_dbserver GCTI-00-05060 Application started
```

A log record in the short format looks like this:

```
2002-05-07T18:15:33.952 Std 05060 Application started
```

> **Important**
> Whether the full or short format is used, time is printed in the format specified by the **time_format** option.

messagefile

Default Value: As specified by a particular application
Valid Values: Any valid message file (**<filename>.lms**)
Changes Take Effect: Immediately, if an application cannot find its ***.lms** file at startup

Specifies the file name for application-specific log events. The name must be valid for the operating system on which the application is running. The option value can also contain the absolute path to the application-specific ***.lms** file. Otherwise, the application looks for the file in its working directory.

> **Warning**
> An application that does not find its ***.lms** file at startup cannot generate application-specific log events and send them to Message Server.

no-memory-mapping

Default Value: `false`
Valid Values: `true`, `false`
Changes Take Effect: At restart

Specifies if memory-mapped files, including memory log output (with file extension **.memory.log**) and snapshot files (with file extension **.snapshot.log**) are disabled for file outputs.

print-attributes

Default Value: `false`
Valid Values:

`true`	Attaches extended attributes, if any exist, to a log event sent to log output.
`false`	Does not attach extended attributes to a log event sent to log output.

Changes Take Effect: Immediately

Specifies whether the application attaches extended attributes, if any exist, to a log event that it sends to log output. Typically, log events of the Interaction log level and Audit-related log events contain extended attributes. Setting this option to `true` enables audit capabilities, but negatively affects performance.

Genesys recommends enabling this option for Solution Control Server and Configuration Server when using audit tracking. For other applications, refer to *Framework Combined Log Events Help* to find out whether an application generates Interaction-level and Audit-related log events; if it does, enable the option only when testing new interaction scenarios.

segment

Default Value: `100 MB`
Valid Values:

`false`	No segmentation is allowed.
`<number> KB` or `<number>`	Sets the maximum segment size, in kilobytes. The minimum segment size is `100 KB`.

`<number> MB`	Sets the maximum segment size, in megabytes.
`<number> hr`	Sets the number of hours for the segment to stay open. The minimum number is `1 hour`.

Changes Take Effect: Immediately

Specifies whether there is a segmentation limit for a log file. If there is, sets the mode of measurement, along with the maximum size. If the current log segment exceeds the size set by this option, the file is closed and a new one is created. This option is ignored if log output is not configured to be sent to a log file.

snapshot

Default Value: No value
Valid Values:

No value or not specified (default)	Snapshot is created in log output folder.
`<path>/<folder>`	Full or relative path and folder in which snapshot is created.

Changes Take Effect: Immediately

A snapshot file is created for each log output file to temporarily store logs that have not been flushed to the log file. This option specifies the folder, either a full path or a path relative to the application's working directory, in which the application creates the memory-mapped snapshot file associated with the log file. If this option is not configured, or a value is not specified (the default), the file is created in the log output folder.

> **Important**
> Do not write the snapshot file to a network drive, because disconnection of the network drive might cause application failure. If the application detects that the output folder is a network drive, the snapshot file will be disabled. However, this detection may not be possible for Storage Area Network (SAN) devices because of operating system limitations.

spool

Default Value: The application's working directory
Valid Values: Any valid folder, with the full path to it
Changes Take Effect: Immediately

Specifies the folder, including full path to it, in which an application creates temporary files related to network log output. If you change the option value while the application is running, the change does not affect the currently open network output.

throttle-period

Default Value: `30`

Valid Values: `0–3600`
Changes Take Effect: Immediately

Specifies, in seconds, how long to keep the throttled verbose level. When this period of time has expired, the original log verbose level will be restored when the log queue size has decreased to less than 50% of the threshold.

> **Important**
> This option applies only if **enable-thread** is set to `true`.

throttle-threshold

Default Value: `5000`
Valid Values: `0–10000`
Changes Take Effect: Immediately

Specifies the size of the internal log queue at which the verbose level is to be reduced so as to lessen the load generated by logging. If this option is set to `0` (zero), throttling does not occur. For more information about log throttling, refer to the *Framework Management Layer User's Guide*.

> **Important**
> This option applies only if enable-thread is set to `true`.

time_convert

Default Value: `Local`
Valid Values:

`local`	The time of log record generation is expressed as a local time, based on the time zone and any seasonal adjustments. Time zone information of the application's host computer is used.
`utc`	The time of log record generation is expressed as Coordinated Universal Time (UTC).

Changes Take Effect: Immediately

Specifies the system in which an application calculates the log record time when generating a log file. The time is converted from the time in seconds since 00:00:00 UTC, January 1, 1970.

time_format

Default Value: `time`
Valid Values:

`time`	The time string is formatted according to the

	`HH:MM:SS.sss` (hours, minutes, seconds, and milliseconds) format.
`locale`	The time string is formatted according to the system's locale.
`ISO8601`	The date in the time string is formatted according to the ISO 8601 format. Fractional seconds are given in milliseconds.

Changes Take Effect: Immediately

Specifies how to represent, in a log file, the time when an application generates log records.

A log record's time field in the ISO 8601 format looks like this: `2001-07-24T04:58:10.123`

verbose

Default Value: `all`
Valid Values:

`all`	All log events (that is, log events of the Standard, Trace, Interaction, and Debug levels) are generated.
`debug`	The same as `all`.
`trace`	Log events of Trace level and higher (that is, log events of Standard, Interaction, and Trace levels) are generated, but log events of the Debug level are not generated.
`interaction`	Log events of Interaction level and higher (that is, log events of Standard and Interaction levels) are generated, but log events of Trace and Debug levels are not generated.
`standard`	Log events of Standard level are generated, but log events of Interaction, Trace, and Debug levels are not generated.
`none`	No log output is produced.

Changes Take Effect: Immediately

Specifies if log output is created, and if so, the minimum level of log events generated. Log event levels, starting with the highest priority level, are Standard, Interaction, Trace, and Debug. See also Log Output Options.

> **Important**
> For definitions of the Standard, Interaction, Trace, and Debug log levels, refer to the *Management Layer User's Guide* or *Framework Genesys Administrator Help*.

Log Output Options

To configure log outputs, set log level options (all, alarm, standard, interaction, trace, and/or debug) to the desired types of log output (stdout, stderr, network, memory, and/or [filename], for log file output).

You can use:

- One log level option to specify different log outputs.
- One log output type for different log levels.
- Several log output types simultaneously, to log events of the same or different log levels.

You must separate the log output types by a comma when you are configuring more than one output for the same log level. See Examples.

Warning

- If you direct log output to a file on the network drive, an application does not create a snapshot log file (with the extension *.snapshot.log) in case it terminates abnormally.
- Directing log output to the console (by using the stdout or stderr settings) can affect application performance. Avoid using these log output settings in a production environment.

Important

The log output options are activated according to the setting of the verbose configuration option.

all

Default Value: No default value Valid Values (log output types):

`stdout`	Log events are sent to the Standard output (stdout).
`stderr`	Log events are sent to the Standard error output (stderr).
`network`	Log events are sent to Message Server, which can reside anywhere on the network. Message Server stores the log events in the Log Database. Setting the all log level option to the network output enables an application to send log events of the Standard, Interaction, and Trace levels to Message Server. Debug-level log events are neither sent to Message Server nor stored in the Log Database.
`memory`	Log events are sent to the memory output on the local disk. This is the safest output in terms of application performance.

`[filename]`	Log events are stored in a file with the specified name. If a path is not specified, the file is created in the application's working directory.

Changes Take Effect: Immediately

Specifies the outputs to which an application sends all log events. The log output types must be separated by a comma when more than one output is configured. For example: `all = stdout, logfile`

> **Important**
>
> To ease the troubleshooting process, consider using unique names for log files that different applications generate.

alarm

Default Value: No default value
Valid Values (log output types):

`stdout`	Log events are sent to the Standard output (stdout).
`stderr`	Log events are sent to the Standard error output (stderr).
`network`	Log events are sent to Message Server, which can reside anywhere on the network. Message Server stores the log events in the Log Database.
`memory`	Log events are sent to the memory output on the local disk. This is the safest output in terms of application performance.
`[filename]`	Log events are stored in a file with the specified name. If a path is not specified, the file is created in the application's working directory.

Changes Take Effect: Immediately

Specifies the outputs to which an application sends the log events of the Alarm level. The log output types must be separated by a comma when more than one output is configured. For example: `alarm = stderr, network`

standard

Default Value: No default value Valid Values (log output types):

`stdout`	Log events are sent to the Standard output (stdout).
`stderr`	Log events are sent to the Standard error output (stderr).
`network`	Log events are sent to Message Server, which can reside anywhere on the network. Message Server stores the log events in the Log Database.
`memory`	Log events are sent to the memory output on the local disk. This is the safest output in terms of application performance.
`[filename]`	Log events are stored in a file with the specified name. If a path is not specified, the file is

	created in the application’s working directory.

Changes Take Effect: Immediately

Specifies the outputs to which an application sends the log events of the Standard level. The log output types must be separated by a comma when more than one output is configured. For example: `standard = stderr, network`

interaction

Default Value: No default value Valid Values (log output types):

`stdout`	Log events are sent to the Standard output (stdout).
`stderr`	Log events are sent to the Standard error output (stderr).
`network`	Log events are sent to Message Server, which can reside anywhere on the network. Message Server stores the log events in the Log Database.
`memory`	Log events are sent to the memory output on the local disk. This is the safest output in terms of application performance.
`[filename]`	Log events are stored in a file with the specified name. If a path is not specified, the file is created in the application’s working directory.

Changes Take Effect: Immediately

Specifies the outputs to which an application sends the log events of the Interaction level and higher (that is, log events of the Standard and Interaction levels). The log outputs must be separated by a comma when more than one output is configured. For example: interaction = stderr, network

trace

Default Value: No default value Valid Values (log output types):

`stdout`	Log events are sent to the Standard output (stdout).
`stderr`	Log events are sent to the Standard error output (stderr).
`network`	Log events are sent to Message Server, which can reside anywhere on the network. Message Server stores the log events in the Log Database.
`memory`	Log events are sent to the memory output on the local disk. This is the safest output in terms of application performance.
`[filename]`	Log events are stored in a file with the specified name. If a path is not specified, the file is created in the application’s working directory.

Changes Take Effect: Immediately

Specifies the outputs to which an application sends the log events of the Trace level and higher (that is, log events of the Standard, Interaction, and Trace levels). The log outputs must be separated by a comma when more than one output is configured. For example: `trace = stderr, network`

debug

Default Value: No default value Valid Values (log output types):

`stdout`	Log events are sent to the Standard output (stdout).
`stderr`	Log events are sent to the Standard error output (stderr).
`network`	Log events are sent to Message Server, which can reside anywhere on the network. Message Server stores the log events in the Log Database.
`memory`	Log events are sent to the memory output on the local disk. This is the safest output in terms of application performance.
`[filename]`	Log events are stored in a file with the specified name. If a path is not specified, the file is created in the application's working directory.

Changes Take Effect: Immediately

Specifies the outputs to which an application sends the log events of the Debug level and higher (that is, log events of the Standard, Interaction, Trace, and Debug levels). The log output types must be separated by a comma when more than one output is configured—for example: `debug = stderr, /usr/local/genesys/logfile`

> **Important**
>
> Debug-level log events are never sent to Message Server or stored in the Log Database.

Log File Extensions

You can use the following file extensions to identify log files that an application creates for various types of output:

- `*.log`—Assigned to log files when you configure output to a log file. For example, if you set `standard = confservlog` for Configuration Server, it prints log messages into a text file called `confservlog.<time_stamp>.log`.
- `*.qsp`—Assigned to temporary (spool) files when you configure output to the network but the network is temporarily unavailable. For example, if you set `standard = network` for Configuration Server, it prints log messages into a file called `confserv.<time_stamp>.qsp` during the time the network is not available.
- `*.snapshot.log`—Assigned to files that contain the output snapshot when you configure output to a log file. The file contains the last log messages that an application generates before it terminates abnormally. For example, if you set `standard = confservlog` for Configuration Server, it prints the last log message into a file called `confserv.<time_stamp>.snapshot.log` in case of failure.

> **Important**
>
> Provide `*.snapshot.log` files to Genesys Customer Care when reporting a problem.

- `*.memory.log`—Assigned to log files that contain the memory output snapshot when you configure output to memory and redirect the most recent memory output to a file. For example, if you set `standard = memory` and `memory = confserv` for Configuration Server, it prints the latest memory output to a file called `confserv.<time_stamp>.memory.log`.

Examples

This section presents examples of a **log** section that you might configure for an application when that application is operating in production mode and in two lab modes, debugging and troubleshooting.

Production Mode Log Section

```
[log]
verbose = standard
standard = network, logfile
```

With this configuration, an application only generates the log events of the `Standard` level and sends them to Message Server and to a file named `logfile`, which the application creates in its working directory. Genesys recommends that you use this or a similar configuration in a production environment.

> **Important**
>
> Directing log output to the console (by using the `stdout` or `stderr` settings) can affect application performance. Avoid using these log output settings in a production environment.

Lab Mode Log Section

```
[log]
verbose = all
all = stdout, /usr/local/genesys/logfile
trace = network
```

With this configuration, an application generates log events of the `Standard`, `Interaction`, `Trace`, and Debug levels, and sends them to the standard output and to a file named `logfile`, which the application creates in the **/usr/local/genesys/** directory. In addition, the application sends log events of the `Standard`, `Interaction`, and `Trace` levels to Message Server. Use this configuration to test new interaction scenarios in a lab environment.

Failure-Troubleshooting Log Section

```
[log]
verbose = all
standard = network
all = memory
memory = logfile
memory-storage-size = 32 MB
```

With this configuration, an application generates log events of the `Standard` level and sends them to Message Server. It also generates log events of the `Standard`, `Interaction`, `Trace`, and `Debug` levels, and sends them to the memory output. The most current log is stored to a file named `logfile`, which the application creates in its working directory. Increased memory storage allows an application to save more of the log information generated before a failure.

> **Important**
>
> If you are running an application on UNIX, and you do not specify any files in which to store the memory output snapshot, a core file that the application produces before terminating contains the most current application log. Provide the application's core file to Genesys Customer Care when reporting a problem.

Debug Log Options

The options in this section enable you to generate Debug logs containing information about specific operations of an application.

x-conn-debug-all

Default Value: `0`
Valid Values:

`0`	Log records are not generated.
`1`	Log records are generated.

Changes Take Effect: After restart

Generates `Debug` log records about open connection, socket select, timer creation and deletion, write, security-related, and DNS operations, and connection library function calls. This option is the same as enabling or disabling all of the previous **x-conn-debug-**<*op type*> options.

> **Important**
>
> Use this option only when requested by Genesys Customer Care.

x-conn-debug-api

Default Value: 0
Valid Values:

0	Log records are not generated.
1	Log records are generated.

Changes Take Effect: After restart

Generates Debug log records about connection library function calls.

> **Warning**
> Use this option only when requested by Genesys Customer Care.

x-conn-debug-dns

Default Value: 0
Valid Values:

0	Log records are not generated.
1	Log records are generated.

Changes Take Effect: After restart

Generates Debug log records about DNS operations.

> **Warning**
> Use this option only when requested by Genesys Customer Care.

x-conn-debug-open

Default Value: 0
Valid Values:

0	Log records are not generated.
1	Log records are generated.

Changes Take Effect: After restart

Generates Debug log records about “open connection” operations of the application.

> **Warning**
> Use this option only when requested by Genesys Customer Care.

x-conn-debug-security

Default Value: `0`
Valid Values:

`0`	Log records are not generated.
`1`	Log records are generated.

Changes Take Effect: After restart

Generates Debug log records about security-related operations, such as Transport Layer Security and security certificates.

> **Warning**
> Use this option only when requested by Genesys Customer Care.

x-conn-debug-select

Default Value: `0`
Valid Values:

`0`	Log records are not generated.
`1`	Log records are generated.

Changes Take Effect: After restart

Generates Debug log records about “socket select” operations of the application.

> **Warning**
> Use this option only when requested by Genesys Customer Care.

x-conn-debug-timers

Default Value: `0`
Valid Values:

0	Log records are not generated.
1	Log records are generated.

Changes Take Effect: After restart

Generates Debug log records about the timer creation and deletion operations of the application.

> **Warning**
> Use this option only when requested by Genesys Customer Care.

x-conn-debug-write

Default Value: 0
Valid Values:

0	Log records are not generated.
1	Log records are generated.

Changes Take Effect: After restart

Generates Debug log records about “write” operations of the application.

> **Warning**
> Use this option only when requested by Genesys Customer Care.

[log-extended] Section

This section must be called **log-extended**.

level-reassign-disable

Default Value: false
Valid Values: true, false
Changes Take Effect: Immediately

When this option is set to true, the original (default) log level of all log events in the **[log-extended]** section are restored. This option is useful when you want to use the default levels, but not delete the customization statements.

level-reassign-<eventID>

Default Value: Default value of log event <eventID>
Valid Values:

alarm	The log level of log event <eventID> is set to Alarm.
standard	The log level of log event <eventID> is set to Standard.
interaction	The log level of log event <eventID> is set to Interaction.
trace	The log level of log event <eventID> is set to Trace.
debug	The log level of log event <eventID> is set to Debug.
none	Log event <eventID> is not recorded in a log.

Changes Take Effect: Immediately

Specifies a log level for log event <eventID> that is different than its default level, or disables log event <eventID> completely. If no value is specified, the log event retains its default level. This option is useful when you want to customize the log level for selected log events.

These options can be deactivated with the **level-reassign-disable** option.

> **Important**
>
> - Use caution when making these changes in a production environment.
> - Depending on the log configuration, changing the log level to a higher priority may cause the log event to be logged more often or to a greater number of outputs. This could affect system performance.
> - Likewise, changing the log level to a lower priority may cause the log event to be not logged at all, or to be not logged to specific outputs, thereby losing important information. The same applies to any alarms associated with that log event.

In addition to the preceding warning, take note of the following:

- Logs can be customized only by release 7.6 (or later) applications.
- When the log level of a log event is changed to any level except none, it is subject to the other settings in the [log] section at its new level. If set to none, it is not logged and is therefore not subject to any log configuration.
- Using this feature to change the log level of a log changes only its priority; it does not change how that log is treated by the system. For example, increasing the priority of a log to Alarm level does not mean that an alarm will be associated with it.
- Each application in a High Availability (HA) pair can define its own unique set of log customizations, but

the two sets are not synchronized with each other. This can result in different log behavior depending on which application is currently in primary mode.

- This feature is not the same as a similar feature in Universal Routing Server (URS) release 7.2 (or later). In this Framework feature, the priority of log events are customized. In the URS feature, the priority of debug messages only are customized. Refer to the Universal Routing Reference Manual for more information about the URS feature.
- You cannot customize any log event that is not in the unified log record format. Log events of the Alarm, Standard, Interaction, and Trace levels feature the same unified log record format.

Example

This is an example of using customized log level settings, subject to the following log configuration:

```
[log]
verbose=interaction
all=stderr
interaction=log_file
standard=network
```

Before the log levels of the log are changed:

- Log event 1020, with default level `standard`, is output to `stderr` and `log_file`, and sent to Message Server.
- Log event 2020, with default level `standard`, is output to `stderr` and `log_file`, and sent to Message Server.
- Log event 3020, with default level `trace`, is not generated.
- Log event 4020, with default level `debug`, is not generated.

Extended log configuration section:

```
[log-extended]
level-reassign-1020=none
level-reassign-2020=interaction
level-reassign-3020=interaction
level-reassign-4020=standard
```

After the log levels are changed:

- Log event 1020 is disabled and not logged.
- Log event 2020 is output to `stderr` and `log_file`.
- Log event 3020 is output to `stderr` and `log_file`.
- Log event 4020 is output to `stderr` and `log_file`, and sent to Message Server.

Common Security Options

Common security options are used to implement some security features in Genesys software. These options are configured on supporting Application objects. In addition to the options described in this section, also see:

- TLS Configuration Options
- Transport Parameter Options

For information about the security features that use these options, refer to the *Genesys Security Deployment Guide*.

Filtering and/or Tagging Data in Logs

[log-filter] Section

The **log-filter** section contains configuration options used to define the default treatment of filtering data in log output. It defines the treatment of all KV pairs in the User Data, Extensions, and Reasons attributes of the log, and also defines the behavior of selected call handling (such as T-Servers) and reporting applications when processing call related data.

This section must be called **log-filter**.

default-filter-type

Default Value: `copy` Valid Values: One of the following:

`copy`	The keys and values of the KVList pairs in the User Data, Extensions, or Reasons attribute are copied to the log.
`hide`	The keys of the KVList pairs in the User Data, Extensions, or Reasons attribute are copied to the log; the values are replaced with asterisks.
`hide-first,<n>`	The keys of the KVList pairs in the User Data, Extensions, or Reasons attribute are copied to the log; the first <n> characters of the value are replaced with asterisks. If <n> exceeds the number of characters in the value, the number of asterisks will be equal to the number of characters in the value.
`hide-last,<n>`	The keys of the KVList pairs in the User Data, Extensions, or Reasons attribute are copied to the log; the last <n> characters of the value are replaced with asterisks. If <n> exceeds the number of characters in the value, the number of asterisks will be equal to the number of characters in the value.
`skip`	The KVList pairs in the User Data, Extensions, or Reasons attribute are not copied to the log.
`tag[(<tag-prefix>,<tag-`	The KVList pairs in the User Data, Extensions, or Reasons attribute are tagged with the prefix specified by <tag-prefix> and the postfix specified by <tag-postfix>. If

postfix>)]	the two parameters are not specified, the default tags <# and #> are used as prefix and postfix, respectively. To use the default tags, you can use any of the following values: • tag • tag() • tag(,) To define your own tags, replace the two parameters in the value with your tags. Your own tag can be any string up to 16 characters in length; any string longer than that will be truncated. If the string includes a blank space or any of the characters , (comma), (, or) as start and stop characters, they will not be counted as part of the length of the string.
unhide-first,<n>	The keys of the KVList pairs in the User Data, Extensions, or Reasons attribute are copied to the log; all but the first <n> characters of the value are replaced with asterisks. If <n> exceeds the number of characters in the value, the value of the key appears, with no asterisks.
unhide-last,<n>	The keys of the KVList pairs in the User Data, Extensions, or Reasons attribute are copied to the log; all but the last <n> characters of the value are replaced with asterisks. If <n> exceeds the number of characters in the key, the value of the key appears, with no asterisks.

Changes Take Effect: Immediately

Specifies the default way of presenting KVList information (including `UserData`, `Extensions`, and `Reasons`) in the log. This setting will be applied to all KVList pairs in the User Data, Extensions, or Reasons attribute except those that are explicitly defined in the **log-filter-data** section.

Refer to the Hide Selected Data in Logs section in the *Genesys Security Deployment Guide* for information about how to use this option.

filtering

Default Value: `true`
Valid Values: `true, false`
Changes Take Effect: Immediately, if application is subscribed to notifications that this option has been changed.

Enables (`true`) or disables (`false`) log filtering at the Application level.

hide-tlib-sensitive-data

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: After restart of Application

Specifies if an application using the TLibrary protocol must hide details of protocol messages from appearing in the log. Such information might include, for example, information about DTMF digits that are collected when handling customer calls. Refer to documentation for the specific application to confirm that this option is supported by the application, and to determine what data is hidden when the option is set to `true`.

This option does not affect the User Data, Extensions, and Reasons attributes of the log. Use the

default-filter-type option to hide the values of these fields.

[log-filter-data] Section

The **log-filter-data** section defines the treatment of specific KV pairs in the User Data, Extensions, and Reasons attributes of the log. It overrides the general settings in the **log-filter** section.

This section must be called **log-filter-data**.

<key-name>

Default Value: No default value
Valid Values: One of the following:

`copy`	The key and value of the given KVList pair in the User Data, Extensions, or Reasons attribute is copied to the log.
`hide`	The key of the given KVList pair in the User Data, Extensions, or Reasons attribute is copied to the log; the value is replaced with a string of asterisks.
`hide-first,<n>`	The key of the given KVList pair in the User Data, Extensions, or Reasons attribute is copied to the log; the first <n> characters of the value are replaced with asterisks. If <n> exceeds the number of characters in the value, the number of asterisks will be equal to the number of characters in the value.
`hide-last,<n>`	The key of the given KVList pair in the User Data, Extensions, or Reasons attribute is copied to the log; the last <n> characters of the value are replaced with asterisks. If <n> exceeds the number of characters in the value, the number of asterisks will be equal to the number of characters in the value.
`skip`	The KVList pair in the User Data, Extensions, or Reasons attribute is not copied to the log.
`tag[(<tag-prefix>,<tag-postfix>)]`	The KVList pair in the User Data, Extensions, or Reasons attribute is tagged with the prefix specified by <tag-prefix> and the postfix specified by <tag-postfix>. If the two parameters are not specified, the default tags <# and #> are used as prefix and postfix, respectively. To use the default tags, you can use any of the following values: • `tag` • `tag()` • `tag(,)` To define your own tags, replace the two parameters in the value with your tags. Your own tag can be any string up to 16 characters in length, and cannot include a blank space or any of the characters , (comma), (, or). If the string is longer than 16 characters, it will be truncated.
`unhide-first,<n>`	The key of the given KVList pair in the User Data, Extensions, or Reasons attribute is copied to the log; all but the first <n> characters of the value are replaced with asterisks. If <n> exceeds the number of characters in the value, the value of the key appears, with no asterisks.
`unhide-last,<n>`	The key of the given KVList pair in the User Data, Extensions, or Reasons attribute is copied to the log; all but the last <n> characters of the value are replaced with asterisks. If <n> exceeds the number of characters in the value, the value of the key appears, with no asterisks.

Changes Take Effect: Immediately

Specifies the way of presenting the KVList pair defined by the key name in the log. This setting supersedes the default way of KVList presentation as defined in the **log-filter** section for the given KVList pair.

If no value is specified for this option, no additional processing of this data element is performed.

> **Important**
>
> For T-Server `Application` objects, if the T-Server common configuration option **log-trace-flags** is set to `-udata`, it will disable writing of user data to the log regardless of the settings of any options in the **log-filter-data** section. Refer to the documentation for your particular T-Server for information about the **log-trace-flags** option.

Refer to the Hide Selected Data in Logs section in the *Genesys Security Deployment Guide* for information about how to use this option.

TLS and Other Security-related Options

[security] Section

The security section contains configuration options used to specify security elements for your system. In addition to the options specified in this section, refer to TLS Configuration Options for information about TLS-specific configuration options in this section.

This section must be called **security**.

inactivity-timeout

Default Value: `0` Valid Values: Any non-negative integer Changes Take Effect: Immediately

Specifies the amount of time (in minutes) that a user who is logged in to a GUI Application can be inactive before application screens are minimized and the user forced to be re-authenticated. The default value 0 (zero) means that the feature is disabled. For more information about this option, refer to the Inactivity Timeout section of the *Genesys Security Deployment Guide*.

> **Tip**
>
> This option is configured in the options of the GUI Application object.

Secure User Authentication

[security-authentication-rules] Section

The **security-authentication-rules** section contains configuration options that relate to user accounts and user passwords. Refer to the chapter User Passwords in the *Genesys Security Deployment Guide* for full information about how to use these options.

This section must be called **security-authentication-rules**.

no-change-password-at-first-login

Default Value: `false`
Valid Values: `false, true`
Changes Take Effect: At the next attempt to log in to this application

Specifies whether this application supports password change when a user first logs in. If set to `true`, this application can override of the policy of changing passwords at first login. If set to `false` (the default), this application supports password change at first login.

This option does not apply if the **force-password-reset** option is set to true at the Tenant level, enforcing the current policy of changing passwords at first login.

> **Important**
> This option is set in the options of the `Application` object.

[common] Section

This section must be called **common**.

enable-async-dns

Default Value: `0`
Valid Values:

`0`	Disables asynchronous processing of DNS requests.
`1`	Enables asynchronous processing of DNS requests.

Changes Take Effect: Immediately

Enables the asynchronous processing of DNS requests such as, for example, host-name resolution.

> **Important**
>
> - Use this option only when requested by Genesys Customer Care.
> - Use this option only with T-Servers.

enable-ipv6

Default Value: `0`
Valid Values:

`0`	Off (default), IPv6 support is disabled.
`1`	On, IPv6 support is enabled.

Changes Take Effect: Immediately

When set to `1`, specifies that this application supports IPv6. It is set to `0` by default to ensure backward compatibility. Refer to component-specific documentation and the *Framework Deployment Guide* for more information about IPv6 and any specific considerations for deploying IPv6 in your situation.

rebind-delay

Default Value: `10`
Valid Values: `0–600`
Changes Take Effect: After restart

Specifies the delay, in seconds, between socket-bind operations that are being executed by the server. Use this option if the server has not been able to successfully occupy a configured port.

> **Important**
> Use this option only when requested by Genesys Customer Care.

[sml] Section

This section must be called **sml**.

Options in this section are defined in the annex of the Application object, as follows:

- `Application` object > `Options` tab > `Advanced View (Annex)`

> **Warning**
> Use the **hangup-restart**, **heartbeat-period**, and **heartbeat-period-thread-class-<n>** options with great care, and only with those applications for which support of this functionality has been announced. Failure to use these options properly could result in unexpected behavior, from ignoring the options to an unexpected restart of the application.

autostart

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: After restart of the application

Specifies if SCS can start this application automatically every time that SCS establishes a connection with LCA, and if LCA does not report this application as `Started`.

hangup-restart

Default Value: `true`
Valid Values: `true, false`
Changes Take Effect: Immediately

If set to `true` (the default), specifies that LCA is to restart the unresponsive application immediately without any user intervention.

If set to `false`, specifies that LCA is only to generate a notification that the application has stopped responding; the application is not automatically restarted.

> **Important**
> This option is set to `true` automatically in Solution Control Server; any other value is ignored.

heartbeat-period

Default Value: 0
Valid Values:

0	This method of detecting an unresponsive application is not used by this application.
<min value>-604800	Length of timeout, in seconds, where min value is: • 40 seconds for Configuration Server and Solution Control Server. • 10 seconds for applications that support hangup detection if you are using Solution Control Server 8.1.1 (or later).

Changes Take Effect: Immediately

Specifies the maximum amount of time, in seconds, in which heartbeat messages are expected from an application. If Local Control Agent (LCA) does not receive a heartbeat message from the application within this period, it assumes the application is not responding and carries out corrective action.

This option can also be used to specify the maximum heartbeat interval for threads registered with class zero (0). This thread class is reserved for use by the Management Layer only.

> **Important**
> Genesys does not recommend that you set the heartbeat period option for Configuration Server and Solution Control Server if you are using Solution Control Server 8.1.0.(or earlier).

If this option is not configured or is set to zero (0), heartbeat detection is not used by this application.

heartbeat-period-thread-class-<n>

Default Value: None Valid Values:

0	Value specified by heartbeat-period in application is used.
3-604800	Length of timeout, in seconds; equivalent to 3 seconds–7 days.

Changes Take Effect: Immediately

Specifies the maximum amount of time, in seconds, in which heartbeat messages are expected from a thread of class <n> registered by an application. If a heartbeat message from the thread is not received within this period, the thread is assumed to be not responding, and therefore, the

application is unable to provide service.

> **Important**
> Do not set this option to a value less than the **heartbeat-period** option.

If this option is not configured or is set to zero (0), but the application has registered one or more threads of class <n>, the value specified by the value of **heartbeat-period** for the application will also be applied to these threads.

Refer to application-specific documentation to determine what thread classes, if any, are used.

suspending-wait-timeout

Default Value: `10`
Valid Values: `5-600`
Changes Take Effect: Immediately

Specifies a timeout (in seconds) after the Stop Graceful command is issued to an application during which the status of the application should change to `Suspending` if the application supports graceful shutdown. If the status of the application does not change to `Suspending` before the timeout expires, it is assumed that the application does not support graceful shutdown, and it is stopped ungracefully.

Use this option if you are unsure whether the Application supports graceful shutdown.

> **Important**
> Genesys recommends that you do not set this option for any Management Layer component (Configuration Server, Message Server, Solution Control Server, or SNMP Master Agent). These components by definition do not support graceful shutdown, so this option is not required.

Transport Parameter Options

Set options in this section in the `Transport Parameters` of the connection's properties. Transport Parameter options are not associated with a configuration option section, and do not appear in the options or annex of an Application object.

transport Option

In a configuration file, these options appear in the following format: `transport = <option name>=<value>;<option name>=<value> ...`

Collectively, the options make up the parameters of the transport option. When entering the options in Genesys Administrator, only the options are required; `transport =` is prefixed automatically to the list of option/value pairs.

> **Important**
> Valid values for these options must have no spaces before or after the delimiter characters ";" (semi-colon) and "=".

Configuring Client-Side Port Definition

The Transport Parameter options in this section are used to configure client-side port definition, Refer to the chapter Client-Side Port Definition in the *Genesys Security Deployment Guide* for information about how to use these options.

Set these options in the following navigation path in Genesys Administrator:

- `Application` object > `Configuration` tab > `General` section > `Connections` > `<Connection>` > `Connection Info` > `Advanced` tab > `Transport Parameters`

port

Default Value: No default value
Valid Values: A valid port number
Changes Take Effect: After client application restart

The port that the client application uses for its TCP/IP connection to the server.

address

Default Value: No default value
Valid Values: A valid IP address

Optional. Specifies the IP address or host name that a client uses for its TCP/IP connection to the server.

backup-port

Default Value: No default value
Valid Values: A valid port number
Changes Take Effect: After client application restart

In an HA pair, the port on the backup server that the client application will use for its TCP/IP connection to the server.

> **Important**
>
> If the client application servers are in an HA pair, the `port` and `backup-port` values will be propagated from the primary server to the backup. As a result, after switchover, these ports will be in use by another server, so the new primary client application will be unable to open and use them.
>
> To prevent this, Genesys recommends that you do one of the following:
>
> - Locate the backup pair on different hosts.
> - Manually change the `port` and `backup-port` settings for the backup server.

Configuring Mixed IPv4 and IPv6 Environments

For connections with servers that support both IPv4 and IPv6,use the **ip-version** transport parameter option to specify which version to use.

ip-version

Default Value: `4,6`
Valid Values: `4,6` and `6,4`
Changes Take Effect: At restart

Specifies the order in which IPv4 (4) and IPv6 (6) are used for the connection with a server that has a mixed IPv4/IPv6 configuration. This parameter has no effect if the environment variable GCTI_CONN_IPV6_ON or the option **enable-ipv6** is set to `0`.

The following table summarizes how this parameter affects the connection for which it is configured.

Connecting Server	ip-version=4,6	ip-version=6,4
Supports only IPv4	IPv4 is used	IPv4 is used
Supports only IPv4 and IPv6	IPv4 is used	IPv6 is used

Connecting Server	ip-version=4,6	ip-version=6,4
Supports only IPv6	IPv6 is used	IPv6 is used

For more information about IPv6, refer to the Solution Availability and IPv6 sections of the *Framework Deployment Guide*.

Changes in 8.5.x

The following table lists all changes to common configuration options in the 8.5.x release.

Option Name	Option Values	Type of Change	Details
enable-thread	`true, false`	New	
message-format	`short, full`	Renamed	Previously named **message_format**
snapshot	empty string; valid path/ folder name; 0	New	
throttle-period	`0–3600`	New	
throttle-threshold	`0–10000`	New	
dbserver Section (removed)			

Database Access Point Configuration Options

This chapter describes configuration options for a Database Access Point.

This chapter contains the following sections:

Setting Configuration Options

Refer to the description of the particular option for information about where to set its value. Configuration section names, configuration option names, and predefined option values are case-sensitive. Type them in Genesys Administrator exactly as they are documented in this chapter.

Mandatory Options

You do not have to configure any options for a Database Access Point.

[default] Section

This section must be called **default**.

db-request-timeout

Default Value: `0`
Valid Values: `0`–`604800` (in seconds, equivalent to 0 seconds–7 days)
Changes Take Effect: After the application reconnects to the database; no restart is required.

Specifies the period of time, in seconds, that it should take one DBMS request to be completed. If a request to the DBMS takes longer than this period of time, the database client process stops executing, and the application interprets this as a DBMS failure.

> **Important**
> Set this option in Genesys Administrator at the following location:
> Database Access Point `Application` object > `Configuration` tab > `DB Info` section > `Query Timeout` field

[dbclient] Section

This section must be called **dbclient**.

dbclientlimit

Default Value: `4096`
Valid Values: any positive integer
Changes Take Effect: At startup

Specifies the maximum limit for the number of simultaneously running DB Client processes.

> **Important**
>
> Set this option in Genesys Administrator at the following location:
>
> DB Access Point Application object > Options tab > Advanced View (Options)
>
> The maximum DB limit can also be set via an environment variable `GCTI_DB_MAX_NO`

utf8-ucs2

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: At startup

This option applies only if you are working with an MS SQL Log Database that has been initialized as a multi-language database. MS SQL uses UCS-2 encoding instead of UTF-8. Setting this option to true forces the transcoding of UTF-8 to UCS-2 encoding before writing to the MS SQL database, and the transcoding of UCS-2 to UTF-8 encoding after reading from the database. Therefore, the MS SQL database is able to work with other components encoded using UTF-8.

> **Important**
>
> Set this option in Genesys Administrator, at the following location:
> Database Access Point `Application` object **>** `Configuration` tab **>** `UTF-8 for MSSQL` field.

Configuration Server Configuration Options

This chapter describes configuration options and a configuration file for Configuration Server, and includes the following sections:

Setting Configuration Options

You set Configuration Server configuration options in one of two ways:

- Using a configuration file for startup options
- Using Genesys Administrator

> **Warning**
> Configuration section names, configuration option names, and predefined option values are case-sensitive. Type them in the configuration file or Genesys Administrator exactly as they are documented in this chapter.

Using the Configuration File for Startup Options

Using a text editor, enter Configuration Server startup options directly in the configuration file. See Startup Options in Configuration File for descriptions of the startup options.

Using Genesys Administrator for Runtime Options

In Genesys Administrator, set Configuration Server configuration options in the `Advanced View (Options)` view of the Options tab of the Configuration Server `Application` object.

See Runtime Options in Configuration Database for descriptions of the runtime options. Refer to *Genesys Administrator Help* for additional information about the `Options` tab, and how to manage configuration options on it.

Startup Options in Configuration File

These options are located in the Configuration Server configuration file.At first startup of the master Configuration Server, the configuration file is named **confserv.cfg** (on Windows) or **confserv.conf** (on UNIX) by default. This file can be renamed as required, but must be specified by the **-c** command-line option at startup. If there is a Configuration Server section in the configuration file other than **confserv**, you must use the **-c** <*section*> parameter in the command line to make sure that Configuration Server is using configuration settings from that section. The section name must also match the name of the Configuration Server object.

Important

- If you have a configuration file and/or a Configuration Server section with a name other than the default, you must specify the parameters **-c** <`config file name`> and/or **-s** <`Configuration Server section name`> in the command line when starting this instance of Configuration Server.This is in addition to any other command-line options that you want to use, whenever you start Configuration Server or any command-line utility modes provided by Configuration Server.
- Options in the Configuration Server and **dbserver** sections are always read from the configuration file and re-saved to the Configuration Database at each startup. Values from the database are ignored. Genesys Administrator restricts the editing of such options in runtime. Some options in these sections are exempt from this rule, such as the **port** option. See the option descriptions for details.
- Options in the **[log]** section of the configuration file apply up to the point that Configuration Server is fully initialized. After initialization is complete, log options stored in the Configuration Database are applied. You can still use the **[log]** section in the configuration file to change options that are in effect during startup, but be aware that they will be overridden with those in the database.

Mandatory Startup Options

The following table lists the Configuration Server options for which you must provide values; otherwise, Configuration Server will not start. These options are provided during the installation of Configuration Server and then written to the configuration file.

Option Name	Default Value	Details
Configuration Server Section		
port	No default value	Used only during the first start of Configuration Server with an initialized database. Upon subsequent restarts, Configuration Server reads the port information from its Application object in the Configuration Database and ignores the setting of the port option in the configuration file.
server	No default value	
Configuration Database Section		
host	No default value	Used only if dbthread=false, in which case they are mandatory. Refer to Framework 8.1 documentation for descriptions of these options.
port	No default value	
dbengine	No default value	
dbname	No default value	You must specify a value for this option unless dbengine=oracle.
dbserver	No default value	
username	No default value	
password	No default value	Set manually only if you are not using an encrypted password to access the Configuration Database.

Configuration Server Section

This section contains the configuration options of Configuration Server. The name of the section depends on the name of the Configuration Server `Application` object. On the first Configuration Server (named **confserv**), this section is named **confserv**. On other Configuration Servers being installed, this section has the same name as the Configuration Server object.

allow-empty-password

Default Value: `true`
Valid Values: `true, false`
Changes Take Effect: Immediately

Specifies whether Configuration Server allows an empty (blank) password in a client connection request. If the option is set to `false` and the password in a request is not specified, Configuration Server rejects the request and generates a corresponding error message.

> ### Important
> The Tenant option **password-min-length** overrides the value of **allow-empty-password** for all users in the Tenant in which the latter option is configured. Genesys strongly recommends that you use **password-min-length** instead of **allow-empty-password**. The latter has been provided only for purposes of backward compatibility.

Refer to the User Passwords section of the *Genesys Security Deployment Guide* for more information about this option and how to use it.

allow-external-empty-password

Default Value: `true`
Valid Values: `true, false`
Changes Take Effect: Immediately

This option is used only if external authentication is being used.

Specifies whether Configuration Server allows an empty (blank) password in a client connection request when these requests are authenticated externally. When set to `true` (default), Configuration Server will permit an unspecified password in an externally authenticated request.

> ### Important
> There might be instances where an LDAP server, instead of rejecting a blank password, might (depending on the LDAP Server configuration) interpret this to mean

that it should make an unauthenticated connection, giving the false impression that authentication has succeeded. To allow empty passwords in Configuration Server and still avoid this, set the **allow-external-empty-password** option to `false` so that configuration will enforce at least one character in a password sent to an external system.

If the option is set to `false` and the password in a request is not specified, Configuration Server rejects the request and generates a corresponding error message, regardless of the value of the two other options.

Refer to the User Passwords section of the *Genesys Security Deployment Guide* for more information about this option and how to use it.

allow-mixed-encoding

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: After restart

Specifies if Configuration Server checks if the encoding of user interface client applications at client registration matches the current encoding of Configuration Server. If set to `false` (the default), only those interface clients with the same encoding mode can connect to Configuration Server. If set to true, Configuration Server will not check, and the interface client can connect to Configuration Server regardless of its encoding mode.

Important

Be very careful if you are setting this option to true. If a client sends any string data that is encoded differently than the encoding used by Configuration Server, the behavior of Configuration Server will be undefined.

cfglib-connect-tmout

Default Value: `20`
Valid Values: Any integer from `0` to 65536 seconds
Changes Take Effect: After restart

Sets a timeout (in seconds) for this instance of Configuration Server to expect a TCP success or failure response from the remote Configuration Server to which it is connecting. If the connection has not been made when the timeout expires, all pending connection requests are cancelled.

When set to `0` (zero), this timeout is disabled.

The value of this parameter overrides that of the **-cfglib-connect-tmout** command-line parameter.

client-connect-timeout

Default Value: 40
Valid Values: Any positive integer from 1 to 65536
Changes Take Effect: After restart

Specifies the client connection timeout. The client should be authenticated before this timeout expires.

client-record-sync-timeout

Default Value: 0
Valid Values: Any positive integer from 0 to 20
Changes Take Effect: Immediately

Specifies a duration in seconds during which client records from Configuration Server (primary) or Configuration Server Proxy (primary) will be synched to their corresponding Backup Configuration Server in scenarios of switchover or shutdown in primary Configuration Server.

client-response-timeout

Default Value: 600
Valid Values: Positive integer up to 86400 (24 hours)
Changes Take Effect: Immediately

Limits the time, in seconds, during which Configuration Server retains prepared unsent data in its memory. If this timeout expires and the data is still unsent, Configuration Server disconnects the client and discards all the data related to it.

dbthread

Default Value: true
Valid Values: true, false

true	Uses internal database thread. This is the preferred method.
false	Uses separate DB Server, as in releases prior to 8.5.

Changes Take Effect: After restart

Specifies how Configuration Server accesses the Configuration Database.

If set to true, Configuration Server attempts to launch a database client process locally using the options specified in the Configuration Database section, but not the host and port options. This is the preferred method of accessing a database.

If set to false, Configuration Server attempts to use a remote DB Server, as specified in the Configuration Database section, including the host and port options. This was the only way to access a database in releases prior to 8.5. Genesys recommends that you use this method only with older Genesys applications.

decryption-key

Default Value: No default value
Valid Values: Valid path to decryption file
Changes Take Effect: After restart

Specifies the path to an external .pem file containing the RSA key used for decrypting the password to the Configuration Database. The presence of this option, plus **encryption** set to `true`, indicates that the password was encoded using an asymmetric algorithm, with an encryption key from an external file.

Configuration Server creates or updates the value of this option if the **-keys** parameter is specified in the command-line at startup.

Important

- This option is set automatically by Configuration Server. Do not change the value of this option manually, except in the following circumstance.
- If you want to switch back to using an unencrypted Configuration password, set the value of this option to empty (no value) and set the **encryption** option to false, then manually enter the unencrypted password into the Configuration Server configuration file. **Note:** You must have Write access to the Configuration Server configuration file to do this.
- If you then want to revert back to using symmetric encryption, set the value of this option to empty (no value), and restart Configuration Server from the command line using the `-p <name of Configuration Database section> <password>` parameter.

delay-reload-backup

Default Value: `0`
Valid Values: `0` or any positive integer
Changes Take Effect: For the next reconnect to the master

Specifies the reload delay period (in seconds) for the backup Configuration Server Proxies or the master Configuration Server running in the backup mode. You can specify a higher delay period for the backup Configuration Server proxies to ease the load on the master Configuration Server after network outages when multiple clients need to reload data at the same time.

The configured reload delay period applies to the master Configuration Server when it needs to reload data while running in the backup mode or after being switched to backup mode upon a switchover.

This option does not delay initial data load after Configuration Server restart and it does not delay the attempt to restore the previous session to the master Configuration Server. This option takes effect only if an attempt to restore the previous session with the master Configuration Server fails.

> **Tip**
> Specify different delay reload settings for different proxies to establish the order in which proxies initiate reload. You can use this option in conjunction with the **proxy-load-max** option to further delay data reloading process for the proxies.

disable-vag-calculation

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: After restart

Specifies whether Configuration Server calculates Virtual Agent Groups for existing and newly-created objects for the application in which it is configured.

To manage the calculation of Virtual Agent Groups by primary and backup Configuration Servers before and after switchovers, add this option to both the primary and backup Configuration Servers, in the sections with the same name as the corresponding `Application` objects. If this option is set to `true`, Configuration Server does not calculate Virtual Agent Groups for existing and newly-created objects.

> **Important**
> You must set this option to the same value for both the primary and backup Configuration Servers. Then stop and restart both Configuration Servers. You must do this each time you change this option to retain the contents of the Virtual Agent Group.

decryption-padding

Default: If the password is encrypted, PKCS 1 padding is used
Valid Value: OAEP - password is encrypted using OAEP padding
Changes Take Effect: After restart

The presence of this option, together with **encryption** set to `true` and **decryption-key** options, indicates that the configuration database password is encrypted using an asymmetric algorithm with OAEP padding. Configuration Server creates or updates the value of this option when the password is encrypted as described in the section Encrypting the Configuration Database Password of the *Management Framework Deployment Guide*.

> **Important**
> This option is set automatically by Configuration Server. Do not change the value or remove this option manually, except when you are switching back to using an unencrypted configuration database password, as described for the encryption option.

enable-pre-812-security

Default Value: `false`
Valid Values: `false, true`
Changes Take Effect: Immediately

If set to `true`, this option restores pre-8.1.2 security behavior as follows:

- Enables a user, who does not have Change permission on a folder, to move objects from that folder to another location.
- Enables a user, who does not have Change Permissions permission on an object, to change the object's permissions implicitly by moving the object with inherited permissions between folders with different permission.

If set to `false` (the default), both actions are disabled.

> **Important**
> To take effect, this option must be set to `true` in both the **confserv** section of the primary master Configuration Server, and in the corresponding main section of the backup master Configuration Server.

> **Warning**
> Use this option only in exceptional cases, and only as a temporary measure.

encoding

Default Value: `UTF-8`
Valid Values: `UTF-8, UTF-16, ASCII, ISO-8859-1, ISO-8859-2, ISO-8859-3, ISO-8859-4, ISO-8859-5, ISO-8859-6, ISO-8859-7, ISO-8859-8, ISO-8859-9, ebcdic-cp-us, ibm1140, gb2312, Big5, koi8-r, Shift_JIS, euc-kr`
Changes Take Effect: After restart

Sets the UCS (Universal Character Set) transformation format (such as UTF-8, UTF-16, Shift_JIS, and so on) that Configuration Server uses when exporting configuration data into an XML (Extensible Markup Language) file. The Configuration Import Wizard (CIW) must initiate the export operation. If the operating system settings do not support the specified value, Configuration Server uses the default value.

Specify the UTF-8 encoding format unless you are using wide-character codesets (such as Chinese, Japanese, Korean).

Important

In single-language format on UNIX platforms, the value of this option must match the value defined by the LANG environment variable (or derived from the values of the LC_ALL and LC_CTYPE environment variables as specified in the vendor documentation). On the Solaris platform, you might be required to set the environment variable GCTI_TRANSLOCALCP to the value that represents the current local system encoding name (returned by the `iconv -l` command). You must set this Genesys-specific variable only if, in your environment, the value returned by the command does not match the codepage name specified in system locale settings (`LANG, LC_ALL, or LC_CTYPE`) on Solaris.

encryption

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: After restart

When set to `true`, the values of the password options in all Configuration Database sections are interpreted as being encrypted. Configuration Server decrypts the value when reading its configuration file at startup, accesses the Configuration Database using the decrypted value, and prints an encrypted string of characters as the password value into the log.

This option is set to `true` automatically by Configuration Server when the **-p** parameter is specified in the startup command line.

Important

- This option is set automatically by Configuration Server. Do not change the value of this option manually, except in the following circumstance.
- If you want to switch back to using an unencrypted Configuration password, set the value of this option to `false` and set the **decryption-key** option to empty (no value), then manually enter the unencrypted password into the Configuration Server configuration file. Note: You must have Write access to the Configuration Server configuration file to do this.

fix_cs_version_7x

Default Value: `true`
Valid Values: `true, false`
Changes Take Effect: After restart

Use this option when using a master Configuration Server running release 8.0.3 (or later) with a Configuration Server Proxy running release 8.1.1 (or earlier). Setting this option to true enables the master Configuration Server to treat Configuration Server Proxy as running an equivalent schema.

This prevents Configuration Server Proxy from using an incorrect schema and reading configuration data incorrectly.

> **Important**
>
> If you are trying to run a Configuration Server Proxy release 8.1.1 (or earlier) with a Master Configuration Server 8.x, make sure that this option is set to `true` before setting up the connection between the two servers. Otherwise, the configuration schema of Configuration Server Proxy will be incorrect, and you will have to reinstall Configuration Server Proxy. However, note that Genesys strongly recommends that Configuration Server and Configuration Server proxy be running the same version of software. The only exception is during migration, in which case the servers can run different version but only until migration is complete.

force-md5

Default Value: `false`
Valid Values: `false, true`
Changes Take Effect: After next login

Specifies whether Configuration Server uses the MD5 hashing algorithm to hash user passwords. MD5 was the default algorithm prior to Management Framework 8.1.2, when it was replaced by the SHA256 algorithm. If set to `false` (the default), all new and changed passwords will be hashed using SHA256. If set to `true`, all new and existing passwords will be hashed using MD5.

Use this option if you are running Configuration Server Proxy 8.1.0 (or earlier) that supports MD5, and a master Configuration Server8.1.1 (or later) that supports SHA256. In this case, the two servers can be running together long enough to encounter password requests. Because they use two different hashing algorithms, the master Configuration Server will be unable to process the requests. You must force Configuration Server to use MD5 by setting the **force-md5** option to `true` in the **confserv** section of the master Configuration Server.

> **Important**
>
> Genesys does not recommend that you run a newer version of Configuration Server with an earlier version of Configuration Server Proxy. However, this situation is allowed for a short time during migration.

Refer to the User Passwords section of the *Genesys Security Deployment Guide* for more information about this option and how to use it.

langid

Default Value: No default value
Valid Values: Valid integer from list of LCID to language mappings
Changes Take Effect: After restart

This option is mandatory for Configuration Server operating in single-language mode with Configuration Database in 8.5 format, and specifies the language used by Configuration Server. This option is ignored by Configuration Server in multi-language mode, or when working with Configuration Database in 8.1 format.

Set this option in the configuration file of Configuration Server. If Configuration Server Proxies are configured, set this option in only the master Configuration Server; the proxy servers determine the language used in a single-language environment automatically, based on the response they receive from the master Configuration Server to which they are connected.

When Configuration Server and the Configuration Database are installed using the default (English) initialization scripts, this option must be set to 1033 (English, ENU) in the configuration file. If any Configuration Server Language Packs are applied to the single-language Configuration Database, the value of this option value be changed to match the value of one of the Language Packs, as given in the following table.

Language	Value of languid
English (ENU)	1033
Chinese (Simplified) (CHS)	2052
French (France) (FRA)	1036
German (DEU)	1031
Korean (KOR)	1042
Japanese (JPN)	1041
Portuguese (Brazil) (PTB)	1046
Spanish (Mexico) (ESM)	2058

For more information about installing and using Language Packs for the Configuration Database, refer to the Configuration Database section of the *Framework Deployment Guide*.

last-login

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: After restart

Specifies whether the Last Logged In Display feature is to be used. If set to `true`, the feature is used for this Configuration Server. Last Logged In information is sent to its clients, and is stored and displayed by Genesys graphical user interfaces that support this feature.

If set to `false` (the default), this feature is not used for this Configuration Server.

For more information about the Last Logged In Display feature and this option, see the “Last Logged In Display” topic in the *Genesys Security Deployment Guide*.

last-login-synchronization

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: After restart

Specifies whether Last Logged In information is synchronized between this Configuration Server or Configuration Server Proxy and others in the environment. If set to `true`, this Configuration Server or Configuration Server Proxy sends notifications about changes in Last Logged In information to others in the configuration.

If set to `false` (the default), Last Logged In information is not synchronized between this Configuration Server or Configuration Server Proxy and others in the configuration.

This option is ignored if the last-login option is set to `false`.

For more information about the Last Logged In Display feature and this option, see the "Last Logged In Display" topic in the *Genesys Security Deployment Guide*.

locale

Default Value: No default value
Valid Values: Any valid locale name or abbreviation
Changes Take Effect: After restart

Specifies the locale setting that Configuration Server uses for date/time/currency format (where applicable). It also affects encoding that is selected by Configuration Server in single-language mode when transforming configuration object information from internal representation for export to an XML file. If you do not specify the option, Configuration Server uses the default operating system setting.

Genesys recommends that you rely on operating system settings for locale selection, instead of this Genesys option. If you do have to set it up here, select values for this option from the official Microsoft locale list. For example, for English, specify `english` or `eng`; for Japanese, specify `japan` or `jpn`; and so on. For UNIX, consult the vendor documentation for your operating system.

The specified locale value must be supported by your operating system, and must match the value that is defined by the LANG environment variable (or derived from the values of the `LC_ALL` and `LC_CTYPE` environment variables, as specified in the vendor documentation). When this option is set, its value must also be aligned with the **encoding** option; that is, the locale in use must activate the same encoding as specified by that option.

> **Important**
>
> On the Solaris platform, you might be required to set the environment variable `GCTI_TRANSLOCALCP` to the value that represents the current local system encoding name (returned by the **iconv -li** command). You must set this Genesys-specific variable only if, in your environment, the value returned by the command does not match the codepage name specified in system locale settings (`LANG`, `LC_ALL`, or `LC_CTYPE`) on Solaris.

management-port

Default Value: No default value
Valid Values: Any valid TCP/IP port
Changes Take Effect: After restart

Specifies the TCP/IP port that management software uses to monitor and control the operation of

Configuration Server. If not specified, management agents cannot monitor and control the operation of Configuration Server. You cannot set this option to the value specified for the **port** option.

max-client-output-queue-size

Default Value: `1024`
Valid Values:

`0`	No limit
Any positive integer	Threshold value (in KB)

Changes Take Effect: Immediately

Specifies the threshold on the amount of memory (in KB), used by prepared unsent data for a single client, at which Configuration Server defers processing requests from that client.

When the amount of unsent data drops below that threshold, Configuration Server restarts processing incoming requests from the client in the order that they were originally received.

max-output-queue-size

Default Value: `0` Valid Values:

`0`	No limit
Any positive integer	Threshold value (in MB)

Changes Take Effect: Immediately

Specifies the threshold on the total amount of memory (in MB), used by prepared unsent data, at which Configuration Server defers processing of all incoming requests. While processing of the incoming requests is deferred, Configuration Server continues to receive and store incoming requests for further processing.

When the amount of unsent data drops below that threshold, Configuration Server restarts processing incoming requests.

> **Important**
> Use this option with extreme care. Reaching the threshold specified by this option effectively halts Configuration Server until the size of outgoing buffers drops below the specified value. This option is intended to be a last resort defense against unexpected termination due to memory starvation.

multi-languages

Default Value: `false`
Valid Values: `false, true`
Changes Take Effect: At first start of Configuration Server; subsequent changes not permitted

Specifies if Configuration Server supports UTF-8 encoding internally.

> **Important**
> You can only set this option to `true` if you are using a multi-language version of the Configuration Database initialization scripts.

objects-cache

Default Value: `true`
Valid Values: `true, false`
Changes Take Effect: After restart

Specifies if Configuration Server uses internal caching. When set to true, Configuration Server caches objects requested by client applications. This is the default behavior of Configuration Server in previous releases. When this option is set to `false`, the objects are not cached, reducing the amount of memory used by Configuration Server.

> **Important**
> Disabling the cache may increase the load on Configuration Server during client application registration. Use this option with care.

packet-size

Default Value: `1024000`
Valid Values: 1–2147483648
Changes Take Effect: After restart

Specifies, in bytes, the target maximum size of the packet in a single message.

> **Important**
> Do not change this option unless instructed by Customer Care.

password-change

Default Value: `true`
Valid Values: `true, false`
Changes Take Effect: After restart

Specifies whether Configuration Server allows users to change his or her own password, if the user does not have Change permission for his or her own object. If set to false, the user can change his or her own password only if he or she has Change permissions on his or her own object. If this option is

set to true (default), Configuration Server allows the user to change the password regardless of the Change permission.

> **Important**
>
> This option does not apply if the System Administrator has configured the Force Password at Next Login feature.

For more information about this option and how to use it in your password system, refer to the User Passwords section of the *Genesys Security Deployment Guide*.

peer-switchover-tmout

Default Value: 30
Valid Values: 10–600
Changes Take Effect: After restart

Specifies the time interval (in seconds) that a Configuration Server, when switching to primary, waits for the other Configuration Server in the HA pair to close its side of the connection between the two servers. The servers cannot switch over if one server has the connection open. If the specified time expires before the connection is closed, the switchover request is ignored and the server mode does not change.

port

Default Value: No default value
Valid Values: Any valid TCP/IP port
Changes Take Effect: After restart

Specifies the TCP/IP port that Configuration Server clients use to connect to this server.

> **Important**
>
> The **port** option is used only during the first start of Configuration Server with an initialized database. Upon subsequent restarts, Configuration Server reads the port information from its Application object in the Configuration Database and ignores the setting of the port option in the configuration file.

primary-master-response-timeout

Default Value: 600
Valid Values: Any positive integer
Changes Take Effect: Immediately

Specifies the time interval, in seconds, the backup Configuration Server and Configuration Server Proxy waits for a response from the primary master Configuration Server while loading data from it. If

this timeout expires, connection to the primary master Configuration Server is closed and then reconnection and data loading processes are reattempted from scratch.

For master Configuration Server, set this option in the main section of Configuration Server primary and backup to enable this functionality during startup. For the proxies, this option must be specified in the command line.

> **Important**
>
> The time measured to determine the timeout condition includes the time needed to completely receive a response for each request. Some responses may contain a significant portion of the entire configuration database. Setting this option too small for large databases can cause false timeouts and results in consistent failure to load data.

primary-startup-tmout

Default Value: `30`
Valid Values: 1—MAXINT
Changes Take Effect: After restart

Specifies the time interval (in seconds) that the backup Configuration Server waits for the primary Configuration Server to finish starting up and run as primary before continuing its own startup.

When two Configuration Servers in an HA pair start at the same time and detect each other's presence before either has completed its initialization, this option effectively determines which server starts as primary and which starts as backup. In this case, the server configured as primary continues its startup and initialization to completion to run as the primary Configuration Server. The server configured as backup, delays its initialization and waits for the primary server to start up and open its ports. After the time specified by this option, the backup Configuration Server attempts to connect to the now-running primary Configuration Server, and if successful, continues its start-up as backup.

> **Important**
>
> - Genesys strongly recommends that, to avoid concurrency during startup, you start one Configuration Server at a time.
> - Do not use this option unless instructed to do so by Genesys Customer Care.

session-restore-auth

Default Value: `empty`
Valid Values: `empty, username, password`
Changes Take Effect: After restart

Specifies the authentication method to be used when the Client application restores its connection

with Configuration Server with the restoration request (MSGCFG_RESTORESESSION). You can set this option either in the Client application or Configuration Server application. However, the authentication method configured in the Client application takes precedence. You can set `empty`, `username` or `password` as authentication methods. By default, `empty` is set.

- **username** - during connection restoration, username with old cached session's username will be validated.
- **password** - during connection restoration, password and username with old cached session's username and password will be validated.
- **empty** - during connection restoration, no authentication occurs.

server

Default Value: No default value
Valid Values: Any character string
Changes Take Effect: After restart

Specifies the name of the Configuration Database section in the configuration file; see Configuration Database Section. You must specify a value for this option.

upgrade-mode

Default Value: `0`
Valid Values: `0, 1`
Changes Take Effect: After restart

Used during migration to specify if peer Configuration Servers are able to start up side-by-side without contacting each other. If set to `1`, this independent side-by-side startup is permitted. If set to `0` (zero, the default), the startup of one Configuration Server is communicated to the other. For more information about the requirement for migration with minimum downturn, refer to the *Management Framework Migration Guide*.

Configuring ADDP Between Primary and Backup Configuration Servers

Use the options in this section to configure Advanced Disconnect Detection Protocol (ADDP) between primary and backup Configuration Servers. Configure the options in the following sections:

- In the primary Configuration Server, set them in the **confserv** section.
- In the backup Configuration Server, set them in the section that has the same name as the backup Configuration Server `Application` name.

> **Important**

> If one or both Configuration Servers have not been started up for the first time, set the options in the configuration file of the appropriate servers.

protocol

Default Value: No default value
Valid Values: `addp`
Changes Take Effect: After restart

Specifies if ADDP is to be used between the primary and backup Configuration Servers. If set to `addp`, the ADDP protocol is implemented as defined by the configuration options `addp-timeout`, `addp-remote-timeout`, and `addp-trace` in the same configuration server section (**confserv**, or its equivalent in the backup Configuration Server) of the configuration file. If this option is set to any other value, or if it is not specified at all, ADDP is not used and the ADDP-related configuration options in this section are ignored.

addp-remote-timeout

Default Value: `0`
Valid Values: `0`–`3600`
Changes Take Effect: After restart

Specifies the time interval, in seconds, that Configuration Server in backup mode instructs the other Configuration Server in the redundant pair to use when polling to check the connection between the two servers. If set to zero (`0`), Configuration Server in backup mode does not send any such instruction. This option applies only if the value of the **protocol** option is `addp`.

> **Important**
> Because any Configuration Server can be in primary or backup mode, regardless of how it is configured, you must set this option to the same value in both the primary and backup Configuration Servers.

addp-timeout

Default Value: `0`
Valid Values: `0`–`3600`
Changes Take Effect: After restart

Specifies the time interval, in seconds, that Configuration Server in backup mode waits before polling the other Configuration Server in the redundant pair. If set to zero (`0`), Configuration Server in backup mode does not poll the other Configuration Server in the redundant pair. This option applies only if the value of the **protocol** option is `addp`.

> **Important**
>
> Because any Configuration Server can be in primary or backup mode, regardless of how it is configured, you must set this option to the same value in both the primary and backup Configuration Servers.

addp-trace

Default Value: `off` Valid Values:

false, no, off	Turns ADDP off.
true, yes, on, local	ADDP trace occurs on the side of the Configuration Server in backup mode.
remote	ADDP trace occurs on the side of the Configuration Server in primary mode.
both, full	ADDP trace occurs at both the primary and backup Configuration Servers.

Changes Take Effect: After restart

Determines whether ADDP messages are written to the primary and backup Configuration Servers log files. This option applies only if the value of the **protocol** option is addp.

Configuration Database Section

The Configuration Database section name is specified by the value of the **server** option. This section contains information about the Configuration Database. The options in this section can only be edited in the Configuration Server configuration file, not via an `Application` object's options.

dbengine

Default Value: No default value
Valid Values: `oracle, mssql, db2, postgre`
Changes Take Effect: After restart

Specifies the type of DBMS that handles the Configuration Database. You must specify a value for this option.

dbname

Default Value: No default value
Valid Values: Any valid database or DSN name
Changes Take Effect: After restart

Specifies the name of the Configuration Database to be accessed as specified in the DBMS that handles this database. You must specify a value for this option unless `dbengine=oracle`. For DB2, Microsoft SQL, and PostgreSQL, this value is the name of the database where the client will connect. For Windows Authentication using a Data Source Name (DSN) with an MS SQL database, set this option to the name of the DSN. Refer to the Windows Authentication with MS SQL Server section of the *Framework Deployment Guide*.

db-persistent-failover-tmout

Default Value: `60 seconds`
Valid Values: Integer value in seconds
Changes Take Effect:

During persistent mode start, the Configuration Server Proxy tries a connection attempt with DBMS for up to `db-persistent-failover-tmout` period of time. This means that if within a configured period of time (**-cs-persistent-failover-tmout**), the Configuration Server Proxy is unable to connect to master Configuration Server, then the CS Proxy would alternatively try to connect to DBMS.

Again, if within a configured period of time (**db-persistent-failover-tmout**) the CS Proxy is unable to connect with DBMS, then the CS Proxy would alternatively try to connect to Master CS. It keep continuing until the connection with master/DBMS is successful.

> **Important**
> This option is applicable for Configuration Server Proxy.

dbserv-conn-async-timeout

Default Value: 20 Valid Values: 0–65535
Changes Take Effect: After restart

Specifies, in seconds, the time interval in which Configuration Server, when connecting to DB Server, waits for a response from DB Server if a TCP response has not been received because of a network issue. If this option is set to 0 (zero), this timeout is disabled.

dbserver

Default Value: No default value
Valid Values: Any valid DBMS name or dsn
Changes Take Effect: After restart

Specifies the name or alias identifying the DBMS that handles the Configuration Database, as follows:

- For Oracle, the value is the name of the Listener service.
- For Microsoft SQL, set this value to the SQL server name (usually the same as the host name of the computer on which the Microsoft SQL Server runs).
- For DB2, set this value to the name or alias-name of the database specified in the db2 client configuration.
- For PostgreSQL, set this value to the SQL server name (usually the same as the host name of the computer where PostgreSQL runs).

Set this option to dsn to trigger Configuration Server, in direct database access mode, to connect to the database using a Data Source Name (DSN) configured in the Windows operating system. The DSN name must be specified by the **dbname** option in this case. Refer to the Windows Authentication with MS SQL Server section of the *Framework Deployment Guide*.

dml-retry

Default Value: 1
Valid Values: Integer values in the range of 0 to 32766
Changes Take Effect: After restart of Configuration Server

Specifies the number of retries for issuing a DML statement or transaction to DB Server after receiving TAF range error from Oracle DBMS. When the number of retries has been attempted with no success, Configuration Server considers the database operation to have failed and reports the error to the database client. A value of zero (0) specifies that no retry is to be attempted, in which the error is reported to the client immediately, without any retries.

> **Important**
>
> The node failover procedure can be time- and resource-consuming, so take care to set this option to a reasonable value to avoid overloading DB Server.

mssql-multisubnet

Default Value: No
Valid Values: Yes, No
Changes Take Effect: After restart

Enables multi-subnet failover using MS SQL 2016 and later for disaster recovery and business continuity scenarios involving the Configuration Database. When set to Yes, subnet failover is supported; when set to No, subnet failover is not supported.

For more information about this feature, refer to the *Framework Database Connectivity Guide*.

password

Default Value: No default value
Valid Values: Any character string
Changes Take Effect: After restart

Specifies the password established in the SQL server to access the Configuration Database. You must specify a value for this option if you are not encrypting the password. If you are encrypting the password, Configuration Server sets this option to the encrypted password in its configuration file.

> **Important**
>
> The **password** option is visible only in the configuration file. It is not visible in Genesys Administrator.

response-timeout

Default Value: 600
Valid Values: Any positive integer
Changes Take Effect: After restart

Specifies the time interval, in seconds, Configuration Server waits for a response from the DBMS. If this timeout expires, Configuration Server generates log event 21-24402. Refer to *Framework Combined Log Events Help* for a full description of this log event.

username

Default Value: No default value
Valid Values: trusted or any valid username
Changes Take Effect: After restart

Specifies the user name established in the SQL server to access the Configuration Database.

If the Configuration Database is not an MS SQL database, or you are not using Windows authentication to access the Configuration Database, set this option to the name of a user account authorized to access the database.

If you are using Windows Authentication with a Data Name Source (DSN) to access an MS SQL

Configuration Database, either do not set this value at all, or set it to a dummy value.

If you are using Windows Authentication with a Trusted User to access an MS SQL Configuration Database, set this option to trusted. The actual user account is based on the Configuration Server account for which the trusted user was configured. Refer to the Windows Authentication with MS SQL Server section of the *Framework Deployment Guide*.

Runtime Options in Configuration Database

The options in this section are set in the `Options` of the Configuration Server `Application` object using Genesys Administrator.

This chapter includes the following sections:

Configuration Server section

backupmode-restart

Default Value : `false`
Valid Value : `true/false`
Changes Take Effect: After next change in Configuration Server mode (from Primary to Backup). If set to `false` (the default value), the master Configuration Server does not restart gracefully upon becoming the backup Configuration Server.

The purpose of this option is to avoid Master Configuration Server switch as PRIMARY-BACKUP-PRIMARY because this switch causes the `cfg_maxdbid` corruption. Currently, the server runs in PRIMARY mode. When the server gets the BACKUP mode change request from LCA, then the **backupmode-restart** option allows stopping the application by itself. If the **Auto-Restart** option is configured as `true`, then LCA immediately restarts the application.

If the **Auto-Restart** option is not enabled, then the application gets stopped.

> ### Important
> The **backupmode-restart** option is applicable for Master Configuration Server in PEC (GenesysEngage Cloud) and Premise.

force-offline

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: Immediately

When set to `true`, immediately stops database connections if the DBMS is not responding or database clients have stopped responding. When set back to `false` (the default), the connections are restored.

Use this option to restart database connections if the DBMS is not responding or database clients have stopped responding. This option takes effect only if **dbthread=true**. You can change this option only when editing the properties of the Configuration Server instance that is currently running in Primary mode.

[system] Section

This section must be called **system**.

consistent-port-selection

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: At the next reconnect. For master Configuration Server, this option must be configured from the configuration files and it must be restarted for the changes to take effect. For proxies, this option can be configured at runtime and it must be specified in the application configuration objects.

When set to `true`, this option implements the following behavior in selecting ports for connections of Configuration Server Proxies to the master Configuration Server, including the connections of backup instances of both master and proxy to their primary peers:

- When a Configuration Server Proxy loses connection to the primary master Configuration Server, to reconnect to the primary backup instance, the proxy will consistently use the port with the same port ID that was used for its initial connection to the primary (specified in the command line). If the port with the same ID is not configured, the default port will be used. If a port with the ID default is not configured, any available port will be used.
- The backup instances of Configuration Servers, both master and proxy, will consistently use the ports marked as **HA Sync** to connect to their primary peers. If **HA Sync** port is not available, the default port will be used. If a port with the ID default is not configured, any available port will be used.

This option applies to the configurations where Configuration Server instances have multiple listening ports. If set to `false` (the default), this feature is disabled.

deferred-requests-expiration

Default Value: `3600` seconds
Valid Values: `0, 1–2147483647`
Changes Take Effect: Immediately

For transaction serialization mode (see **serialize-write-transactions** option), enables expiration of regular clients' deferred requests and specifies the time interval (in seconds) for which deferred requests are kept for further processing. A value of `0` means that that request never expires. If a deferred request cannot be processed within this time interval, processing of the request is cancelled and error response is sent to the client.

This value does not apply to the requests from Configuration Server proxies deferred upon data reload and internally generated requests.

> **Important**

- Genesys recommends that you not change the default value unless instructed to do so by your Genesys representative.
- The **serialize-write-transactions** option must be set to `true` for this option to apply.

force-reconnect-reload

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: After next reconnection to database

When this option is set to true, Configuration Server checks the table **cfg_refresh** when switching from backup to primary mode, or when reconnecting to the database. If the field **notify_id** is different, Configuration Server disconnects all clients, closes all ports, reloads the configuration data, and then opens the ports again. This verification is done to ensure consistency of configuration information between the database and its image in Configuration Server.

prevent-mediatype-attr-removal

Default Value: `true`
Valid Values: `true, false`
Changes Take Effect: Immediately

Specifies whether to remove MediaType business attributes and some values that may directly impact legacy solutions that depend on fixed DBIDs for these predefined objects in the Environment tenant.

proxy-load-max

Default Value: `0` (zero)
Valid Values: `0, 1–2147483647`
Changes Take Effect: Immediately

Enables limiting the number of proxy servers concurrently loading and reloading data and specifies the maximum number of Configuration Server Proxies allowed to (re)load data in parallel. A value of `0` (zero, the default) indicates there is no limit on the number of Configuration Server Proxies. If more than the specified number of proxy servers attempt to reload their data concurrently, only requests from the maximum number of servers are processed; requests from the rest of the servers are deferred until other servers have finished loading their data. This enables the excess Configuration Server Proxies (those with deferred requests) to continue serving their clients with unchanged (original) data, and to prevent too many proxy servers from simultaneously disabling their services to reload data and overloading master Configuration Server.

Important

> The **serialize-write-transactions** option must be set to true for this option to apply.

proxy-load-timeout

Default Value: `600` seconds
Valid Values: `0, 1–2147483647`
Changes Take Effect: Immediately

For transaction serialization mode (see **serialize-write-transactions** option), specifies the time limit during which transactional requests are deferred to avoid interference with a data load by a single Configuration Server Proxy. If set to 0 (zero), there is no limit. If a proxy server fails to complete its data load within the specified time interval since it was authorized, it is allowed to continue loading. However, transaction deferral mode is exited and deferred transactions are processed. If the **proxy-load-max** option is specified, expiration of this interval allows the next proxy server waiting in the queue to start loading its data.

> **Important**
>
> - The **serialize-write-transactions** option must be set to true for this option to apply.
> - Ensure that this interval is sufficient for the proxies to complete data load, based on the size of the database and the bandwidth of the communication channel between the master Configuration Server and Configuration Server Proxies. Premature termination of the transaction deferral mode allows data change transactions to be processed while the proxy is still loading data. This can cause data inconsistencies in the proxy's data once it completes loading.

serialize-write-transactions

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: Immediately

Enables (`true`) or disables (`false`; the default) the following functionality:

- Transaction serialization
- Transactions deferral at proxy/backup startup/data (re)load
- Limiting of the number of proxies concurrently loading/reloading data (requires additional option **proxy-load-max**)
- Throttling of data updates (requires additional option **throttle-updates-interval**)

Transaction serialization is the mode of Configuration Server operation that prevents data change transactions from overlapping and potentially causing a loss of data integrity. It involves the deferral

of data change requests so that each request can be processed completely, without impacting, or being impacted by other requests.

Transaction serialization mode also defers processing of data change requests for the time when Configuration Server Proxies or backup instance of master Configuration Server are in progress of loading/reloading data from the master primary Configuration Server. At that time, Configuration Server Proxies cannot always correctly process notifications on the data change. These notifications cannot always be correctly applied to partially loaded and not yet fully reconciled dataset. They could be missed or incorrectly applied, resulting in outdated or corrupt data in the proxy's memory. Deferring data changes for the time of data reload prevents this from happening.

> **Important**
>
> The **serialize-write-transactions** option must be set to true for this option to apply.

For detailed description of this functionality, refer to Transaction Serialization section in *Framework Deployment Guide*.

See also: **deferred-requests-expiration**, **proxy-load-timeout**

skip-annex-validation

Default Value: `0` (zero)
Valid Values: `0` (zero), `1`, `16`
Changes Take Effect: Immediately

Specifies if Configuration Server validates the Annex of an object, checking for an empty or duplicate object section. By default, Configuration Server performs a full validation and rejects modifications that can potentially affect data integrity or cannot be displayed properly by Genesys Administrator.

Valid values are:

- `0` (zero, the default)—Full validation is performed, and changes are rejected if an empty section and/or a duplicate section are found.
- `1`—Partial validation is performed, and changes are rejected if a duplicate section is found.
- `16`—Disables validation completely

> **Important**
>
> Set this option to 16 only when requested by -Customer Care.

skip-environment-enum-transfer

Default Value: `false`
Valid Values: `true`, `false`
Changes Take Effect: Immediately

Specifies whether business attributes are created automatically when creating a new tenant. By default, all business attributes that are available in the Environment tenant are duplicated (except their options) in the new tenant.

throttle-updates-interval

Default Value: `0` (zero)
Valid Values: `0, 1–2147483647`
Changes Take Effect: Immediately

Enables transaction throttling and specifies, in milliseconds, the time interval used to throttle data update (transactional) requests. If a data update request is received before this time interval expires, the request is deferred until the interval expires. Any non-transactional requests received from the same client are also deferred and processed in FIFO (first-in, first-out) order after the deferred request is processed. A value of `0` (zero) disables this option.

> **Important**
>
> - The **serialize-write-transactions** option must be set to true for this option to apply.
> - When configuring this option, keep in mind that if actual load consistently exceeds the rate specified by this option for a significant time, deferred unprocessed requests will accumulate in the input queue and will be eventually cancelled as defined by the value of the **deferred-requests-expiration** option. To avoid this happening, consider adjusting the **throttle-updates-interval** option accordingly, to account for the expected actual load.

token-authentication-mode

Default Value: `disable`
Valid Values:

`enable`	Token level authentication supported on all ports.
`disable`	Token level authentication disabled on all ports (the default).
`gui-port-only`	Token level authentication supported on GUI-only port, where `user=1`.

Changes Take Effect: At next connection request

Enables or disables token-based authentication of connections to Configuration Server on particular listening ports by setting this option. In essence, this option restricts this functionality at port level.

For more information about token-based authentication of connections to Configuration Server, refer to Secure Communication with Configuration Server in the *Genesys Administrator Extension Deployment Guide*.

token-preambula

Default Value: {PXZ}
Valid Values: Any string of three random characters, enclosed in { } (parentheses), for a total of five characters. For example: {###} If the value is more than 5 characters long, including the parentheses, the default value is used.
Changes Take Effect: At next connection request

Specifies the preamble tag that is attached to the start of a password token by a client wanting to establish a connection to Configuration Server.

For more information about token-based authentication of connections to Configuration Server, refer to Secure Communication with Configuration Server in the *Genesys Administrator Extension Deployment Guide*.

token-tolerance

Default Value: 60
Valid Values: 1–2147483647
Changes Take Effect: Immediately

If GAX and Configuration Server clocks are not synchronized, this option specifies a tolerance time interval (in seconds) before the token start time and after the token end-time. If this option is not set or set to 0 (zero), the default value is used.

Example:

In the following scenario:

- GAX generates a token valid from 12:00:00 to 12:20:00
- The token-tolerance option is set to 60 (the default).

Configuration Server considers the token to be valid from 11:59:00 to 12:21:00.

For more information about token-based authentication of connections to Configuration Server, refer to Secure Communication with Configuration Server in the *Genesys Administrator Extension Deployment Guide*.

token-ttl

Default Value: 1440
Valid Values: 1–2147483647
Changes Take Effect: Immediately

Specifies how long (in minutes) the token is considered valid by Configuration Server.

If this option is set to a positive non-zero integer, the token is valid for the time interval specified by this option, starting from the start time specified by GAX. Note that this option applies only to the duration time of the token; the expiration time of the token cannot be changed.

Example:

- GAX generates a token valid from 12:00 to 1:00.
- If **token-ttl** is set to 60 minutes. Configuration Server considers the token valid from 12:00 to 1:00.
- If **token-ttl** is set to 65 minutes, Configuration Server considers the token valid from 11:55 to 1:00.
- If **token-tolerance** is set to 300 seconds and **token-ttl** is set to 65 minutes, Configuration Server considers the token valid from 11:50 to 1:05.
- If **token-ttl** is not set, or set to 0 (zero), Configuration Server uses the value of the **token_life_in_minAutes** option set in the **[general]** section of the GAX application. If **token_life_in_minutes** is not set or set to 0 (zero) in the GAX application. the default value of this option (**token-ttl**)) is used.

> **Important**
>
> Genesys recommends that you always use the default value for this option. If necessary, you can set a required value using the token_life_in_minutes option in the GAX application. The value of this option must always be greater than **token_life_in_minutes**.

For more information about token-based authentication of connections to Configuration Server, refer to Secure Communication with Configuration Server in the *Genesys Administrator Extension Deployment Guide*.

token-uuid

Default Value: Empty string
Valid Values: A string of 32 hexadecimal characters arranged in 5 groups separated by hyphens
Changes Take Effect: At next connection request

Specifies the UUID used to generate the symmetrical key using the secret algorithm. If this option is not configured or is an empty string, Configuration Server uses a value generated internally by the primary master Configuration Server for the particular Configuration Database.

The value must consist of 32 hexadecimal characters in groups separated by hyphens; like is:
`<8 hex digits>-<4 hex digits>-<4 hex digits>-<4 hex digits>-<8 hex digits>`

For example: `C7123227-9709-4E64-88F3-74BA83ACE826`

For more information about token-based authentication of connections to Configuration Server, refer to the Secure Communication with Configuration Server in the *Genesys Administrator Extension Deployment Guide*.

x-path-read-improvements

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: Immediately

If set to `true`, Configuration Server uses the performance improvements for read requests that reads agent login details from Configuration Server. Enabling this option significantly improves the login experience in large environments where a number of agents log in concurrently.

[log] Section

Configuration Server supports the common log options described in [log] Section.

> **Important**
> Any options set in this section of the configuration file are read only at initial startup. After that, Configuration Server reads values from its `Application` object. Likewise, you can change the value of any log option in runtime using Genesys Administrator.

Debug Log Options

The options in this section enable you to generate `Debug` logs containing information about specific operations of an application.

x-dblib-debug

Default Value: `0`
Valid Values:

`0`	Log records are not generated.
1–5	Log records are generated. The higher the value, the more log records are generated.

Changes Take Effect: Immediately Generates Debug log records about DB Client operations of the application.

> **Important**
> - This option takes effect only if the following two conditions are met:
>   - The **verbose** option is set to `debug` or `all`.
>   - The **dbthread** option is set to `true`.
> - Use this option only when requested by Genesys Customer Care.

x-dblib-sql

Default Value: `0`

Valid Values:

`0`	Log records are not generated.
1–5	Log records are generated.

Changes Take Effect: After restart

Generates Debug log records with additional output from the thread used for access to the Configuration Database.

> ### Important
>
> - This option takes effect only if the following two conditions are met:
>   - The **verbose** option is set to `debug` or `all`.
>   - The **dbthread** option is set to `true`.
> - Use this option only when requested by Genesys Customer Care.

x-stat

Default Value: Configuration Server's log path configured under the **log** section
Valid Values: Any pre-existing file path
Changes Take Effect: Immediately

Specifies the log path for Configuration Server stat logs. If not provided, stat logs are generated in the directory where CS is installed.

x-stat-print-interval

Default Value: `0`
Valid Values: `0` or any positive integer
Changes Take Effect: For the next scheduled printout

Specifies the interval (in seconds) between each logging printout of the statistics.

When the statistics printout interval is set, all statistics log entries are written in a separate log file with the suffix **_stat** in the file name and this file is placed in the same directory as the regular log file. The default value 0 (zero) means that the feature is disabled.

> ### Important
>
> - The statistics log file is created and updated only if the following two conditions are met:
>   - The **verbose** option is set to `debug` or `all`.

- File logging is configured for the regular logs.

x-stat-print-segment

Default Value: Same as the value set in the **segment** option
Valid Values:

`false`	No segmentation is allowed.
`<number> KB` or `<number>`	Sets the maximum segment size, in kilobytes. The minimum segment size is 100 KB.
`<number> MB`	Sets the maximum segment size, in megabytes.
`<number> hr`	Sets the number of hours for the segment to stay open. The minimum number is 1 hour.

Changes Take Effect: Immediately

Specifies whether there is a segmentation limit for the statistics log file. If there is, sets the mode of measurement, along with the maximum size. If the current statistics log segment exceeds the size set by this option, the file is closed and a new one is created. This option is ignored if log output is not configured to be sent to a statistics log file.

If this option is not configured, the default value of this option will be the same as the value set in the **segment** option.

[security] Section

This section contains configuration options that relate to security features. This section must be called `security`, and is configured in the options of the Configuration Server `Application` object.

no-default-access

Default Value: `0`
Valid Values: One of the following:

`0`	No default access privileges.
`1`	Default access privileges.

Changes Take Effect: Immediately

Specifies whether new users created under this application have default privileges assigned to them. If this option is not present, the default value is assumed.

With redundant Configuration Servers, this option must be configured identically on both the primary and backup servers.

Refer to the chapter No Default Access for New Users in the *Genesys Security Deployment Guide* for complete information about this option.

objbrief-api-permission-check

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: Immediately

When set to `true`, the results returned by brief API calls are based on the permissions of the client account that submitted the request.

[authentication] Section

This section is mandatory on the Server level to enable external authentication and is optional to configure certain features common for all authentication types. It can, however, appear in other locations as mentioned in Setting Configuration Options.

This section must be called *authentication*. The following are the [authentication] section options, common for all authentication types:

- **library**
- **enforce-external-auth**
- **enforce-internal-auth**
- **failure-alarm-***

Some of these options may be configured in the **[authentication]** section at different levels:

- application (Configuration Server Application object)
- tenant (Tenant object)
- user (Person object)

Refer to External Authentication Reference Manual for the options specific to each external authentication type.

library

Default value: No default value
Valid values: Depends on type configuration option, as follows:

`gauth_radius`	All
`gauth_ldap`	All
`gauth_radius, gauth_ldap`	Configuration Server, Configuration Server Proxy
`gauth_ldap, gauth_radius`	Configuration Server, Configuration Server Proxy
`internal`	Tenant, Person

Changes Take Effect: Upon restart of the object for which this option is set

Lists enabled external authentication type(s). The name(s) of corresponding section(s) that specifies the parameters for each external authentication type must match these values. This option is mandatory to enable external authentication, and its value is set automatically during installation, based on the selected external authentication type.

You can deploy both RADIUS and LDAP on the same Configuration Server or Configuration Server Proxy. If this Configuration Server or Configuration Server Proxy was previously configured for another type of authentication, add `gauth_radius` or `gauth_ldap` to the value of this option, separated by comma. When set to internal, all users associated with the object in which the object is set to this

value are validated internally.

When set to `internal`, all users associated with the object in which the object is set to this value are validated internally.

enforce-external-auth

Default value: `false`
Valid values: `true`, `false`
Changes Take Effect: Immediately

Optional. Enforces external authentication for every user. If you omit this parameter, LDAP AM performs authentication only if an External ID is specified in the Person object.

This option applies at the server level, and starting in release 8.5.1, also at the Tenant level.

If this option is configured at the server level as `true` in the database, but Configuration Server reads its configuration file and finds the option set to `false`, the value from the configuration file will override the value in the database, allowing all users of the Environment tenant to log in internally.

> **Warning**
> Do not set this option to `true` until you have configured all of the accounts in the configuration.

enforce-internal-auth

Default value: `false`
Valid values: `true`, `false`
Changes Take Effect: Immediately

Optional. Specifies if all users are to be authenticated internally.

This option is set in the options of the Application object. If set to `true`, all users are authenticated internally by Configuration Server or Configuration Server Proxy, regardless of having a value in the External ID field. If set to `false` (the default), only those users with a value in the External ID field are authenticated by the LDAP AM.

failure-alarm-*

These options are applicable to the entire Configuration Server application and should be configured only in the Configuration Server Application object **[authentication]** section.

Configuration Server can keep track of recent user login/authentication failures to generate Standard level log message when the number/rate of failures exceeds specified threshold.

The following events (further denoted as `auth` events) are tracked:

- user logins with `gui-type` applications
- user authentications, requested by applications
- user owned password changes, which require old password

These events are tracked for all client protocols (`cfglib`, `soap`) and authentication types (`internal`, `external`, `delegated to master`).

The alarm criterion threshold can be defined as a maximum count and/or percentage of authentication failures during specified last time interval. If both count and percentage criteria are specified, the alarm log message is generated whenever any of the criterion is met. Once the message is generated, the failure counter is reset. If the condition persists, the message would be generated again, once the condition is detected, starting with the reset counter.

If specified condition is met, the following log message is generated:

```
24150|STANDARD|GCTI_CONFSERV_AUTH_FAILURE_ALARM|Multiple authentication failures: %u failures over last %u minute(s) exceed predefined threshold of %u%s
```

The message can be associated with alarm condition/reaction using existing Management Layer alarming functionality.

The alarm can serve as an indication of:

- authentication subsystem failures/misconfiguration
- specific type of intrusion attempts

The feature is configured in the **[authentication]** section of the Configuration Server Application configuration object.

- **failure-alarm-period** – enables the feature and specifies time interval used to detect repeated auth failures
- **failure-alarm-count** – specifies the count criterion
- **failure-alarm-percent** and **failure-alarm-percent-threshold** – specify the percentage criterion. This is the percentage of failures to all auth attempts. failure-alarm-percent takes effect only if the total number of attempts exceeds failure-alarm-percent-threshold.

failure-alarm-period

Default value: `0`
Valid values:

`0`	Disables the failure tracking.
`positive integer`	Specifies the time interval in minutes.

Changes take effect: Immediately

Enables alarm for repeated auth failures and specifies time interval, used for detection criteria.

failure-alarm-count

Default value: 0
Valid values:

0	Disables count criterion.
positive integer	Specifies the threshold count.

Changes take effect: Immediately

For repeated authentication failures, alarm specifies the threshold count of failures. If the number of failures during last failure-alarm-period exceeds this value, the alarm log message is logged. The corresponding alarm, if configured, is triggered.

failure-alarm-percent

Default value: 0
Valid values:

0	Disables count criterion.
1-100	Specifies the percentage in %.

Changes take effect: Immediately

For repeated authentication failures, alarm specifies the threshold percentage of failures. If the percentage of failures (the ratio of the number of failures to the number of attempts) exceeds this value, the alarm log message is logged. The corresponding alarm, if configured, is triggered. This option is effective only if the total number of attempts during the last failure-alarm-period exceeds the failure-alarm-percent-threshold.

failure-alarm-percent-threshold

Default value: 10
Valid values:
non-negative integer - specifies the threshold count
Changes take effect: Immediately

For repeated authentication failures, alarm specifies the total number of authentication attempts during the last failure-alarm-period at which the failure-alarm-percent starts to take effect.

[history-log] Section

This section controls the History Log functionality during runtime. Refer to the *Framework Deployment Guide* for more information about the History Log.

This section must be called **history-log**. This section is not created automatically; you must create it manually.

> **Important**
>
> If the Configuration Server configuration file contains legacy options **history-log-xxx** specified in its `confserv` section, they will be converted and copied into the **history-log** section when Configuration Server first starts up. After that, they will be ignored in favor of the new options in this section.

active

Default Value: `true`
Valid Values: `true, false`
Changes Take Effect: Immediately

Turns the history log on and off. The value of this option can only be changed at runtime via the Configuration Server `Application` object properties. When Configuration Server is started, it automatically turns on the history log regardless of the previous setting of this option, and sets this option to `true`.

audit-expiration

Default Value: 365
Valid Values: Any positive integer
Changes Take Effect: Immediately

Specifies the number of days of records to retain in the database. For example, if the value is set to `30`, the records of the last 30 days will be kept in the database and older records will be deleted. The maximum value for this option is 365. Configuration Server cleans up the history records based on this option every 30 minutes.

> **Important**
>
> The value of this option must always be greater than **expiration**.

audit-max-records

Default Value: `50000`

Valid Values: Any positive integer
Changes Take Effect: Immediately

Specifies the maximum number of records that can be stored in the database. When the maximum number of records is reached, Master Configuration Server will delete the older records while adding new records. Genesys recommends not to set the value above 100000 for performance reasons. Configuration Server cleans up the history records based on this option every 30 minutes.

> **Important**
>
> The value of this option must always be greater than **max-records**.

client-expiration

Default Value: 1
Valid Values: 1–30
Changes Take Effect: Immediately

Specifies the maximum number of days the records of client sessions will be kept in the history log database before they are deleted. Also determines the time interval at which Configuration Server will check for expiration of records of both configuration updates and client sessions.

expiration

Default Value: 30
Valid Values: 1–30
Changes Take Effect: Immediately

Specifies the maximum number of days the records of configuration updates will be kept in the history log database before they are deleted.

write-former-value

Default Value: `true`
Valid Values: `true, false`
Changes Take Effect: Immediately

Specifies if old history values are stored for purposes of the configuration audit trail. If set to `false`, audit trail feature will be disabled.

> **Important**
>
> - Genesys recommends that you temporarily switch off this option if you are doing batch updates, such as tenant removal or switch removal, and are concerned about performance.

- Make sure you always back up your database before doing large updates.

max-records

Default Value: 1000
Valid Values: 1–1000
Changes Take Effect: Immediately

Specifies the maximum number of records Configuration Server will send to a client in response to a history log data request.

[prom] Section

This section provides information on configuration options for Prometheus support.

Feature configuration

Prometheus support can be configured through:

- command line arguments
- [prom] section in startup cfg/conf file (for master CS)
- prom section in application configuration object

There are basically three places where the options can be specified. First of all, this is a command line. The second is for master server in configuration file and the service can in configuration object. So if this options as specified in command line or configuration file, they take effect immediately. A upon start time before even a configuration object is red. If they are specified only in the configuration object, then. They take effect upon startup or immediately as soon as configuration is read from. From the configuration either database or master server.

Command line

- prom-port <port>
- prom-transport <transport_parameters>
- prom-debug <debug_level>
- lport-prom <port>

If `<transport_parameters>` contain whitespace characters, the string must be enclosed in quotation marks.

The value **-lport-prom** persistently overrides the Prometheus port specified elsewhere.

If it is specified in the command line, **-prom-transport**, if required, must also be specified on the command line.

In this case `<port>` and `<transport_parameters>` specified in startup file and/or application object are ignored, and their effective values cannot be changed at runtime.

Startup cfg/conf file - for master CS

```
[prom]
```

```
port=<port>
transport=<transport_parameters>
debug=<debug_level>
```

Application object

```
[prom]
port=<port>
transport=<transport_parameters>
debug=<debug_level>
```

If specified in command line and/or startup configuration file, the Prometheus port is opened upon startup immediately.

If specified in application object, Prometheus port is opened once configuration is read.

The set of options in command line takes precedence over that in startup file.

Unless command line specifies **-lport-prom.** options specified in application object prevail over command line and startup file.

If application object's settings differ from those in command line or startup file, the port is reopened according to application object's settings once they are read.

<port>

Default: `0`
Valid values:

- `0` - the feature is disabled
- `integer 1-65534` - specifies Prometheus port

Changes Take Effect: Immediately, if changed the port is closed and reopened.

Specifies Prometheus http/https port.

<transport_parameters>

Default: none -- Prometheus port is open for unsecure http connection.
Valid values:
Refer to "Common Configuration Options" "Transport Parameter Options" section and "Genesys 8.5 Security Deployment Guide” “Secure Connections (TLS)" section.
Changes Take Effect: Immediately, if changed the port is closed and reopened.

Optionally, specify TLS parameters for https secure Prometheus connection. Transport parameters set at Application and/or Host level do not apply to Prometheus port.

<debug _level>

Default: `0`
Valid values:

- `0` - debug logging is disabled
- `1` - log http message headers
- `2` – log complete http messages

Changes Take Effect: Immediately

Enables additional debug-level logging for the feature.

Application Parameter Options

Set options in this section in the Application Parameters of a port's properties, using the following navigation path:

- Configuration Server `Application` object > `Configuration` tab > `Server Info` section > `Listening Ports` > `Port Info`

Application Parameter options are not associated with a configuration option section, and do not appear in the options or annex of a Configuration Server `Application` object.

backlog

Default Value: 5
Valid Values: Any positive integer greater than 4
Changes Take Effect: Immediately

Specifies the maximum number of outstanding connection requests from clients. When the maximum is reached, Configuration Server does not accept a new request until an outstanding request is processed.

> **Important**
> This option is for advanced use only, and is logged only in Debug level logs. Use this option only when requested by Genesys Customer Care.

user

Default Value: No default value
Valid Values: 1 or not set
Changes Take Effect: Immediately

When set to 1, the port refuses all connection requests from applications that do not require user-level authentication. When not set, or set to any other value, the option is ignored.

Sample Configuration Server Configuration File

The following is a sample configuration file for Configuration Server:

```
[confserv]
port = 2020
management-port = 2021
server = dbserver
objects-cache = true
encryption = false
encoding = utf-8

[log]
verbose = standard
all = stderr

[dbserver]
dbengine = mssql
dbserver = db-config
dbname = config
username = user1
password = user1pass
transport = tls=1;certificate=9a ab db c4 02 29 3a 73 35 90 b0 65 2f
```

Changes in 8.5.x

The following table lists all changes to Configuration Server options in the 8.5.x release.

> **Important**
> For information about Configuration Server configuration options that relate to external authentication in Configuration Server, refer to the *External Authentication Reference Manual*.

Option Name	Option Values	Type of Change	Details
Configuration Server section			
cfglib-conn-async-tmout	Integer between 0 and 65536	Removed	Replaced by cfglib-connect-tmout.
cfglib-connect-tmout	Integer between 0 and 65536	Added	In release 8.5.100.26. Replaces cfglib-conn-async-tmout.
client-response-timeout	Positive integer up to 86400	Modified Valid Values and Changes Take Effect	Previous Valid Values: Any positive integer. Previous Changes Take Effect: After restart.
dbthread	true, false	Added	In release 8.5.106.02.
decryption-key	Valid path name	Added	In release 8.5.x.
delay-reload-backup	0 or any positive integer	Added	In release 8.5.101.38.
encryption	true, false	Modified	Now set automatically by Configuration Server.
force-offline	true, false	Added	In release 8.5.000.10.
force-reconnect-reload	true, false	Moved	Moved to the system section. In release 8.5.x.
langid	Valid integer from list of LCID to language mappings	Added	In release 8.5.x.
license	Binary value	Removed	
max-client-output-queue-size	1024	Added	In release 8.5.000.03.
max-output-queue-size	0	Added	In release 8.5.000.03.
peer-switchover-tmout	10–600	Added	In release 8.1.200.24.
primary-master-response-timeout	Any positive integer	Added	In release 8.5.101.28.

Option Name	Option Values	Type of Change	Details
primary-startup-tmout	1–MAXINT	Added	In release 8.5.x.
upgrade-mode	0, 1	Added	In release 8.5.100.21.
Configuration Database Section			
addp	on, off	Removed	
addp-timeout	1–3600	Removed	
addp-trace	on, off	Removed	
dbserv-conn-async-timeout	0–65535	Added	In release 8.5.101.13.
history-log-guid	Binary value	Removed	
history-log-minid	Binary value	Removed	
history-log-version	Binary value	Removed	
mssql-multisubnet	Yes, No	Added	In release 8.5.101.22 (Configuration Server), 8.5.100.19 (Message Server).
reconnect-timeout	0 or any positive integer	Removed	
server	No default value	Removed	
hca Section (removed)			
schema	none, snapshot, journal	Removed	
[log] Section			
x-dblib-debug	0–5	Added	In release 8.5.x. Use this option only when requested by Genesys Customer Care.
x-dblib-sql	0–5	Added	In release 8.5.x. Use this option only when requested by Genesys Customer Care.
x-stat-print-interval	0 or any positive integer	Added	In release 8.5.101.38.
x-stat-print-segment	Same as the value set in the segment option	Added	In release 8.5.101.42.
soap Section (removed)			
client-lifespan	1–65535	Removed	
debug	true, false	Removed	
port	0 or any valid TCP/IP port	Removed	
[system] Section (new)			
consistent-port-selection	true, false	Added	In release 8.5.101.38.
deferred-requests-expiration	0 to 2147483647	Added	In release 8.5.101.20.
prevent-mediatype-attr-removal	true, false	Added	In release 8.5.000.10.
proxy-load-max	0 to 2147483647	Added	In release 8.5.101.20.

Option Name	Option Values	Type of Change	Details
proxy-load-timeout	`0` to 2147483647	Added	In release 8.5.101.20.
serialize-write-transactions	`true, false`	Added	In release 8.5.101.20.
skip-environment-enum-transfer	`true, false`	Added	In release 8.5.000.10.
skip-annex-validation	`0, 1, 16`	Added	In release 8.5.101.21.
throttle-updates-interval	`0` to 2147483647	Added	In release 8.5.101.20.
token-authentication-mode	`enable, disable, gui-port-only`	Added	In release 8.5.101.10.
token-preambula	Any 3 characters enclosed in {}	Added	In release 8.5.101.10.
token-tolerance	1–2147483647	Added	In release 8.5.101.14.
token-ttl	1–2147483647	Added	In release 8.5.101.14.
token-uuid	A string of 32 hex characters in five hyphen-separated groups	Added	In release 8.5.101.10.
[history-log] Section			
write-former-value	`true, false`	Added	In release 8.5.x.
audit-expiration	Any positive integer	Added	In release 8.5.101.24.
audit-max-records	Any positive integer	Added	In release 8.5.101.24.
Application Parameters			
user	1 or not set	Added	In release 8.5.100.11.

Configuration Server Proxy Configuration Options

This chapter describes configuration options for Configuration Server operating in Proxy mode (referred to as Configuration Server Proxy) and includes the following sections:

Configuration Server Proxy also supports the common options described in the Common Configuration Options chapter.

Setting Configuration Options

Unless specified otherwise, set the Configuration Server Proxy configuration options in the options of the Configuration Server Proxy Application object, using the following navigation path:

- Configuration Server Proxy `Application` object > `Options` tab > `Advanced View (Options)`

> **Important**
> Configuration section names, configuration option names, and predefined option values are case-sensitive. Type them in Genesys Administrator exactly as they are documented in this chapter.

Mandatory Options

The following table lists the Configuration Server Proxy options for which you must provide values;

otherwise, Configuration Server Proxy will not start. The options are listed by section.

Option Name	Default Value	Details
[license] Section		
license-file	No default value	This is the unified Genesys licensing option. See the description in the *Genesys Licensing Guide*.

> **Important**
>
> For information about starting and configuring Configuration Server Proxy, refer to the *Framework Deployment Guide*.

[license] Section

You must configure the license section for Configuration Server when running it in Proxy mode to support geographically distributed configuration environments.

This section must be called **license**.

The only configuration option in the License section is called **license-file**, and this is the Genesys unified licensing option. Refer to the *Genesys Licensing Guide* for the option description and values.

[csproxy] Section

This section must be called **csproxy**.

allow-empty-password

Default Value: `true`
Valid Values: `true, false`
Changes Take Effect: Immediately

Specifies whether Configuration Server Proxy allows an empty (blank) password in a client connection request. If the option is set to `false` and the password in a request is not specified, Configuration Server Proxy rejects the request and generates a corresponding error message.

> **Important**
>
> The Tenant option **password-min-length** overrides the value of **allow-empty-password** for all users in the Tenant in which the latter option is configured. Genesys strongly recommends that you use **password-min-length** instead of **allow-empty-password**. The latter has been provided only for purposes of backward compatibility.

Refer to the User Passwords section of the *Genesys Security Deployment Guide* for more information about this option and how to use it.

allow-external-empty-password

Default Value: `true`
Valid Values: `true, false`
Changes Take Effect: Immediately

This option is used only if external authentication is being used.

Specifies whether Configuration Server Proxy allows an empty (blank) password in a client connection request when these requests are authenticated externally. When set to `true` (default), Configuration Server Proxy will permit an unspecified password in an externally authenticated request.

If the option is set to `false` and the password in a request is not specified, Configuration Server Proxy rejects the request and generates a corresponding error message, regardless of the value of the two other options.

Refer to the User Passwords section of the *Genesys Security Deployment Guide* for more information about this option and how to use it.

allow-mixed-encoding

Default Value: `false`

Valid Values: `true, false`
Changes Take Effect: When the next client connects

Specifies if Configuration Server Proxy checks if the encoding of user interface client applications at client registration matches the current encoding of Configuration Server Proxy. If set to `false` (the default), only those interface clients with the same encoding mode can connect to Configuration Server Proxy. If set to `true`, Configuration Server Proxy will not check, and the interface client can connect to Configuration Server Proxy regardless of its encoding mode.

> **Warning**
> Be very careful if you are setting this option to `true`. If a client sends any string data that is encoded differently than the encoding used by Configuration Server Proxy, Configuration Server Proxy will terminate immediately.

cfglib-connect-tmout

Default Value: `20`
Valid Values: Any integer from `0` to `65536` seconds
Changes Take Effect: After restart

Sets a timeout (in seconds) for this instance of Configuration Server Proxy to expect a TCP success or failure response from the remote Configuration Server to which it is connecting. If the connection has not been made when the timeout expires, all pending connection requests are cancelled.

When set to `0` (zero), this timeout is disabled.

The value of this parameter overrides that of the **-cfglib-connect-tmout** command-line parameter.

client-record-sync-timeout

Default Value: `0`
Valid Values: Any positive integer from `0` to `20`
Changes Take Effect: Immediately

Specifies a duration in seconds during which client records from Configuration Server (primary) or Configuration Server Proxy (primary) will be synched to their corresponding Backup Configuration Server in scenarios of switchover or shutdown in primary Configuration Server.

client-response-timeout

Default Value: `600`
Valid Values: Positive integer up to `86400` (24 hours)
Changes Take Effect: Immediately

Limits the time, in seconds, during which Configuration Server Proxy retains prepared unsent data in its memory. If this timeout expires and the data is still unsent, Configuration Server Proxy disconnects the client and discards all the data related to it.

cs-persistent-failover-tmout

Default Value: `60 seconds`
Valid Values: Integer value in seconds.
Changes Take Effect:

During persistent mode start, the Configuration Server Proxy tries a connection attempt with DBMS for up to `cs-persistent-failover-tmout` periods of time. This means that if within a configured period of time (**cs-persistent-failover-tmout**), the Configuration Server Proxy is unable to connect to master Configuration Server, then the CS Proxy would alternatively try to connect to DBMS.

Again, if within a configured period of time (**db-persistent-failover-tmout**) the CS Proxy is unable to connect with DBMS, then the CS Proxy would alternatively try to connect to Master CS. It keep continuing until the connection with master/DBMS is successful.

> **Important**
>
> This option is applicable for Configuration Server Proxy.

configurable-master-server

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: For the next reconnect to the master

Specifies whether or not to use the default Configuration Server application (named as **confserv**). If set to `true`, the default Configuration Server application will not be used for any process. If set to `false`, the default Configuration Server application will be used in all the processes.

If you are setting up a Configuration Server Proxy for the main Configuration Server application that does not carry the name **confserv**, then it is considered that the default Configuration Server application is not used.

delay-reload

Default Value: `0`
Valid Values: `0` or any positive integer
Changes Take Effect: For the next reconnect to the master

Specifies the time interval, in seconds, that Configuration Server Proxy waits to reload data from the master Configuration Server after the initial connection failed. When multiple proxies are connected to the master Configuration Server, this feature enables you to prioritize proxy reloads and decrease the time each proxy remains out of service while reloading the data.

This option does not delay initial data load after Configuration Server restart and it does not delay the attempt to restore the previous session to the master Configuration Server. This option takes effect only if an attempt to restore the previous session with the master Configuration Server fails.

> **Tip**
> Specify short but different delay reload settings for different proxies to establish the order in which proxies initiate reload. You can use this option in conjunction with the **proxy-load-max** option to further delay data reloading process for the proxies.

delay-reload-backup

Default Value: `0`
Valid Values: `0` or any positive integer
Changes Take Effect: For the next reconnect to the master

Specifies the time interval, in seconds, that the backup Configuration Server Proxies or the backup master server must wait to reload data from the master Configuration Server after the initial connection failed. You can specify a higher delay period for the backup Configuration Server proxies to ease the load on the master Configuration Server after network outages when multiple clients need to reload data at the same time.

The configured reload delay period applies to the master Configuration Server when it needs to reload data while running in the backup mode or after being switched to backup mode upon a switchover.

This option does not delay initial data load after Configuration Server restart and it does not delay the attempt to restore the previous session to the master Configuration Server. This option takes effect only if an attempt to restore the previous session with the master Configuration Server fails.

> **Tip**
> Specify different delay reload settings for different proxies to establish the order in which proxies initiate reload. You can use this option in conjunction with the **proxy-load-max** option to further delay data reloading process for the proxies.

encoding

Default Value: `UTF-8`
Valid Values: `UTF-8, UTF-16, ASCII, ISO-8859-1, ISO-8859-2, ISO-8859-3, ISO-8859-4, ISO-8859-5, ISO-8859-6, ISO-8859-7, ISO-8859-8, ISO-8859-9, ebcdic-cp-us, ibm1140, gb2312, Big5, koi8-r, Shift_JIS, euc-kr` Changes Take Effect: After restart

Sets the UCS (Universal Character Set) transformation format (such as UTF-8, UTF-16, Shift_JIS, and so on) that Configuration Server Proxy uses when exporting configuration data into an XML (Extensible Markup Language) file. The Configuration Import Wizard (CIW) must initiate the export operation. If the operating system settings do not support the specified value, Configuration Server Proxy uses the default value.

Specify the UTF-8 encoding format unless you are using wide-character codesets (such as Chinese, Japanese, Korean).

force-vag-calculation

Default Value: `false`
Valid Values:

`false`	proxy-side VAG calculation disabled
`true`	proxy-side VAG calculation enabled if the proxy is connected to the master Configuration Server started with **disable-vag-calculation**=`true`

Changes take effect: After proxy restart or complete data reload.

Runtime changes of this option are intentionally ignored. For the proxy-side VAG processing to operate correctly, the **force-vag-calculation** option on both primary and backup proxies should be set to `true` and the **disable-vag-calculation** option on both primary and backup master Configuration Server should be set to `true` (this option on the master also requires restart to take effect).

In order to prevent double VAG calculation (on both master and proxy) the following applies:

- If the proxy configured with **force-vag-calculation**=`true` loads/reloads data from the master with enabled VAG processing (**disable-vag-calculation** on the master is absent or not set to `true`), the value of this option on the proxy is intentionally ignored and the proxy-side VAG processing remains disabled.
- If the proxy with enabled VAG processing upon data reload from the master determines that the master no longer has VAG processing disabled (that is, because of the master being reconfigured while the proxy was offline or misconfiguration with different values between master primary and backup), the proxy-side VAG processing is disabled.

last-login

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: Immediately

Specifies whether the Last Logged In Display feature is to be used. If set to true, the feature is used for this Configuration Server Proxy. Last Logged In information is sent to clients of the Application, and is stored and displayed by Genesys graphical user interfaces that support this feature.

If set to `false` (the default), this feature is not used for this Configuration Server Proxy.

For more information about the Last Logged In Display feature and this option, see the “Last Logged In Display” topic in the *Genesys Security Deployment Guide*.

last-login-synchronization

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: Immediately

Specifies whether Last Logged In information is synchronized between this Configuration Server Proxy and others in the environment. If set to `true`, this Configuration Server Proxy sends notifications

about changes in Last Logged In information to others in the configuration.

If set to `false` (the default), Last Logged In information is not synchronized between this Configuration Server Proxy and others in the configuration.

This option is ignored if the **last-login** option is set to `false`.

For more information about the Last Logged In Display feature and this option, see the "Last Logged In Display" chapter in the *Genesys Security Deployment Guide*.

locale

Default Value: No default value
Valid Values: Any valid locale name or abbreviation
Changes Take Effect: Immediately

On Windows operating systems, specifies the locale setting that Configuration Server Proxy uses when transforming configuration object information from internal representation for export to an XML file.

Select values for this option from the official Microsoft locale list. For example, for English, specify english or eng; for Japanese, specify japan or jpn; and so on.

The specified locale value must be supported by your operating system, and must match the value that is defined by the LANG environment variable (or derived from the values of the LC_ALL and LC_CTYPE environment variables, as specified in the vendor documentation).

management-port

Default Value: No default value
Valid Values: Any valid TCP/IP port
Changes Take Effect: After restart

Specifies the TCP/IP port that management software uses to monitor and control the operation of Configuration Server Proxy. If not specified, management agents cannot monitor and control the operation of Configuration Server Proxy. You cannot set this option to the value specified for the **port** option.

max-client-output-queue-size

Default Value: `1024`
Valid Values:

`0`	No limit
Any positive integer	Threshold value (in KB)

Changes Take Effect: Immediately

Specifies the threshold on the amount of memory (in KB), used by prepared unsent data for a single client, at which Configuration Server Proxy defers processing requests from that client.

When the amount of unsent data drops below that threshold, Configuration Server Proxy restarts processing incoming requests from the client in the order that they were originally received.

max-output-queue-size

Default Value: `0`
Valid Values:

`0`	No limit
Any positive integer	Threshold value (in MB)

Changes Take Effect: Immediately

Specifies the threshold on the total amount of memory (in MB), used by prepared unsent data, at which Configuration Server Proxy defers processing of all incoming requests. While processing of the incoming requests is deferred, Configuration Server Proxy continues to receive and store incoming requests for further processing.

When the amount of unsent data drops below that threshold, Configuration Server Proxy restarts processing incoming requests.

> **Important**
> Use this option with extreme care. Reaching the threshold specified by this option effectively halts Configuration Server Proxy until the size of outgoing buffers drops below the specified value. This option is intended to be a last resort defense against unexpected termination due to memory starvation.

objects-cache

Default Value: `true`
Valid Values: `true, false`
Changes Take Effect: After restart

Specifies if Configuration Server Proxy uses internal caching. When set to true, Configuration Server Proxy caches objects requested by client applications. This is the default behavior of Configuration Server Proxy in previous releases. When this option is set to `false`, the objects are not cached, reducing the amount of memory used by Configuration Server Proxy.

> **Important**
> Disabling the cache may increase the load on Configuration Server Proxy during client application registration. Use this option with care.

packet-size

Default Value: `1024000`
Valid Values: `1–2147483648`
Changes Take Effect: Immediately

Specifies, in bytes, the target maximum size of the packet in a single message.

> **Warning**
> Do not change this option unless instructed by Customer Care.

proxy-cluster-name

Default Value: No default value
Valid Values: Name of Configuration Server objects
Changes Take Effect: When next client connects

Specifies the name of a Configuration Server object that represents a load balancer network interface to Configuration Server Proxy clients.

The object represented by this name must exist in the Configuration Database, be of type Configuration Server, have a port configured to match the listening port of the load balancer, and be associated with a host with the address of the load balancer network interface to which clients must connect.

The object must not be associated with any real Genesys Configuration Server process in the system. All clients that are configured to use load-balanced Configuration Server Proxies must be configured to use this application object instead of actual Configuration Server Proxies when configuring their ADDP and other connections parameters.

This option takes effect only in a load-based Configuration Server Proxies configuration.

-proxy-persistent-mode

Default Value:
Valid Values: Command-line add **-proxy-persistent-mode** during Server start.
Changes Take Effect:

By this command-line option, on startup, Configuration Server Proxy would try to connect to Master Configuration Server, as usual. If unable to connect to the master CS, then CS proxy would make a connection to ConfigDB and load configuration data from DB in persistent mode.

Also, the application mode will be always PRIMARY (SCM_PROXY_PRIMARY) in persistent mode. But, mode will not be changeable (LCA mode request will be ignored) through LCA request when CS proxy is started in persistent mode.

Once every 1 hour, the below log is printed and indicates CS proxy started in persistent mode.
Example Log:

```
00:11:00.108 Std 22175 Proxy Server started as persistent mode due to master (hostA:888)
unavailability or non-reachable.
```

> **Important**
> This command-line option is applicable only for Configuration Server proxy.

proxy-writable

Default Value: `false`
Valid Values:

`true`	Configuration Server Proxy accepts requests from clients for updates to user-defined data, and forwards these requests to the Master Configuration Server.
`false`	Configuration Server Proxy does not accept requests from clients for updates to user-defined data. Clients must send the requests to the Master Configuration Server directly.

Changes Take Effect: Immediately

Specifies whether Configuration Server Proxy accepts requests from client applications for updates to user-defined data, such as hot keys, shortcuts, and recently dialed numbers. If accepted, Configuration Server Proxy then forwards the requests to the Master Configuration Server, where the updates are stored.

> **Important**
> This mode is intended to be used with Genesys agent-facing applications only. You should still connect your administrative GUIs, and any other applications that write extensively to the configuration, to the Master Configuration Server directly.

vag-clusters

Default Value:
Valid Values: `true`, `false`
Changes Take Effect: After proxy restart or complete data reload

The prerequisites are:

- CS with **disable-vag-calculation**=`true`
- Writable proxy with **force-vag-calculation**=`true`

The section **vag-clusters** on the proxy's application object is introduced for selective VAG Calculation on Configuration Server Proxies.

To assign a VAG to a cluster:

1. In the VAG's Agent Group object, create a section named **vag-clusters**.
2. Add the option with the cluster name and value `true`.

A VAG can be set to `true` only once in **vag-clusters**.

[system] Section

This section must be called **system**.

For more information about token-based authentication of connections to Configuration Server, refer to “Secure Communication with Configuration Server” in the Genesys Administrator Extension Deployment Guide.

token-tolerance

Default Value: 60
Valid Values: 1–2147483647
Changes Take Effect: Immediately

If GAX and Configuration Server Proxy clocks are not synchronized, this option specifies a tolerance time interval (in seconds) before the token start time and after the token expiry time, as defined by GAX. If this option is not set or set to 0 (zero), the default value is used.

Example:
GAX generates a token valid from 12:00:00 to 12:20:00.

- If **token-tolerance** is set to 60 (the default), Configuration Server Proxy considers the token to be valid from 11:59:00 to 12:21:00.

token-ttl

Default Value: 1440
Valid Values: 1–2147483647
Changes Take Effect: Immediately

Specifies how long (in minutes) the token is considered valid by Configuration Server Proxy.

If this option is set to a positive non-zero integer, the token is valid for the time interval specified by this option, but still ending at the expiration time specified by GAX (the expiration time of the token cannot be changed).

Example:
GAX generates a token valid from 12:00 to 1:00.

- If **token-ttl** is set to 60 minutes, Configuration Server Proxy considers the token valid from 12:00 to 1:00.
- If **token-ttl** is set to 65 minutes, Configuration Server Proxy considers the token valid from 11:55 to 1:00.
- If **token-tolerance** is set to 300 seconds and **token-ttl** is set to 65 minutes, Configuration Server Proxy considers the token valid from 11:50 to 1:05. If **token-ttl** is not set, or set to 0 (zero), Configuration Server Proxy uses the value of the **token_life_in_minutes** option set in the **[general]** section of the GAX application. If **token_life_in_minutes** is not set or set to 0 (zero) in the GAX application, the default value of this option (**token-ttl**)) is used.

Important

- Genesys recommends that you always use the default value for this option. If necessary, you can set a required value using the **token_life_in_minutes** option in the GAX application.
- The value of this option must always be greater than **token_life_in_minutes**.

[history-log] Section

This section must be called **history-log**.

client-expiration

Default Value: 1
Valid Values: 1–30
Changes Take Effect: Immediately

Specifies the time interval, in days, at which Configuration Server Proxy will check for expiration of records of both configuration updates and client sessions.

Application Parameter Options

Set the options in this section in the Application Parameters of the port's properties, using the following navigation path in Genesys Administrator:

- Configuration Server Proxy `Application` object > `Configuration` tab > `Server Info` section > `Listening Ports` > `Port Info`

Application Parameter options are not associated with a configuration option section, and do not appear in the options or annex of a Configuration Server Proxy `Application` object.

backlog

Default Value: 5
Valid Values: Any positive integer greater than 4
Changes Take Effect: Immediately

Specifies the maximum number of outstanding connection requests from clients. When the maximum is reached, Configuration Server Proxy does not accept a new request until an outstanding request is processed.

This option is optional; if it is not configured, the default value is used.

> **Warning**
> This option is for advanced use only, and is logged only in Debug level logs. Use this option only when requested by Genesys Customer Care.

user

Default Value: No default value
Valid Values: 1 or not set
Changes Take Effect: Immediately

When set to 1, the port refuses all connection requests from applications that do not require user-level authentication. When not set, or set to any other value, the option is ignored.

Changes in 8.5.x

The following table lists all changes to Configuration Server Proxy options in the 8.5.x release.

> **Important**
> For information about Configuration Server Proxy configuration options that relate to external authentication in Configuration Server, refer to the *Framework External Authentication Reference Manual*.

Option Name	Option Values	Type of Change	Details
[csproxy] Section			
cfglib-connect-tmout	0–65536	New	
client-response-timeout	Positive integer up to 86400	Modified Valid Values and Changes Take Effect	Previous Valid Values: Any positive integer Previous Changes Take Effect: After restart
delay-reload	0 or any positive integer	New	
delay-reload-backup	0 or any positive integer	New	
management-port	Any valid TCP/IP port	New	
max-client-output-queue-size	1024	New	
max-output-queue-size	0	New	
proxy-cluster-name	No default value	New	
[system] Section			
token-tolerance	1–2147483647	New	
token-ttl	1–2147483647	New	
[history-log] Section			
active	true, false	Removed	
all	:memory:, valid path and name	Removed	
expiration	1–30	Removed	
failsafe-store-processing	true, false	Removed	
max-records	1–1000	Removed	
soap Section (removed)			
client_lifespan	Any positive integer	Removed	
debug	yes, no	Removed	

Option Name	Option Values	Type of Change	Details
port	Any valid TCP/IP port	Removed	
Application Parameter Options			
user	1 or not set	New	

Local Control Agent Configuration Options

This chapter describes the configuration options for Local Control Agent (LCA) and includes the following sections:

Setting Configuration Options

You change default LCA configuration options in the configuration file **lca.cfg**. See LCA Configuration File for more information.

> ### Warning
> Configuration section names, configuration option names, and predefined option values are case-sensitive. Type them in the configuration file exactly as they are documented in this chapter.

Mandatory Options

You do not have to configure any options to start LCA.

[general] Section

This section must be called **general**.

lookup_clienthost

Default Value: `false`
Valid Values: `false, true, on, off, yes, no`
Changes Take Effect: After restart

Specifies whether to look up the host name of the connected client. If set to false, the default, LCA does not look up the host name and uses the IP address of the connected client in audit logs. If set to true, LCA looks up the host name and uses it in audit logs.

wmiquery-timeout

Default Value: No default value (infinite time interval)
Valid Values: `-1, 0`, or any positive integer
Changes Take Effect: After restart

Specifies, in milliseconds, the length of time for which LCA will wait for a response to its WMI query for performance results. If not set, or set to `-1` or `0`, there is no timeout; LCA will wait for an infinity. Otherwise, it will wait for the specified time, and then return to processing requests from Solution Control Server.

This option applies only on the Windows platform.

[lca] Section

This section must be called **lca**.

AppRespondTimeout

Default Value: 20
Valid Values: 1 to 60 seconds
Changes Take Effect: After restart

Specifies the time interval (in seconds) in which LCA expects a response to its switchover request to an application. If the application does not acknowledge the switchover request and make the mode change within this time, LCA puts the application in Unknown state.

> **Important**
> This feature is not valid if heartbeat is configured.

[log] Section

This section must be called **log**.

The options you can configure in this section are the unified common log options described in the Common Configuration Options chapter.

[security] Section

This section contains information required for LCA to support TLS on connections with its clients. Refer to the "TLS Configuration" section in the *Genesys Security Deployment Guide* for complete information about configuring TLS. For information about the options in this section, refer to TLS Configuration Options.

LCA Configuration File

Starting with release 7.0, LCA supports common log options which allows you to precisely configure log output for LCA. Because you do not configure an `Application` object for LCA, if you need to change the default log option settings, modify the configuration file called lca.cfg and specify new values for appropriate options. The file is located in the same directory as the LCA executable file.

> **Important**
>
> You can give a custom name to the configuration file and specify it at startup using the **-c** command-line parameter. For example, **lca.exe -c lca_custom.cfg**, where **lca_custom.cfg** is the name of the configuration file.

The LCA configuration file must have the following format:

```
[log]
<log option name>=<log option value>
<log option name>=<log option value>
```

For more information on the LCA configuration file and for related instructions, see the *Framework Deployment Guide*.

Sample Configuration File

Here is a sample configuration file for LCA:

```
[log]
verbose = standard
standard = stdout, logfile
```

Configuring ADDP Between LCA and Solution Control Server

Advanced Disconnection Detection Protocol (ADDP) is enabled automatically between LCA and Solution Control Server. To customize its settings, configure the **addp-timeout** and **addp-remote-timeout** options in the `Host` object, as described in the Host Configuration Options chapter.

Changes in 8.5.x

The following table lists all changes to LCA options in the 8.5.x release.

Option Name	Option Values	Type of Change	Details
[general] Section			
wmiquery-timeout	-1, 0, positive integer	New	
[lca] Section			
AppRespondTimeout	1 to 60	New	

Genesys Deployment Agent Configuration Options

This chapter describes the configuration options for the Genesys Deployment Agent and includes the following sections:

> **Important**
>
> Support is discontinued for Genesys Deployment Agent (GDA) from Local Control Agent 8.5.100.31 and later versions.

Setting Configuration Options

You can change default Genesys Deployment Agent configuration options in the configuration file **gda.cfg**. See Genesys Deployment Agent Configuration File for more information.

> **Important**
>
> Configuration section names, configuration option names, and predefined option values are case-sensitive. Type them in the configuration file exactly as they are documented in this chapter.

Mandatory Options

You do not have to configure any options to start Genesys Deployment Agent.

[log] Section

This section must be called **log**.

The options you can configure in this section are the unified common log options described in the Common Configuration Options chapter.

[web] Section

This section must be called **web**.

rootdir

Default: Path to LCA and Genesys Deployment Agent installation folder
Valid Values: Path to any valid folder
Change Takes Effect: After restart of Genesys Deployment Agent

Specifies the path to the folder that is used to store files uploaded during the Installation Package (IP) deployment.

[security] Section

This section contains the configuration options that are required to configure secure data exchange using TLS. For information about the options in this section, see TLS Configuration Options.

Genesys Deployment Agent Configuration File

Genesys Deployment Agent supports common log options which allows you to precisely configure log output for it. Because you do not configure an **Application** object for Genesys Deployment Agent, if you need to change the default log option settings, create a configuration file called **gda.cfg** (or rename and modify the **gda.cfg.sample** file that is located in the installation folder) and specify new values for appropriate options. The file must be located in the same directory as the Genesys Deployment Agent executable file.

> **Important**
>
> You can also specify a custom name for the configuration file using the **-c** command-line parameter. For example, **gda.exe -c gda_custom.cfg**, where **gda_custom.cfg** is the user-defined configuration file.

The Genesys Deployment Agent configuration file must have the following format:

```
[log]
<log option name>=<log option value>
<log option name>=<log option value>

[web]
rootdir=<path>
```

Sample Configuration File

The following is a sample configuration file for Genesys Deployment Agent:

```
[log]
verbose = standard
standard = stdout, gdalog

[web]
rootdir=./gdaroot
```

Changes in 8.5.x

The following table lists all changes to Genesys Deployment Agents options in the 8.5.x release.

Option Name	Option Values	Type of Change	Details
[security] Section			
transport	Transport Parameter	Moved	Moved to TLS Configuration Options.

Message Server Configuration Options

This chapter describes the configuration options for Message Server and includes the following sections:

Setting Configuration Options

Unless specified otherwise, set Message Server configuration options in the options of the Message Server `Application` object, using the following navigation path:

- Message Server `Application` object > `Options` tab > `Advanced View (Options)`

> **Important**
> Configuration section names, configuration option names, and predefined option values are case-sensitive. Type them in Genesys Administrator exactly as they are documented in this chapter.

Mandatory Options

You do not have to configure any options to start Message Server.

[MessageServer] Section

This section must be called **MessageServer**.

signature

Default Value: `log`
Valid Values:

`log`	This Message Server is used for logging to the Centralized Log Database.
`general`	This Message Server is used for strategy monitoring from Interaction Routing Designer.
`scs_distributed`	This Message Server is used for communication between distributed Solution Control Servers.

Changes Take Effect: After restart

Specifies the role of this Message Server. Solution Control Server uses this option to determine what this Message Server does and what messages it handles.

If this option is not configured, this Message Server is used for logging.

[messages] Section

This section must be called **messages**.

db_binding

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: After restart

Specifies whether Message Server uses DB Server's binding functionality when storing messages in the database.

db_storage

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: After restart

Specifies whether log messages are stored in a database.

> **Important**
> For the value `true` to take effect, you must include an appropriate Database Access Point in the `Connections` of the Message Server `Application` object.

dbthread

Default Value: `true`
Valid Values: `true, false`

`true`	Uses internal database thread. This is the preferred method.
`false`	Uses separate DB Server, as in releases prior to 8.5.

Changes Take Effect: After restart

Specifies how Message Server accesses the Log Database. If set to `true`, Message Server server attempts to launch a database client process locally that will access the Log Database using the Log DAP. This is the preferred method of accessing a database starting in 8.5.

If set to `false`, Message Server attempts to use a remote DB Server, as in previous releases. Genesys recommends that you use this method only with older Genesys applications.

log-queue-exp-time

Default Value: `0`
Valid Values: `0`–`604800` (7 days)
Changes Take Effect: Immediately

Specifies for how long (in seconds) the previously received log messages will be stored in the log queue during a connection failure between Message Server and DB Server. When the timeout expires, Message Server will delete all expired messages from the queue. The default value of `0` means no expiration time.

log-queue-response

Default Value: `0`
Valid Values: `0`–`65535`
Changes Take Effect: Immediately

Specifies the maximum number of log messages that Message Server may send to DB Server from its queue in a single request when the connection between them is restored after a failure. The next portion of log messages will be sent upon confirmation response from DB Server with respect to the previous request. The default value of `0` means an unlimited number of log messages can be sent to DB Server in a single request. Setting this option to a very small value may negatively affect system performance.

log-queue-size

Default Value: `0`
Valid Values: `0`–`4294967295`
Changes Take Effect: After restart

Specifies the maximum number of log messages to be stored in a log queue during a connection failure between Message Server and DB Server. When the maximum is reached, arrival of each new log message will cause removal of the oldest message from the queue until connection to DB Server is restored.

The default value of `0` means an unlimited number of log messages can be stored in the log queue.

[db-filter] Section

The DB Filter section controls the delivery of specified log events from specified applications and application types. See Sample Configuration.

This section must be called **db-filter**.

block-messages

Default Value: No default value
Valid Values: Comma-separated list of identifiers of any valid log events
Changes Take Effect: Immediately

Specifies the log events reported by any application that will not be recorded in the Central Log Database.

block-messages-by-<type>

Default Value: No default value
Valid Values: Identifiers of any applications, separated by commas
Changes Take Effect: Immediately

Specifies the log events reported by applications of the specified type that will not be recorded in the Central Log Database, where <type> is the numeric value of the application type.

For information about application types, refer to the Database Format section of the Log Format chapter in the *Framework Management Layer User's Guide*.

block-messages-from-<DBID>

Default Value: No default value
Valid Values: Identifiers of any valid log events separated by commas
Changes Take Effect: Immediately

Specifies the log events reported by the specified application that will not be recorded in the Central Log Database, where <DBID> is the numeric value of the application.

> **Important**
> The application DBID can be retrieved by using the **-getallappstatus** parameter of the **mlcmd** command-line utility. Refer to the *Framework Management Layer User's Guide* for the correct syntax of this command, and how to use it.

Sample Configuration

The following is a sample configuration of the **db-filter** section for Message Server:

```
[db-filter]
block-messages = 4001,4002,4003
block-messages-from-201 = 1001,1002,1003
block-messages-by-9 = 5003,5004,5005
```

[log] Section

In addition to the option in this section, Message Server supports the common options described in Common Configuration Options.

The following option enables you to generate Debug logs containing information about specific operations of an application.

x-dblib-debug

Default Value: `0`
Valid Values:

`0`	Log records are not generated.
`1-5`	Log records are generated. The higher the value, the more log records are generated.

Changes Take Effect: Immediately

Generates Debug log records about DB Client operations of the application.

> **Important**
>
> - This option takes effect only if the following two conditions are met:
>   - The **verbose** option is set to `debug` or `all`.
>   - The **dbthread** option is set to `true`.
> - Use this option only when requested by Genesys Customer Care.

Changes in 8.5.x

The following table lists all changes to Message Server options in the 8.5.x release.

Option Name	Option Values	Type of Change	Details
[messages] Section			
dbthread	`true, false`	New	
[log] Section			
x-dblib-debug	`0-5`	New	

Solution Control Server Configuration Options

This chapter describes configuration options for Solution Control Server (SCS) and includes the following sections:

Solution Control Server also supports:

- The common options described in the Common Configuration Options chapter.
- The autostart configuration option that you configure in other server applications and that Solution Control Server processes. Refer to the *Management Layer User's Guide* for more information.

Setting Configuration Options

Unless specified otherwise, set the Solution Control Server configuration options in the options of the Solution Control Server `Application` object, using the following navigation path:

- `Solution Control Server Application` object > `Options` tab > `Advanced View (Options)`

> **Warning**
> Configuration section names, configuration option names, and predefined option values are case-sensitive. Type them in Genesys Administrator exactly as they are documented in this chapter.

Mandatory Options

You do not have to configure any options to start Solution Control Server.

[license] Section

You must configure the License section for Solution Control Server when you use the following functionality:

- Redundant configurations—either `warm standby` or `hot standby`—for any Genesys server that the Management Layer controls.
- SCS support for geographically distributed configuration environments.
- Simple Network Management Protocol (SNMP) interface.

This section must be called **license**.

The only configuration option in the License section is called **license-file**, and this is the Genesys unified licensing option. Refer to the *Genesys Licensing Guide* for the option description and values.

[general] Section

This section contains information about the SCS operational mode and relevant settings.

This section must be called **general**.

alive_timeout

Default Value: 30
Valid Values: Any value from 15–300
Changes Take Effect: After restart

When SCS operates in Distributed mode (**distributed_mode** is set to on), specifies the time interval, in seconds, that this SCS waits for a response from other instances of SCS. When using a Message Server to allow the Solution Control Servers in the Distributed SCS network to communicate with each other, this option must be considered when setting the Advanced Disconnect Detection Protocol (ADDP) timeout values.

Refer to the Distributed Solution Control Servers section in the *Framework Deployment Guide* for details about Distributed Solution Control Servers.

app-switchover-timeout

Default Value: 60
Valid Values: 0 or any positive integer
Changes Take Effect: Immediately

Specifies the time interval, in seconds, that Solution Control Server waits for the switchover of an HA application to complete. When the timeout expires, Solution Control Server logs that the switchover operation has failed and allows the next switchover operation. When set to 0, the timer is disabled and Solution Control Server does not allow the subsequent switchover of an HA application in case of a switchover failure.

cfglib-connect-tmout

Default Value: 20
Valid Values: Any integer from 0 to 65536 seconds
Changes Take Effect: After restart

Sets a timeout (in seconds) for SCS to expect a TCP success or failure response from the Configuration Server to which it is connecting. If the connection has not been made when the timeout expires, all pending connection requests are canceled.

When set to 0 (zero), this timeout is disabled.

The value of this parameter overrides that of the **-cfglib-connect-tmout** command-line parameter.

default-audit-username

Default Value: GAX_backend

Valid Values: Name of any configured Application
Changes Take Effect: After restart

Specifies the default login username for GAX in SCS audit logs when connecting to an Application of type CFGSCI with a username of NULL. This option is required in this case because there is no provided username when connecting to SCS.

detailed-alarm-log

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: After restart

This parameter enables or disables the generation of detailed alarm log statements as both SCS log file and user-defined SCS alarm log file.

- If set to `true`, logs the alarm events in a detailed format in log files.
- If set to `false`, logs the alarm events in the existing format in log files.

By default, detailed alarm log statements are generated in both the SCS log file and the user-defined alarm log file when the parameter **detailed-alarm-log** is not set.

disable-switchover

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: Immediately

Specifies if all switchover activity is to be disabled. Set this option to `true` to avoid false switchovers during dynamic migration. When dynamic migration is complete, set this option to `false` (the default) to restore normal behavior, enabling all switchover activity.

disconnect-switchover-timeout

Default Value: `0`
Valid Values: `0` or any positive integer
Changes Take Effect: Immediately

Specifies the time interval, in seconds, that SCS waits for an LCA connection to be restored before switching operations over to the backup server of an application installed on the host running LCA. When the timeout expires, SCS determines whether the switchover condition still exists:

- If the LCA remains disconnected (because, for example, the LCA host is down) and the status of the application installed on the LCA host remains `Unknown`, SCS switches the backup server configured for the application to `Primary` mode.
- If the LCA connection is restored (because, for example, a temporary network problem no longer exists) and the status of the application installed on the LCA host becomes `Started`, SCS does not perform a switchover to the application's backup server.

Use this option when the network linking SCS and a monitored host is slow (such as a WAN).

distributed_mode

Default Value: `off`
Valid Values: `on, off`
Changes Take Effect: After restart

Specifies whether SCS operates in Distributed mode, to support a distributed management environment. When set to on, SCS verifies the existence of the appropriate license at startup and, if the license is found and valid, starts operating in Distributed mode.

distributed_rights

Default Value: `default`
Valid Values:

`default`	SCS controls the objects associated with it in the Configuration Database.
`main`	SCS controls all objects that are not associated with any SCS in the Configuration Database.

Changes Take Effect: After restart

When SCS operates in Distributed mode (**distributed_mode** is set to on), specifies what objects SCS controls. Use this option when you run SCS in a distributed management environment and you want to grant this SCS instance control permissions over all configuration objects (such as, Hosts, Applications, and Solutions) that you have not configured other SCS instances to control.

distributed_sync_timeout

Default Value: `0`
Valid Values: `0` or any positive integer
Changes Take Effect: Immediately

Specifies a time interval, in seconds, after which a distributed Solution Control Server sends to other Solution Control Servers a request for the status of objects controlled by them, while also sending the statuses of objects that it controls. This enables all Solution Control Servers in the configuration to synchronize object statuses and report them accordingly. If this option is set to zero (`0`, the default) or is not defined, synchronization attempts are not sent in a timely manner.

Set this option in each Solution Control Server.

> **Important**
>
> - Genesys recommends that, if you want to enable this synchronization, you set this option to a value of no less than `60` seconds to reduce network traffic.
> - With this option enabled, Solution Control Server processes a higher number of messages, and may disconnect from Local Control Agent if the Advanced Disconnect Detection Protocol (ADDP) timeout is too small. Before using this option, ensure that the

> ADDP timeout between Solution Control Server and Local Control Agent is large enough.

enable-nonserver-app

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: After restart

Specifies whether SCS detects the non-server application(s) and sends change request as **configured** through the **change application option** alarm reaction.

- If set to `true`, SCS sends a change request through the **change application option** alarm reaction for the non-server application's option.
- If set to `false` (default), SCS does not request any option change for the non-server application(s).

haflip-detect-timeout

Default Value: `10`
Valid Values: `-1,10–2147483647`
Changes Take Effect: Immediately

Specifies the time interval, in seconds, for which Solution Control Server detects the flipping of the monitoring applications from Primary–Backup–Primary or Backup–Primary–Backup mode and prints the standard 10327 log message.

When set to `-1`, this timeout is disabled.

ha_service_unavail_primary

Default Value: `true`
Valid Values: `false, true, on off, yes, no`
Changes Take Effect: Immediately

Specifies if an application in the HA pair is promoted to the primary mode when it is in a Service Unavailable state. If set to `true` (the default), the application is promoted to primary. If set to `false`, the application is not promoted. This setting prevents a race condition of HA scripts, which occurs when both SIP Servers are started almost at the same time and go into the primary mode for a brief period of time.

hostinfo-load-timeout

Default Value: `10`
Valid Values: `10–120`
Changes Take Effect: After restart

Specifies the time interval (in seconds) for which Solution Control Server waits to upload host information from any host it controls and with which the Local Control Agent on that host has a

secure connection with Solution Control Server. If the timer expires before the host information is uploaded, Solution Control Server disconnects from the Local Control Agent on that host's machine.

lookup_clienthost

Default Value: `false`
Valid Values: `true, false, on, off, yes, no`
Changes Take Effect: After restart

Specifies whether to look up the host name of the connected client. If set to `false` (default), SCS does not look up the host name and uses the IP address of the connected client in audit logs. If set to `true`, SCS looks up the host name and uses that in audit logs.

max-req-per-loop

Default Value: `20`
Valid Values:`0`–`32767`
Changes Take Effect: After restart

Specifies the maximum number of requests that SCS will process without pausing to scan its connection with LCA and respond appropriately, therefore preventing the connection from closing because of ADDP timing out. When it is set to `0` (zero, disabled), the SCS processes all LCA requests in the queue without pausing. Set this to a non-zero value if SCS manages a large set of hosts and applications, and ADDP is used between SCS and LCA.

> **Important**
> Use this option only when requested by Genesys Customer Care.

service-unavailable-timeout

Default Value: `0`
Valid Values: Any value from `0`–`5`
Changes Take Effect: Immediately

Specifies the amount of time, in seconds, that SCS waits before applying the criteria for switchover if the primary and backup T-Servers report `Service Unavailable` simultaneously.

[mailer] Section

This section contains information about SMTP-related settings for SCS.

This section must be called **mailer**.

smtp_from

Default Value: No default value
Valid Values: E-mail address
Changes Take Effect: Immediately

Specifies the value of the From field in the email message that SCS sends as an alarm reaction of the E-Mail type.

smtp_host

Default Value: No default value
Valid Values: Host name
Changes Take Effect: After restart

Specifies the host name of the SMTP server to which SCS sends alarm reactions of the E-Mail type.

smtp_port

Default Value: 25
Valid Values: Port number
Changes Take Effect: After restart

Specifies the port number of the SMTP server to which SCS sends alarm reactions of the E-Mail type.

[snmp] Section

This section controls how SCS handles network monitoring using SNMP.

This section must be called **snmp**.

netsnmp-enable

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: After restart

When set to `true`, Net-SNMP is enabled in this SNMP Master Agent object. If this option is not set, or set to `false` (the default), SCS and LCA will treat this object as a Genesys SNMP Master Agent.

See the following documents for more information about Net-SNMP:

- *Framework Deployment Guide* to deploy Net-SNMP in your system
- *Management Layer User's Guide* to use Net-SNMP in your system.
- *Management Framework Migration Guide* to migrate to Net-SNMP.

[log] Section

This section controls SCS logging.

This section must be called **log**.

Solution Control Server supports the log options described in this section in addition to those described in the Common Configuration Options chapter. Note, however, that SCS always uses full log message format, regardless of the **message_format** option setting.

alarm

Default Value: No default value
Valid Values (log output types):

`stdout`	Alarms are sent to the Standard output (stdout).
`stderr`	Alarms are sent to the Standard error output (stderr).
`network`	Alarms are sent to Message Server, which resides anywhere on the network, and Message Server stores the log events in the Log Database.
`memory`	Log events are sent to the memory output on the local disk. This is the safest output in terms of application performance.
`[filename]`	Alarms are stored to a file with the specified name.
`syslog`	Alarms are sent to the operating-system log.

Changes Take Effect: Immediately

Specifies to which outputs SCS sends those alarms it generates as a result of appropriate Standard log events. When you configure more than one output type, separate them by a comma. This option is the same as the **alarm** option in Common Log Options chapter, with the additional value Syslog that is specific to SCS.

> ### Important
> For SCS to generate alarms, you must set the **verbose** option to a value other than none.

Example:
To output alarms generated as a result of appropriate Standard log events into the log of the operating system and to a network Message Server, specify `alarm` as the SCS configuration option and Syslog, network as the option value.

eventloghost

Default Value: No default value

Valid Values: Host name
Changes Take Effect: Immediately

Specifies the hostname of the computer whose operating-system log should store Genesys alarm messages. The option works with the alarm output level and applies only to computers running Windows NT. If you do not configure this option or do not set its value, alarms are sent to the operating-system log of the computer on which SCS runs.

Transport Parameter Options

Set options in this section in the Transport Parameters of the properties of the port used for the connection to Message Server, using the following navigation path in Genesys Administrator:

- Solution Control Server `Application` object > `Configuration` tab > `General` section > `Connections` > Connection to Log Message Server > `Connections Info` > `Advanced` tab > `Transport Parameters`

transport Option

Collectively, the options make up the parameters of the `transport` option. When entering the options in Genesys Administrator, only the options are required; `transport =` is prefixed automatically to the list of option/value pairs.

> **Important**
> Valid values for these options must have no spaces before or after the delimiter characters ";" (semi-colon) and "=".

alarms-port

Default Value: `0` (zero)
Valid Values: A valid port number
Changes Take Effect: After restart of Solution Control Server.

Specifies the port number of a client-side port that will be used for the subscription connection from Solution Control Server to the primary Log Message Server.

backup-alarms-port

Default Value: `0` (zero)
Valid Values: A valid port number
Changes Take Effect: After restart of Solution Control Server.

Specifies the port number of a client-side port that will be used for the subscription connection from Solution Control Server to the backup Log Message Server.

Configuring ADDP Between SCS and LCA

Advanced Disconnection Detection Protocol (ADDP) is enabled automatically between Solution Control Server and Local Control Agent. To customize its settings, configure **addp-timeout** and **addp-remote-timeout** options in the Host object, as described in Host Configuration Options chapter.

Changes in 8.5.x

The following table lists all changes to Solution Control Server options in the 8.5.x release.

Option Name	Option Values	Type of Change	Details
[general] Section			
cfglib-connect-tmout	`0-65536`	New	
default-audit-username	GAX_backend or name of any configured Application	New	
disable-switchover	`true, false`	New	
distributed_sync_timeout	`0` or any positive integer	New	
hostinfo-load-timeout	`10–120`	New	
max_switchover_time	`0` or any positive integer	Removed	
app-switchover-timeout	`0` or any positive integer	New	
[mailer] Section			
smtp_host	Valid host name	Modified	No longer uses MAPI.
[snmp] Section (new)			
netsnmp-enable	`true, false`	New	
[log] Section			
haflip-detect-timeout	1–2147483647	New	

SNMP Master Agent Configuration Options

This chapter describes the configuration options for Genesys Simple Network Management Protocol (SNMP) Master Agent and includes the following sections:

Genesys SNMP Master Agent also supports the options described in Common Configuration Options chapter.

Setting Configuration Options

Unless specified otherwise, set Genesys SNMP Master Agent options in the options of the Genesys SNMP Master Agent Application object, using the following navigation path:

- `Genesys SNMP Master Agent Application` object > `Options` tab > `Advanced View (Options)`

> **Warning**
> Configuration section names, configuration option names, and predefined option values are case-sensitive. Type them in Genesys Administrator exactly as they are documented in this chapter.

Mandatory Options

You do not have to configure any options to start Genesys SNMP Master Agent.

[agentx] Section

Options in this section define the connection between Genesys SNMP Master Agent and Solution Control Server (SCS).

This section must be called **agentx**.

> **Important**
>
> If you use a third-party SNMP master agent to communicate between your Genesys installation and a third-party Network Management System (NMS), you have to configure the **agentx** section and appropriate options when you create an `Application` object of the SNMP Agent type. Although your third-party SNMP master agent does not retrieve or use this configuration, SCS checks these settings for its connection to the SNMP master agent. Also, make sure that the option values match the actual configuration settings in your third-party SNMP master agent application.

force_host_network

Default Value: `0`
Valid Values: `0`–`2`
Changes Take Effect: After restart

Specifies the host network for connection between SCS and Genesys SNMP Master Agent. The following are the valid values:

- `0` (the default)—If SCS and SNMP host object value is the same, then Solution Control Server and Genesys SNMP Master Agent connection happens via the localhost. If not, the connection happens via the network host.
- `1`—Forces to connect via host network interface.
- `2`—Forces to connect via localhost unconditionally.

mode

Default Value: `TCP`
Valid Values: `TCP`
Changes Take Effect: After restart

Specifies the connectivity mode for the AgentX-protocol connection between Genesys SNMP Master Agent and SCS. If you do not configure the option, don't set its value, or set it to TCP, Genesys SNMP Master Agent uses a TCP/IP socket for the connection. The **tcp_port** configuration option defines the actual port number in this case.

> **Important**
>
> For Genesys SNMP Master Agent (or a third-party SNMP master agent) running on a Windows operating system, TCP is always taken as the actual value for the mode configuration option.

tcp_port

Default Value: 705
Valid Values: Any valid port number
Changes Take Effect: After restart

Specifies the port number Genesys SNMP Master Agent opens for connection in TCP mode. When you do not configure the option, don’t set its value, or set it an invalid (non-integer or zero) value, Genesys SNMP Master Agent opens the default port (705) for the TCP/IP connection.

[snmp] Section

Options in this section define SNMP-related parameters, as for SNMPv1/v2 and for SNMPv3. Because of the differences in security implementation for different versions of SNMP, some options control access to Genesys MIB (management information base) objects via SNMPv1/v2 requests and others control access to Genesys MIB objects via SNMPv3 requests.

This section must be called **snmp**.

Use the following options to configure SNMPv1/v2 access:

- read_community
- write_community

These configuration options do not control access to MIB objects via SNMPv3 requests.

Use the following options to configure SNMPv3 access:

- v3_username
- v3auth_password
- v3priv_password
- v3auth_protocol
- v3priv_protocol
- password (in section **snmp-v3-auth**)
- password (in section **snmp-v3-priv**)

These configuration options do not control access to MIB objects via SNMPv1/v2 requests.

> **Important**
>
> If you do not configure the **snmp** section or any of its options, Genesys SNMP Master Agent provides access in SNMPv3 mode, with the default settings as described in this section. Access in SNMPv1/SNMPv2 mode is denied.

read_community

Default Value: No default value
Valid Values: Any valid community name
Changes Take Effect: After restart

Specifies the SNMP community name that Genesys SNMP Master Agent uses to authenticate SNMPv1/v2c GET and GET NEXT requests. That is, Read permissions for all Genesys MIB objects are granted to the specified community. If you do not configure the option or don't set its value, this **write_community** option controls SNMPv1/v2 Read access.

trap_target

Default Value: No default value
Valid Values: A list of any number of SNMP trap targets, separated by commas, in the following format:
`<host name>/<port number>:<community name>`
Changes Take Effect: After restart

Specifies where Genesys SNMP Master Agent sends trap notifications. You can specify a host IP address instead of a hostname. If you do not specify a community name, Genesys SNMP Master Agent sends trap notifications to the `public` community.

For example:
`host1/162:public_t1, 127.0.0.1/163:public_t2`

v3_username

Default Value: `default`
Valid Values:

`default`	
`<string>`	User name

Changes Take Effect: After restart

Specifies the user name used for issuing SNMPv3 requests. Genesys SNMP Master Agent does not accept SNMPv3 requests other users may send. A user with the specified user name receives:

- Read permissions for all Genesys MIB objects.
- Write permissions for all Genesys MIB objects except for the objects in the VACM and USM MIB files. Genesys SNMP Master Agent excludes VACM and USM MIB objects from the group of writable objects to prevent remote NMS users from changing security attributes.

The user should send SNMPv3 requests for the default (empty) context.

v3auth_password

Default Value: No default value
Valid Values: Any valid password
Changes Take Effect: After restart

Specifies the SNMPv3 user password used for authentication.

Warning

- The password specified by this option is visible in Genesys Administrator, and is not encrypted in the Configuration Database.
- To hide the password in the interface and encrypt it in the database, use the **password** option in the **[snmp-v3-auth]** section instead of this option.
- Do not use both of these options in the same SNMP Master Agent.

v3auth_protocol

Default Value: none
Valid Values:

MD5	HMAC-MD5-96 authentication protocol
SHA	HMAC-SHA5-96 authentication protocol
none	No authentication

Changes Take Effect: After restart

Specifies the authentication protocol, if any, to authenticate messages sent or received on behalf of this user. If you do not configure the option, do not set its value, or set it to an invalid value, Genesys SNMP Master Agent uses no authentication.

v3priv_password

Default Value: No default value
Valid Values: Any valid password
Changes Take Effect: After restart

Specifies the SNMPv3 user password used for the privacy of data.

Warning

- The password specified by this option is visible in Genesys Administrator, and is not encrypted in the Configuration Database.
- To hide the password in the interface and encrypt it in the database, use the **password** option in the **[snmp-v3-priv]** section instead of this option.
- Do not use both of these options in the same SNMP Master Agent.

v3priv_protocol

Default Value: none
Valid Values:

none	No encryption
DES	CBC-DES privacy protocol

Changes Take Effect: After restart

Specifies whether encryption is used for SNMPv3 messages sent or received on behalf of this user and, if so, using which privacy protocol. This option applies only if the **v3auth_protocol** option is set to a valid value other than none. If you do not configure the **v3auth_protocol** option, do not set its value, or set it to an invalid value, Genesys SNMP Master Agent uses no encryption.

write_community

Default Value: No default value
Valid Values: Any valid community name
Changes Take Effect: After restart

Specifies the SNMP community name that Genesys SNMP Master Agent uses to authenticate SNMPv1/v2c SET, GET, and GET NEXT requests. That is, the specified community receives:

- Read permissions for all Genesys MIB objects.
- Write permissions for all Genesys MIB objects except for the objects in the VACM and USM MIB files. Genesys SNMP Master Agent excludes VACM and USM MIB objects from the group of writable objects to prevent remote NMS users from changing security attributes.

If you do not configure the option or set its value, no SNMPv1/v2 Write access is allowed.

[snmp-v3-auth] Section

This section contains options used to mask and encrypt the SNMPv3 user password used for authentication. Refer to the *Genesys Security Deployment Guide* for information about this feature.

This section must be called **snmp-v3-auth**.

password

Default Value: No default value
Valid Value: A valid password
Changes Take Effect: After restart

The user password for authentication in the SNMPv3 system. This option causes the SNMPv3 password to be masked in Genesys Administrator to prevent others from seeing what is being typed. This option also causes Configuration Server to encrypt the password when storing it in the Configuration Database.

> **Important**
>
> Do not use this option and the **v3auth_password** option in the same SNMP Master Agent.

[snmp-v3-priv] Section

This section contains options used to mask and encrypt the SNMPv3 user password used for the privacy of data. Refer to the *Genesys Security Deployment Guide* for complete information about this feature.

This section must be called **snmp-v3-priv**.

password

Default Value: No default value
Valid Value: A valid password
Changes Take Effect: After restart

The user password for data privacy in the SNMPv3 system. This option causes the SNMPv3 password to be masked in Genesys Administrator to prevent others from seeing what is being typed. This option also causes Configuration Server to encrypt the password when storing it in the Configuration Database.

> **Important**
> Do not use this option and the **v3priv_password** option in the same SNMP Master Agent.

Changes in 8.5.x

The following table lists all changes to SNMP Master Agent options in the 8.5.x release.

Option Name	Option Values	Type of Change	Details
[agentx] Section			
force_host_network	0–2	Modified	Supports new value "2".

Host Configuration Options

This chapter describes configuration options for a Host object, and contains the following sections:

Setting Configuration Options

Unless specified otherwise, set Host configuration options in the annex of the Host object, using the following navigation path:

- `Host` object > `Options` tab > `Advanced View (Annex)`

> **Warning**
> Configuration section names, configuration option names, and predefined option values are case-sensitive. Type them in Genesys Administrator exactly as they are documented in this chapter.

Mandatory Options

You do not have to configure any options for a Host.

[addp] Section

This section contains the parameters necessary to configure Advanced Disconnect Detection Protocol (ADDP) between Local Control Agent (LCA) and Solution Control Server.

This section must be called **addp**.

addp-timeout

Default: 9
Valid Values: 0 or any positive integer
Changes Take Effect: When connection is reestablished

Specifies the ADDP timeout in seconds used by Solution Control Server. If Solution Control Server does not receive messages from LCA within this interval, Solution Control Server sends a polling message. Solution Control Server interprets the lack of response from LCA within the same time period as a loss of connection.

If this value is set to 0, ADDP is not used by Solution Control Server.

> **Important**
> If there is particular risk of network delays, Genesys recommends setting ADDP timeouts to values equal to or greater than 10 seconds, instead of relying on default values to avoid false detection of disconnection.

addp-remote-timeout

Default: 0
Valid Values: 0 or any positive integer
Changes Take Effect: When connection is reestablished.

Specifies the ADDP timeout in seconds used by LCA. After the connection between Solution Control Server and LCA is established, this value is passed to LCA. If LCA does not receive messages from Solution Control Server within this interval, LCA sends a polling message. LCA interprets the lack of response from Solution Control Server within the same time period as a loss of connection.

If this value is set to 0 (default), ADDP is not used by LCA.

addp-trace

Default Value: off
Valid Values:

`false, no, off`	Turns ADDP off.
`true, yes, on, local`	ADDP trace occurs on the side of SCS.
`remote`	ADDP trace occurs on the side of LCA.
`both, full`	ADDP trace occurs at both SCS and LCA.

Changes Take Effect: After restart

Determines whether ADDP messages are written to the primary and backup SCS log files. This option applies only if the value of the protocol option is **addp**.

[ntp-service-control] Section

This section contains configuration options to control NTP services.

This section must be called **ntp-service-control**.

signature

Default Value:

Windows	`W32Time`
Red Hat Linux	`/usr/sbin/ntpd`
AIX	`/usr/sbin/xntpd`
Solaris	`/usr/lib/inet/xntpd`

Valid Values:

Windows	Valid service name
Other platforms:	Command line for executing NTP daemon process.

Changes Take Effect: Immediately

Enables the configuration of an NTP service or daemon signature.

[rdm] Section

This section contains the option necessary to configure remote deployment using Genesys Administrator.

This section must be called **rdm**.

port

Default: 5000
Valid Values: A valid port number
Changes Take Effect: Immediately

Specifies the port used by the Genesys Deployment Agent to remotely deploy applications on this host.

> **Important**
>
> The value of this option must be the same as the port number entered on the command line when starting Genesys Deployment Agent. Refer to the *Framework Deployment Guide* for information about starting Genesys Deployment Agent. Refer to the *Genesys Administrator Extension Help* for information about remote deployment using Genesys Administrator Extension.

[security] Section

This section contains the configuration options related to security.

In addition to the options described below, this section also contains options required to configure secure data exchange using TLS. Refer to TLS Configuration Options for information about these options.

This section must be called **security**.

ip-version

Default Value: `4,6`
Valid Values: `4,6` and `6,4`
Changes Take Effect: At restart

Specifies the order in which IPv4 (4) and IPv6 (6) are used on the connection between SCS and LCA. This option is set in the Annex of the Host object.

Refer to the table in Configuring Mixed IPv4 and IPv6 Environments section to see how this option affects the connection for which it is configured.

For more information about IPv6, refer to the Solution Availability and IPv6 sections of the *Framework Deployment Guide*.

Tenant and User Configuration Options

This chapter describes configuration options for a Tenant object and related options for a User object. The options set at the User level either override Tenant-level options, or contain information about actions taken as a result of Tenant-level options or their overrides.

This chapter contains the following sections:

> **Important**
> The User configuration options described in this chapter are not a complete set of options available, nor are they considered mandatory for a User. Refer to the documentation for the Genesys applications you are installing for additional User-level options that may be required.

Setting Configuration Options

Unless specified otherwise, set Tenant configuration options in the annex of the Tenant object, using the following navigation path:

- `Tenant` object > `Options` tab > `Advanced View (Annex)`

The options in this section apply to all objects owned by the Tenant in which the options are set, unless the options are overridden in a child Tenant or at the User-level.

Unless specified otherwise, set User configuration options in the annex of the User object, using the following navigation path:

- `User` object > `Options` tab > `Advanced View (Annex)`

> **Warning**
> Configuration section names, configuration option names, and predefined option

> values are case-sensitive. Type them in Genesys Administrator exactly as they are documented in this chapter.

Mandatory Options

You do not have to configure any options described in this chapter for a Tenant or User.

Passwords in Configurations with Multiple Tenants

In configurations with multiple Tenants, the inheritance rule applies for many of the password-related features listed in this chapter. If a feature is not configured for a particular tenant, rules for ancestor tenants are used, up to the `ENVIRONMENT` tenant (assuming there is no termination of inheritance otherwise). If no rule is set in the ancestor tree, no limits exist.

If a particular tenant requires different settings from its ancestors, you can configure it in two ways:

- Configure only those settings to be changed. Use this method only if you want to change a few specific settings; otherwise use inherited value for the other settings. This will override the inherited values for those settings and leave the values of other settings unchanged, including those inherited from ancestor tenants. Where applicable, child tenants of this tenant will inherit the new values of the changed settings.
- Reset all options to their default values, and then customize the values as required for this tenant. Use this method only if you want to reset or change multiple settings for this tenant and its descendants. To set all options in the **[security-authentication-rules]** section to their default settings, set the **tenant-override-section** option to `true`. This option breaks the inheritance chain, effectively making this tenant a new inheritance node for all child tenants, and is easier than changing each option manually. Then, for this tenant and its child tenants, you can set appropriate values for any individual option for which you do not want the default value to apply.

[security-authentication-rules] Section

This section contains configuration options for defining custom properties of user passwords and setting up and using passwords. The options in this section are configured at either the tenant level or the user level. Refer to the User Passwords chapter in the *Genesys Security Deployment Guide* for complete information about these options.

This section must be called **security-authentication-rules**.

Tenant-level Options

The following options are configured in the [**security-authentication-rules**] section in the annex of the Tenant object, as follows:

- `Tenant` object > `Options` tab > `Advanced View (Annex)`

account-expiration

Default Value: `0`
Valid Values: `0` to 365
Changes Take Effect: Rule validation occurs the next time an account belonging to this Tenant tries to log in or authenticate, or when a User object belonging to this Tenant is retrieved or changed

Specifies the maximum number of days for which an account can remain idle. After this time interval, the account will be considered expired and the user will not be able to log in until the account has been reactivated by the system administrator. Configuration Server checks for expired accounts when an account belonging to this Tenant tries to log in or authenticate, or when a User object belonging to this Tenant is retrieved or changed.

> **Important**
> Account expiration functionality does not work correctly if the Last Login feature is not configured. That is, the master Configuration Server and all Configuration Server Proxies must have the **last-login** and **last-login-synchronization** options both set to `true`. Calculations for the expiration of a particular account starts after the first login is recorded as a part of the Last Login feature; if the last login is not available, account expiration does not apply.

If set to `0` (the default), there is no expiration of idle accounts for any user.

In configurations with multiple Tenants, this value applies to all child Tenants unless it is overridden in a child Tenant. See Passwords in Configurations with Multiple Tenants for more information.

> **Important**
>
> - This option does not apply to the `Default` account, which does not expire.
> - This option does not apply to accounts that are externally authenticated if an external authentication Domain was configured.
> - This option can be overridden for individual users using the **override-account-expiration** option.

account-lockout-attempts-period

Default Value: `0`
Valid Values: `0–20`
Takes Effect: At the next occurrence of an unsuccessful login attempt

Specifies the length of time (in minutes) since the last unsuccessful login attempt in which another unsuccessful attempt will be counted toward the lockout threshold specified by **account-lockout-threshold**. If another unsuccessful attempt is recorded before this time interval expires, the time of this latest attempt becomes the basis from which this time period is calculated. In effect, this period is a sliding window.

If no additional unsuccessful attempts occur within this time period, the number of unsuccessful attempts is cleared, and previous attempts are not counted towards the lockout threshold.

This time period applies to all user accounts belonging to this Tenant unless overridden at the User level by the **account-override-lockout** option.

In configurations with multiple Tenants, this value applies to all child Tenants unless it is overridden in a child Tenant. See Passwords in Configurations with Multiple Tenants for more information.

account-lockout-duration

Default Value: `30`
Valid Values: `0–1440`
Takes Effect: Next time an account is locked out

Specifies the length of time (in minutes) that the lockout lasts after the lockout condition has been met.

Accounts already locked when this option is changed are released after the time specified by this option elapses, regardless of how long they were locked out originally.

This lockout duration applies to all user accounts belonging to this Tenant unless overridden at the User level by the **account-override-lockout** option.

In configurations with multiple Tenants, this value applies to all child Tenants unless it is overridden in a child Tenant. See Passwords in Configurations with Multiple Tenants for more information.

account-lockout-mode

Default Value: `0`
Valid Values: `0`, `1`
Takes Effect: Next time an account is locked out

Specifies whether an account will remain locked (after a user repeatedly enters incorrect authentication credentials) until the administrator unlocks it manually.

- If set to `1`, the **account-lockout-duration** option is ignored and the account remains locked until an administrator unlocks it.
- If set to `0` (the default), the account remains locked out for the time period configured using the **account-lockout-duration** option.

The administrator can unlock an account using any of the following methods:

- Changing the password for the user.
- Enabling force password reset for the user.
- Setting the **account-override-lockout** option to true at User-level, which overrides the account lockout for that user.

account-lockout-threshold

Default Value: `0`
Valid Values: `0` to `8`
Takes Effect: At next attempt to log in

Specifies the number of consecutive unsuccessful login attempts that a user account can make before being locked out. When set to the `0` (the default), no lockout will occur. This threshold applies to all user accounts belonging to this Tenant unless overridden at the User level by the **account-override-lockout** option.

force-password-reset

Default Value: `false`
Valid Values: `false`, `true`
Takes Effect: Immediately

Specifies whether all applications must prompt all of their users to change their passwords at first login. If set to true, all users for whom password reset is enabled (**Reset password** is checked on the user **Configuration** tab) will be unable to login unless they reset their password the next time that they log in. Any exceptions to the policy of changing passwords at first login (down-level applications or applications for which the **no-change-password-at-first-login** option is set to `true`) will not be permitted.The user will not be able to log in until he or she uses the correct application or the administrator clears the **Reset password** checkbox on the corresponding User object's **Configuration** tab.

For example, you might want to use this option to ensure that there are no exceptions to the policy of changing passwords at first login.

max-account-sessions

Default Value: 0
Valid Values: 0 to 128
Takes Effect: At next attempt to connect to Configuration Server.

Specifies the number of simultaneous connections that each account can have with a single instance of Configuration Server. If an account tries to exceed the number of connections, login is denied.

In configurations with multiple Tenants, if this option is missing from the Tenant in which the account is logging in, the value set in the Parent up to the inheritance node for this Tenant applies. See Passwords in Configurations with Multiple Tenants for more information.

If this option is set to 0 (the default), there are no limits.

This option can be overridden for individual users by setting this option, with the same valid values, in the annex of the particular User object.

> **Important**
>
> Sessions restored and authenticated through existing sessions are not included in the count of sessions for this option.

object-deletion-rate

Default Value: 0
Valid Values: Any positive integer
Takes Effect: Immediately

Specifies the maximum number of objects that a user can delete within the interval configured in the **object-deletion-rate-interval** option.

When a user tries to delete beyond the configured limit, then Configuration Server rejects the request and generates a corresponding error message.

When set to 0 (zero), this feature is disabled.

object-deletion-rate-interval

Default Value: 1440 minutes
Valid Values: Any positive integer
Takes Effect: Immediately

Specifies the maximum amount of time (in minutes) in which a user can delete the number of objects configured in the **object-deletion-rate** option. Once the specified time expires, this option is reset to 0 and the user can continue to delete the objects until the next timeout.

When set to 0 (zero), this feature is disabled.

password-expiration

Default Value: `0`
Valid Values: `0` to 365
Takes Effect: Immediately

Specifies the number of days from when the user password was created and after which the password is considered expired and cannot be used. If set to `0` (the default), the password will not expire.

This option does not apply to empty passwords, nor to the password for the default account that never expires.

In configurations with multiple Tenants, this value applies to all child Tenants unless it is overridden in a child Tenant. See Passwords in Configurations with Multiple Tenants for more information.

password-expiration-notify

Default Value: `0`
Valid Values: `0` to 364
Takes Effect: Immediately

Specifies the number of days before a user password expires that a notice will be displayed to the user warning that his or her password will expire. To take effect, the specified value must be less than the number of days left before the password expires. If set to `0` (the default), no notification is sent.

This option applies only if the **password-expiration** option is configured at the Tenant level.

In configurations with multiple Tenants, this value applies to all child Tenants unless it is overridden in a child Tenant. See Passwords in Configurations with Multiple Tenants for more information.

password-min-length

Default Value: No default value
Valid Values: `0` to 64
Takes Effect: Immediately

Optional. Specifies the minimum length (in characters) of a password used by all users in the Tenant in which the option is defined. If this option is present, it overrides the **allow-empty-password** option in Configuration Server or Configuration Server Proxy.

If this option is set to `0`, an empty password is permitted (regardless of the value of **allow-empty-password**). If this option is set to a value greater than the maximum allowed value (64), the maximum value is used.

> **Important**
>
> - This option applies only to passwords used with internal authentication, however during person object creation, the password criteria must match with configuration irrespective

of whether external or internal authentication is used. This is because if external authentication is disabled, then it must fall back to internal authentication.

- This option applies only to passwords set after this option has been configured. Existing valid passwords that do not meet the minimum length requirement are not rejected during login; however, when the user tries to change one of these passwords, the new password will be subject to this option.
- Genesys recommends you use this option instead of the **allow-empty-password** option, which is provided only for purposes of backward compatibility.

password-no-repeats

Default: `0`
Valid Values: `0` to `30`
Changes Take Effect: At the next password creation or change

Specifies the number of password changes that must occur (that is, the number of old passwords) before a prior password can be reused. If set to `0` (the default), no history of used passwords is kept, and a password can be reused as desired.

In configurations with multiple Tenants, this value applies to all child Tenants unless it is overridden in a child Tenant. See Passwords in Configurations with Multiple Tenants for more information.

password-req-alpha

Default: `false`
Valid Values: `false`, `true`
Changes Take Effect: At the next password creation or change

Specifies whether a password must contain at least one US-ASCII alphabetic character (a-z, A-Z). If set to true, and a password being created or changed does not contain one or more alphabetic characters, Configuration Server will not save the changes.

In configurations with multiple Tenants, this value applies to all child Tenants unless it is overridden in a child Tenant. See Passwords in Configurations with Multiple Tenants for more information.

Important

- This option applies only to passwords used with internal authentication. It does not apply if you are using external authentication.
- This option applies only to passwords set after this option has been configured. Existing valid passwords that do not meet the alphabetic requirement are not rejected during login; however, when the user tries to change one of these passwords, the new password will be subject to this option.

password-req-mixed-case

Default: `false`
Valid Values: `false`, `true`
Changes Take Effect: At the next password creation or change

Specifies whether a password must contain at least one uppercase character (A-Z) and one lowercase character (a-z) from the US-ASCII character set. If set to true, and a password is created or changed does not contain one or more uppercase characters and one or more lowercase characters, Configuration Server will not save the changes.

In configurations with multiple Tenants, this value applies to all child Tenants unless it is overridden in a child Tenant. See Passwords in Configurations with Multiple Tenants for more information.

> **Important**
>
> - The password must contain at least one upper-case (A-Z) and one lower-case (a-z) ASCII character.
> - This option applies only to passwords used with internal authentication. It does not apply if you are using external authentication.
> - This option applies only to passwords set after this option has been configured. Existing valid passwords that do not meet the mixed-case requirement are not rejected during login; however, when the user tries to change one of these passwords, the new password will be subject to this option.

password-req-number

Default: `false`
Valid Values: `false`, `true`
Changes Take Effect: At the next password creation or change

Specifies whether a password must contain at least one numeric character (0-9). If set to true, and a password being created or changed does not contain one or more numeric characters, Configuration Server will not save the changes.

In configurations with multiple Tenants, this value applies to all child Tenants unless it is overridden in a child Tenant. See Passwords in Configurations with Multiple Tenants for more information.

> **Important**
>
> - This option applies only to passwords used with internal authentication. It does not apply if you are using external authentication.
> - This option applies only to passwords set after this option has been configured. Existing valid passwords that do not meet the numeric the requirement is not rejected during

login; however, when the user tries to change one of these passwords, the new password will be subject to this option.

password-req-punctuation

Default: `false`
Valid Values: `false`, `true`
Changes Take Effect: At the next password creation or change

Specifies whether a password must contain at least one punctuation character from the US-ASCII character set. If set to true, and a password being created or changed does not contain one or more punctuation characters, Configuration Server will not save the changes. The following punctuation characters are permitted:

- ! “ # $ % &’ ( ) * + , - . /
- : ; < = > ?
- [\ ] ^ _ `
- { | } ~

In configurations with multiple Tenants, this value applies to all child Tenants unless it is overridden in a child Tenant. See Passwords in Configurations with Multiple Tenants for more information.

Important

- This option applies only to passwords used with internal authentication. It does not apply if you are using external authentication.
- This option applies only to passwords that are set after this option has been configured. Existing valid passwords that do not meet the punctuation requirement are not rejected during login; however, when the user tries to change one of these passwords, the new password will be subject to this option.

shortcut-add-restriction-count

Default: `0`
Valid Values:Any positive integer
Changes Take Effect: Immediately

The maximum number of objects that can be moved by a User per change object request. Also the maximum number of shortcuts that can be added into an object group by a user per change request.

When a user tries to move objects or add shortcuts beyond the configured limit, then Configuration Server rejects the request and generates a corresponding error message.

> **Important**
> If set to `0`, there is no restriction. Only if value `>0`, restriction is applied.

shortcut-remove-restriction-count

Default: `0`
Valid Values:Any positive integer
Changes Take Effect: Immediately

Specifies the maximum number of shortcut objects that a user can delete per change object request. When a user tries to delete beyond the configured limit, then Configuration Server rejects the request and generates a corresponding error message. When set to `0` (zero), this feature is disabled.

tenant-override-section

Default: `false`
Valid Values: `false`, `true`
Changes Take Effect: Immediately

Applies only in a configuration with multiple Tenants; specifies how Configuration Server interprets or applies values for options in the configuration option section **security-authentication-rules**, as follows:

- If this Tenant has values configured for one or more of these options, those values are applied. Values for the other options are assigned as described in the following two bullets, depending on the value of this option (**tenant-override-section**).
- If this Tenant has no values configured for any of these options, and this option (**tenant-override-section**) is either absent or set to `false`, values defined at the nearest ancestor Tenant are applied.
- If this Tenant has no values configured for any of these options, and this option (**tenant-override-section**) is set to `true`, default values are applied to all options. Values assigned in ancestor Tenants are ignored for this Tenant.

In effect, this option allows customization of these options for this Tenant and its child Tenants, if required, and applies to all options in the **[security-authentication-rules]** section in the same object.

User-level Options

These options are configured at the User-level. They either override settings made at the Tenant level or contain information about actions taken as a result of settings at the Tenant level or their overrides at the User level. Options in this section are configured in the **security-authentication-rules** section in the annex of the `User` object, as follows:

- `User` object > `Options` tab > `Advanced View (Annex)`

> **Important**
> The User configuration options described in this section are not a complete set of options available for a User. Refer to the documentation for Genesys applications that you are installing for additional User-level options that might be required.

account-override-lockout

Default Value: `false`
Valid Values: `false`, `true`
Takes Effect: At the next attempt to log in to any instance of Configuration Server

Specifies whether this user account can be locked out. If set to `true`, this user can override the lockout rules set at its Tenant level. A `true` value can also be used to unlock, or clear, a locked account if set before the **account-lockout-duration** option is set at the Tenant level. If set to `false` (the default), the lockout will expire as configured at the Tenant level.

last-expired-at

Specifies when the user account expired, for example:
`Sat Oct 13 12:42:52 2012`

This option is set automatically by Configuration Server or Configuration Server Proxy and appears in the annex of the User object. The value is read-only and is for reference purposes only.

last-locked-at

Specifies when the user account was locked by the instance of Configuration Server to which the client application, used to review Person object options, is currently connected. For example:
`09/12/09 10:445 PM @confserv`

This option is set automatically by Configuration Server or Configuration Server Proxy and appears in the annex of the User object. The value is read-only and is for reference purposes only.

override-account-expiration

Default Value: `0`
Valid Values:

`0`	Default. No override; the expiration value set at the Tenant level applies. Each time that this account tries to log in or authenticate or an attempt is made to read or change the User object, the idle time calculation restarts.
`1`	No check for account expiration is made when the user tries to log in or authenticate, or when the User object is retrieved; the value of the Tenant-level option account-expiration is ignored. If this

	account is marked as expired (**last-expired-at** is set to a valid date/time stamp), it is reactivated.
2	Check for idle time does not occur at the next login attempt. After the user has logged in successfully, idle time calculation restarts and the value of this option is reset to 0 (the default).

Takes Effect: At the next time the user tries to log in or authenticate, or an attempt is made to read or change the User object.

Specifies if account expiration, as defined by the Tenant-level option **account-expiration**, applies to a particular user account.

> **Important**
>
> - This option does not apply to the `Default` account, which does not expire.
> - This option does not apply to accounts that are externally authenticated.

override-shortcut-add-restriction

Default Value: `false`
Valid Values: `true`, `false`
Takes Effect: Immediately

Configuration object move restriction disabled if set as `true` on person Object.

> **Important**
>
> If set to `true`, then there is no restriction on object movement between folders or object groups. Also no restriction on the number of shortcuts that can be added to object group.

override-object-deletion-rate

Default Value: `false`
Valid Values: `false`, `true`
Takes Effect: Immediately

Specifies whether to restrict a user account from deleting the configuration objects. By default, this feature is enabled. If set to `true`, restriction to delete the configuration options is disabled.

If the password of the Person object is changed, this option is reset to the default value (`false`).

override-password-expiration

Default Value: `false`
Valid Values: `false`, `true`
Takes Effect: At the next attempt to log in or authenticate the user

Specifies whether a password of the user for which this option is configured can override the expiration policy specified at the Tenant level by the **password-expiration** option. If set to `true`, the user password for this user will not expire. If set to `false` (default), the user password will expire as configured at the Tenant level.

This option applies only if **password-expiration** is configured at the Tenant level.

override-shortcut-remove-restriction

Default Value: `false`
Valid Values: `false`, `true`
Takes Effect: Immediately

Specifies whether to restrict a user account from deleting the shortcuts from the object group. By default, this feature is enabled. If set to `true`, restriction to delete the group object shortcuts is disabled.

Changes in 8.5.x

The following lists all changes to Tenant and User options in the 8.5.x release.

For information about Tenant configuration options that relate to external authentication, refer to the *Framework External Authentication Reference Manual*.

Option Name	Option Values	Type of Change	Details
[security-authentication-rules] Section			
password-no-repeats	0 to 30	Modified	The maximum supported value is changed from 10 to 30.
account-lockout-mode	0, 1	New	
object-deletion-rate	Any positive integer	New	
object-deletion-rate-interval	Any positive integer	New	
override-object-deletion-rate	false, true	New	
shortcut-remove-restriction-count	Any positive integer	New	
override-shortcut-remove-restriction	false, true	New	