Framework Deployment Guide

Configuration Server

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Contents

Configuration Server

If you want Configuration Server to operate with the Configuration Database, you must install Configuration Server in *Master* mode. This Configuration Server must be configured through a local configuration file.

Important

- The procedures given in this section are for deploying a primary Configuration Server. To deploy a Configuration Server Proxy, refer to Configuration Server Proxy for relevant installation instructions. To install a backup Configuration Server, refer to Redundant Configuration Servers.
- Refer to the *Framework External Authentication Reference Manual* for information about Configuration Server's External Authentication feature and for relevant deployment instructions.

Deploying Configuration Server

For more information about the Configuration Server configuration file, see Configuration Server Configuration File. For information about Configuration Server configuration options and their values, refer to the *Framework Configuration Options Reference Manual*.

1. Install Configuration Server. **[+] Show steps**

Installing on UNIX

Installing Configuration Server on UNIX

a. On the Management Framework 8.5 product CD, locate and open the installation directory **configuration_layer/configserver/<operating_system>**.

b. Type **install.sh** at the command prompt, and press **Enter**.

c. For the installation type, type 1 to select Configuration Server Master Primary, and press **Enter**.

d. For the external authentication option, type the number corresponding to the type of external authentication that will be used (LDAP, Radius, both, or neither), and press **Enter**.

> **Tip**
> If you select LDAP, be prepared with the URL to access the LDAP Server. For more information about LDAP configuration, see the *Framework External Authentication Reference Manual*.

e. Specify the full path of the destination directory, and press **Enter**.

f. If the target installation directory has files in it, do one of the following:

- Type 1 to back up all the files in the directory, and press **Enter**. Specify the path to where you want the files backed up, and press **Enter**.
- Type 2 to overwrite only the files in this installation package, and press **Enter**. Then type y to confirm your selection, and press **Enter**. Use this option only if the application that is already installed operates properly.
- Type 3 to erase all files in this directory before continuing with the installation, and press **Enter**. Then type y to confirm your selection, and press **Enter**.

The list of file names will appear on the screen as the files are copied to the destination directory.

g. For the product version to install, do one of the following:

- Type 32 to select the 32-bit version, and press **Enter**.
- Type 64 to select the 64-bit version, and press **Enter**.

h. To configure the Configuration Server during, or after, installation, do one of the following:

- Type y to configure Configuration Server during installation (now), and press **Enter**. Go to Step 9 to specify values for the configuration file. For information about the Configuration Server configuration options and their values, refer to the *Framework Configuration Options Reference Manual*.
- Type n to not configure Configuration Server during installation. In this case, you have finished installing Configuration Server-do not continue to the next step in this procedure. Before you can start Configuration Server, however, you must create a configuration file and set the configuration options in it.

i. For the **[confserv]** section:

i. Specify a value for the Configuration Server port, and press **Enter**.

ii. Specify a value for the Configuration Server management port, and press **Enter**.

j. For the **[dbserver]** section:

i. Type the number corresponding to the database engine that this Configuration Server uses (**dbengine**), and press **Enter**.

ii. Specify the name or alias of the DBMS that handles the Configuration Database (**dbserver**), and press **Enter**.

iii. To specify the name of the Configuration Database (dbname), do one of the following:

- If you are using an Oracle database engine (that is, you typed 3 in Step i), press **Enter**. This value is not required for Oracle.

- If you are using any other database engine, specify the name of the Configuration Database, and press **Enter**.

> **Important**
>
> If you are using DB Server to access the Configuration Database, you must also specify values for the **host** and **port** fields. Refer to Framework 8.1 documentation in this case.

iv. Specify the Configuration Database `username`, and press `Enter`.

v. To specify the Configuration Database password, do one of the following:

- Specify the password, and press **Enter**.
- Press **Enter** if there is no password; that is, the password is empty, with no spaces.

When the installation process is finished, a message indicates that installation was successful. The process places Configuration Server in the directory specified during the installation process. The installation script also writes a sample configuration file, **confserv.sample**, in the directory in which Configuration Server is installed.

If you chose to configure the Configuration Server during installation, the sample configuration file, **confserv.sample**, is renamed **confserv.onf**, and the parameters specified in Steps 9 through 11 are written to this file.

If you chose to configure the Configuration Server after installation, you must manually rename the sample file **confserv.onf** and modify the configuration options before you start Configuration Server. Go to the next step.

Installing on Windows

Installing Configuration Server on Windows

> **Warning**
>
> Genesys does not recommend installation of its components via a Microsoft Remote Desktop connection. The installation should be performed locally.

a. On the Management Framework 8.5 product CD, locate and open the installation directory **configuration_layer/configserver/windows**.

b. Locate and double-click **setup.exe** to start the Genesys Installation Wizard.

c. Click **About** on the wizard's **Welcome** page to review the **read_me** file. The file also contains a link to the server's Release Notes file.

d. On the **Welcome** page, click **Next**.

e. On the **Configuration Server Run Mode** page, select **Configuration Server Master Primary**.

f. On the **Configuration Server Parameters** page:

i. Specify the **Server Port** and **Management Port** for Configuration Server.

ii. Click **Next**.

g. On the **Database Engine Option** page, select the database engine that the Configuration Server uses, and click **Next**.

h. On the **DB Server Parameters** page:

i. Specify the **Database Server Name** and **Database Name**.

ii. Specify the **Database User Name** and **Password**.

i. On the **Configuration Server External Authentication** page, select the type of external authentication that the Configuration Server uses, or select **None** if Configuration Server is not using external authentication.

j. On the **Choose Destination Location** page, the wizard displays the destination directory specified in the **Working Directory** property of the server's Application object. If the path configured as **Working Directory** is invalid, the wizard generates a path to **c:\Program Files\GCTI\Configuration Server**. If necessary, do one of the following:

- Click **Browse** to select another destination folder. In this case, the wizard will update the Application object's **Working Directory** in the Configuration Database.
- Click **Default** to reinstate the path specified in **Working Directory**. Click **Next** to proceed.

k. On the **Ready to Install** information page, do one of the following:

- Click **Back** to update any installation information.
- Click **Install** to proceed with the installation.

l. On the **Installation Complete** page, click **Finish**.

As a result of the installation, the wizard adds Application icons to the:

- Windows **Start** menu, under **Programs > Genesys Solutions > Framework**.
- Windows **Add or Remove Programs** window, as a Genesys server.
- Windows **Services** list, as a Genesys service, with Automatic startup type.

2. Configure Configuration Server. If you manually installed Configuration Server on Windows, it was configured automatically during the installation process; you can skip this step. If you manually installed Configuration Server on UNIX and chose not to configure it during the installation process, you must configure it now. **[+] Show steps**

Prerequisites

- You manually installed Configuration Server on UNIX.
- You chose not to configure Configuration Server during the installation process.
- The Configuration Database has been initialized.

Procedure

1. From the directory in which Configuration Server is installed, open the sample configuration file (**confserv.sample**) in a text editor.
2. Set the configuration options to work with the Configuration Database and DB Server. Consult the

relevant chapters in the *Framework Configuration Options Reference Manual* for option descriptions and values. Refer also to Configuration Server Configuration File for a description of the configuration file.

3. Save the configuration file as **confserv.conf**.

End of procedure

3. If required, configure Configuration Server for multi-language environment support. **[+] Show steps**

Enable Configuration Server to Support UTF-8 Encoding in Multi-language Environments

Add the following options to the **[confserv]** (for Configuration Server) or **[csproxy]** (for Configuration Server Proxy) section of the configuration file:

- Set the **locale** option to the value corresponding to English (US). The database against which a UTF-8 enabled Configuration Server or Configuration Server Proxy is launched must be initialized using English locale scripts.
- Set the **encoding** option to `utf-8`.
- Set the **multi-languages** option to `true`. You must set this option after initializing the database and before you start Configuration Server against the UTF-8 enabled database.

For more information about these options, refer to the *Framework Configuration Options Reference Manual*.

4. If required, configure Windows Authentication with an MS SQL Server by doing the following:

- Ensure that a Configuration Server process is enabled for Windows Authentication.
- Configure access to the MS SQL Configuration Database for Configuration Server.

Refer to "Windows Authentication with MS SQL Server" in the Microsoft SQL Server Databases section of the *Framework Database Connectivity Guide for details.*

5. Start Configuration Server. **[+] Show steps**

Parameters

For descriptions of command-line parameters specific to Configuration Server, refer to Configuration Server.

Tip

- Use the **-c** command line option to point Configuration Server to a configuration file with the name other than the default name (**confserv.conf** on UNIX or **confserv.cfg** on Windows). For example, **confserv -c <configuration file name>**.
- If you are starting Configuration Server for the first time, and want to start logging during startup and initialization (referred to as *bootstrap logging*), include the **-log-<log option name> <log-type>** parameter in the startup command. At this point, you can also store these logs in a file separate from the operational logs—also include the **-log-<log-type> <filename>** parameters in the startup command.

Prerequisites

- Configuration Database is initialized.
- DB Server is installed and running.
- Configuration Server is installed.
- The Configuration Server configuration file is configured. Configuration Server uses this file for startup.

Starting on UNIX

Starting Configuration Server on UNIX

Go to the directory in which Configuration Server is installed and do one of the following:

- To use only the required command-line parameters, type the following command line:

  ```
  sh run.sh
  ```

- To specify the command line yourself, or to use additional command-line parameters, type the following command line:

  ```
  confserv [<additional parameters and arguments as required>]
  ```

Starting on Windows

Starting Configuration Server on Windows

Do one of the following:

- Use the **Start > Programs** menu.
- To use only the required command-line parameters, go to the directory in which Configuration Server is installed, and double-click the **startServer.bat** file.
- To specify the command line yourself, or to use additional command-line parameters, open the MS-DOS window, go to the directory in which Configuration Server is installed, and type the following command line:

  ```
  confserv.exe [<additional parameters and arguments as required>]
  ```

- Use Windows Services Manager. Refer to Starting and Stopping with Windows Services Manager for more information.

Configuration Server Configuration File

At a minimum, the configuration file contains the Configuration Server, Configuration Database, and

Log sections.

The Configuration Server section contains the configuration options that define Configuration Server. The name of the section corresponds to the name of the Configuration Server Application object. For the initial installation of Configuration Server, it is called **[confserv]** by default. You can choose to rename this Configuration Server later. In all other cases, or if you rename the initial Configuration Server, the name of this section will be different. The **server** configuration option in this section specifies the name of the Configuration Database section.

By default, the Configuration Database section does not have a name. The section name must be the same as the value of the **server** configuration option that you specified in the Configuration Server section. The Configuration Database section contains information about the Configuration Database.

The name of the Log section is **[log]**. This section contains configuration information about the logging to be done by Configuration Server.

You can find a sample Configuration Server configuration file in the *Framework Configuration Options Reference Manual*.

Configuring a Dedicated Port for Client User Interface Applications

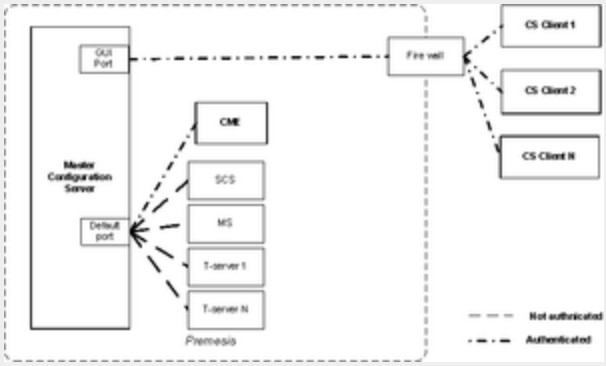
Warning

- Genesys strongly recommends that you do not restrict the default port to accept only client UI applications. Because the backup Configuration Server communicates with Configuration Server via the default port, and because many other Genesys Server applications cannot operate properly with being connected to the default port, restricting the default port would disable you from using these additional beneficial components.
- Ports that have been dedicated as **HA sync** (in the **Server Info** section of the port's **Configuration** tab in Genesys Administrator) cannot be provisioned to accept only client UI applications.

Starting in release 8.5.1, you can configure additional ports to which only client UI applications can connect. To configure this port, do the following:

1. Set up a firewall between client UI applications deployed in a less secure area of your network, for whom authorization is required, and applications, including Configuration Server, deployed in a more secured (restricted) area. The firewall directs all "outside" client UI applications to the dedicated port of Configuration Server, where they are authorized. Other "inside" applications continue to use their assigned ports.

   The following diagram illustrates a dedicated port within the firewall.



Dedicated Port on Master Configuration Server

2. After you have the firewall in place, configure the port to use as a dedicated port. You can use an existing port (not the default port) or create a new one. **[+] Show steps**

1. Open the **Server Info** section of the **Configuration** tab of the Configuration Server or Configuration Server Proxy application object.
2. In the **Listening Ports** section, select an existing port (not the `default` port) or create a new port to be used as the dedicated interface port.
3. In the **Port Info** dialog box, select the **Advanced** Tab.
4. Enter `user=1` in the **Application Parameters** field and click **OK**.
5. Save your changes.

Refer to the *Framework Configuration Options Reference Manual* for more information about the `user` parameter.

Configuring Configuration Server Logging

If you plan to use the centralized logging and auditing functionality of the Management Layer, specify appropriate log options in the Configuration Server configuration file before you start using Configuration Server. Most importantly, enable the network log output (for example, create a new option called **standard** and set its value to `network`). Refer to the *Framework Configuration Options Reference Manual* for more information.

Changing Configuration Server Port Assignments

When you install Configuration Server, you specify values for the listening and management ports in the configuration file. You can change these values at any time.

Changing these port assignments depends on the type of port. To change the value of the management port, you must update the configuration file with the revised information, and restart Configuration Server.

Changing the value of the listening port is more complex. As described in Multiple Ports on Configuration Server, Configuration Server reads its listening port assignment from the configuration

file once, at initial startup. For subsequent startups, it reads the port value from the Configuration Database. Therefore, you must change the value in the Configuration Database by modifying the **Port** property of the Configuration Server Application object.

[+] Show steps

Prerequisites

- You are logged in to Genesys Administrator.

Procedure

1. In Genesys Administrator, select the **Provisioning** tab, go to **Environment > Applications**, and double-click the Configuration Server Application object for which you want to change the listening port.
2. On the **Configuration** tab, open the **Server Info** section.
3. In the list of **Listening Ports**, do one of the following:
   - Click the port number that you want to change, enter the new port number, and either click outside of the edit box or press **Enter**.
   - Highlight the port that you want to change and click **Edit**. On the **General** tab of the **Port Info** dialog box, enter the new port number in the **Port** text box. Then click **OK**.
4. Click **Save** or **Save & Close** in the toolbar to save your configuration changes.

Encrypting the Configuration Database Password

You can use Configuration Server to encrypt your password for accessing the Configuration Database so that it does not appear in plain text in Configuration Server logs. This improves the security of your configuration data.

You can encrypt the password at any time, either during installation, or later. However, keep in mind that Configuration Server must be stopped during the encryption process.

In release 8.5.0 and earlier, the password was encrypted using an asymmetric encryption algorithm TEA with a hardcoded encryption/decryption key. For instructions on encrypting the Configuration Database password in release 8.5.0 or earlier, refer to the *Genesys Security Deployment Guide*.

Starting in release 8.5.1, the Configuration Server configuration file optionally supports an asymmetric encryption algorithm using separate encryption and decryption (private) keys that are not hardcoded. In this case, the keys are generated by Configuration Server and stored in separate files. The password is encoded using the key in the encryption file. Upon subsequent restarts of Configuration Server, it uses the key in the decryption file to decrypt and the password.

To encrypt the Configuration Database password in release 8.5.1 or later, do the following:

[+] Show steps

1. (Optional) Generate encryption keys for encoding and decoding passwords by starting Configuration

Server from the command-line with the parameter **-keys [<encryption file name> <decryption file name>]** (and the **-s** and **-c** parameters, if required). The optional subparameters indicate the name and path of the files containing the encryption and decryption keys, respectively. Configuration Server generates the keys and stores them in the file specified by the `-keys` parameter. If no files are specified, the keys are stored in the default files **enc.pem** and **dec.pem**. Configuration Server terminates when this step is complete, generating an error message if key generation was unsuccessful.

2. Encrypt the database password by starting Configuration Server from the command-line with the following parameters:
   - **-p <name of Configuration Database section><password value>** (and **-s** and **-c**, if required)
   - **-keys [<encryption file name> <decryption file name>]**—Required only if you are using asymmetric encryption.

   If the **-keys** parameter is not specified, the hardcoded key is used to encrypt the password, as in previous releases. If **-keys** is specified, Configuration Server creates the encryption and decryption keys and the password is encrypted using the key in the specified encryption file, or **enc.pem** if no file is specified. In both cases, Configuration Server updates its configuration file with the encrypted password in the section specified by the **-p** parameter, and sets the **encryption** option to `true` in the Configuration Server section.

   > **Important**
   >
   > The user launching Configuration Server must have Write permission to the configuration file.

   If the **-keys** parameter is specified, Configuration Server also sets the decryption-key option in the Configuration Server section to point to the specified decryption file, or **dec.pem** if no file is specified. The presence of this option and **encryption=**`true` indicates that the password was encrypted using the asymmetric algorithm.

3. Start Configuration Server normally. If **encryption=**`true`, it will attempt to decrypt the database password stored in its configuration file using the hard-coded key (if **decryption-key** is not configured or set to an empty string), or use the decryption key stored in the file specified by **decryption-key**.

For Configuration Servers that are part of an HA pair, update each server's configuration file individually. However, they can use the same pair of encryption and decryption keys by specifying the same key file names when configuring encryption for the second server as the first server.

This enhanced encryption capability does not apply to Configuration Server Proxy.

Configuration Server might accept encryption and decryption keys generated by tools or components other than Configuration Server. These keys and their format must be compatible with the cryptography engine used by Configuration, specified in the following table:

Type	RSA asymmetric
Engine	OpenSSL 1.0.1
Key Length	1024 (when keys are generated internally by Configuration Server)
Embedded Key Generation	default open openssl modulus and RSA_F4 exponent parameters
File Usage	PEM files, that store the RSA key used for encryption or decryption. Both can be produced by Configuration Server.