Secude

HaloCAD

HaloCAD for Teamcenter

Installation Manual

Version 3.0

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Typographic Conventions

This guide uses the following typographic conventions to distinguish types of in-text information and icons to alert you to important information.

Convention	Description
Boldface type	• Items you must select, such as menu options, command buttons, or items in a list. • Titles of sections, sub-sections, etc.
Italic type	• To emphasize a word • Error messages • Table and Figure captions
`Consolas Font`	• Package names • Filenames and directory names • XML element names and attribute names • Parameters • File type • Code examples Example: `hesadm.exe start -user <domain\user> -pwd <password>`
Hyperlink	Provides quick and easy access to cross-referenced topics. Hyperlinks are highlighted in blue and underlined.
Admonitions	Note Provides additional information relevant to the topic. Warning Contains information about circumstances, parameters, and so on that MUST be fulfilled. Failure to comply will have consequences for the current operation. Tip Contains useful information about the operation of the application. Info Contains information, guidelines, or suggestions for performing tasks more effectively.

1. Introduction

Companies in industries such as automotive, aviation, and high-tech create and manage intellectual property (IP) through engineering drawings. These drawings are created digitally using computer-aided design (CAD) applications and are often shared with external users for business collaboration. It is important to understand the risks associated with sharing sensitive business information. Protecting sensitive engineering data requires comprehensive security measures. HaloCAD is a data protection solution that helps organizations protect sensitive engineering data.

2. How HaloCAD for PLM Protects Data

HaloCAD for PLM continuously monitors file upload and download operations within the PLM environment. It integrates with Microsoft Purview Information Protection to download sensitivity labels and perform file encryption and decryption.

- During file upload, HaloCAD for PLM checks whether the file is protected. If the file is encrypted, HaloCAD for PLM decrypts it before storing it in the PLM Vault.
- During file download, HaloCAD for PLM applies protection based on the configured action rules before delivering the file to the user.

For file uploads, HaloCAD for PLM performs file processing independently. For file downloads, HaloCAD for PLM relies on HaloENGINE GenNXT to evaluate the configured classification and action rules.

2.1. About this Manual

This manual describes the installation and configuration procedures specific to HaloCAD for Teamcenter.

Reference

Before proceeding with the instructions in this manual, administrators should:

1. Review the Technical Reference Manual to understand the HaloCAD architecture and prerequisites.
2. Review the Release Notes to verify the supported CAD applications.

2.2. Reference Manuals

The following table describes the HaloCAD documentation set and the information available in each manual.

For information on	Refer to
Step 1: Verify the supported operating systems, file types, and CAD applications.	`HaloCAD_Teamcenter_ReleaseNotes_EN_Online.pdf`
Step 2: Review the prerequisites before installation, including: • Registering an Application in Microsoft Entra ID - Web • HaloCAD Architecture • Office 365 Subscription Details • Recommended URLs, Addresses, and Ports for MPIP • Enable Support for TLS 1.2 at the Client Workstation for Microsoft Entra ID	`HaloCAD_Technical_Reference_Manual_EN_Online.pdf`
Step 3: Install the HaloCAD Add-on for Designcenter.	`HaloCAD_Designcenter_Manual_Installation_EN_Online.pdf`
Step 4: Install and configure HaloENGINE GenNXT.	`HaloENGINEGenNXT_Manual_Installation_EN_Online.pdf`
Step 5: Install and configure HaloCAD for Teamcenter.	Refer to the current manual.
Step 6: Understand the protection and decryption workflow.	`HaloCAD_Teamcenter_Manual_Operations_EN_Online.pdf`

HaloCAD reference documentation

2.3. Component Functions

The following components are involved in the HaloCAD architecture when deployed in an integrated environment:

1. HaloCAD Add-on for Designcenter
2. HaloCAD for Teamcenter
3. HaloENGINE GenNXT
4. Microsoft Purview Information Protection

The following sections describe the functions of each component.

HaloCAD Add-on for Designcenter performs

- Operates within the Siemens Designcenter application.
- Receives protected files from Teamcenter and displays their associated labels while enforcing permissions.
- Logs all add-on related activities for auditing purposes.

HaloCAD for Teamcenter

- Resides on the same network as the Siemens Teamcenter PLM server and acts as a proxy for client traffic to the PLM server
- Acts as a proxy component that listens for check-in and check-out actions initiated by the user via AWC browser/RAC session/other clients (Microsoft Office or Designcenter).
- Connects to Microsoft Purview Information Protection to download sensitivity labels.
- Collects metadata for the selected file.
- Obtains action and label information for the selected file from HaloENGINE GenNXT.
- Encrypts the file and forwards the file stream to the CAD client during check-out operations.
- Decrypts the file and stores the unprotected file in the PLM Vault during check-in operations.
- Logs HaloCAD for Teamcenter activities to the local log and sends monitoring logs to HaloENGINE GenNXT.

HaloENGINE GenNXT

- Is a Java-based server component that exposes a web service to HaloCAD for Teamcenter.
- Connects to Microsoft Purview Information Protection to download sensitivity labels and make them available for configuration.
- Implements business logic.
- Logs events received from HaloCAD for Teamcenter.

Microsoft Purview Information Protection

HaloCAD integrates with Microsoft Purview Information Protection to protect sensitive documents. Microsoft Purview Information Protection is an enterprise document security solution that ensures only authorized users can open protected content while controlling the actions they can perform, such as printing, editing, or saving. Even if sensitive data is accidentally or maliciously disclosed, unauthorized users cannot view the content in clear text.

Microsoft documentation

This manual assumes that Microsoft Purview Information Protection is already configured and that you are familiar with the Microsoft Entra admin center and related concepts. If you are new to Microsoft Purview Information Protection, refer to the Microsoft documentation for setup and configuration instructions.

3. Installing the HaloCAD for Teamcenter

This chapter explains the requirements, prerequisites, and how to install HaloCAD for Teamcenter.

3.1. System Requirements

The following table lists the system requirements for installing and running HaloCAD for Teamcenter.

Components	Details
Supported Operating System	Windows Server 2022 and above with updates installed.
Supported file types	1. Designcenter file types 2. PDF 3. MS Office native file types
Other requirements	Install HaloENGINE GenNXT and HaloCAD for Teamcenter separately on Windows servers.

Requirements

3.2. Prerequisites

Before installing HaloCAD for Teamcenter, ensure that the following prerequisites are met.

1. Ensure that you have administrative access to install HaloCAD for Teamcenter.
2. Ensure that the client computer running the HaloCAD Add-on for Designcenter can connect to the Teamcenter Server.
3. Ensure that your HaloENGINE GenNXT meets the requirements listed below:
   a. License file (enabled with the Teamcenter client type).
   b. Proper action rules
4. Ensure that the following system variables are set:
   a. **Default_Transient_Server** – The default location of the transient file server.
      - `Default_Transient_Server=http://<host>:<proxy port>/tc/fms`
      - For example, `Default_Transient_Server=http://tclu0310.secude.local:8080/tc/fms`
   b. **Fms_BootStrap_Urls** – The FMS server that manages file downloads.
      - `Fms_BootStrap_Urls=http://<host>:<proxy port>/tc/fms`
      - For example, `Fms_BootStrap_Urls=http://tclu0310.secude.local:8080/tc/fms`
5. Ensure that your Microsoft Entra ID application information is available. Refer to the Technical Reference Manual for more information.
6. Ensure that the certificate required for MPIP authentication is installed in the **Local Computer** certificate store, along with the Root CA and Intermediate CA certificates.
   a. If the certificate is CA-signed, install all related certificates in their respective stores (Root, Intermediate, and Personal).
   b. If the certificate is self-signed, install it in both the Trusted Root Certification Authorities and Personal stores of the Local Computer.
7. Ensure that an authentication approach is selected for HaloENGINE GenNXT and HaloCAD for SOLIDWORKS PDM: **Self-Signed Certificate** or **CA-Signed Certificate**.
   a. For a **Self-Signed Certificate**, export the public key of the HaloENGINE GenNXT server's self-signed certificate and install it in **Trusted Root Certification Authorities** on the system where HaloCAD for Teamcenter is installed.

b. For a **CA-signed certificate**, install the **Root CA certificate** in **Trusted Root Certification Authorities** on the system where HaloCAD for Teamcenter is installed. If an intermediate CA is used, ensure that the **intermediate CA certificate** is also available on the client system to validate the certificate chain.

8. For SSO-based SOA authentication,
   a. Ensure that the SSO Application ID and SSO SOA Login URL are available.
   b. Ensure that HaloCAD for Teamcenter is installed with a valid Windows user account instead of the Local System account.
   c. Ensure that the user running the service has the required permissions to access the Teamcenter/HaloCAD resources and configuration. Note: Running Tomcat under the Local System account may cause SSO issues. If SSO-related errors are observed, verify the account configured for the Tomcat Windows service. After changing the Tomcat service account, restart the Tomcat service.
9. AWC SSO Proxy URL Redirection Configuration
   a. Navigate to the **Teamcenter Security Services** configuration and open the `IdentityService.xml` file. For example:
   `C:\Siemens\Teamcenter2512\teamcenter_root\security_services\config\identity`
   b. Back up the `IdentityService.xml` file before modifying it.
   c. Identify the **SSO App ID** where the **AWC Gateway URL** is configured and replace the AWC Gateway URL with the HaloCAD Proxy URL. In the context entry, update the `tcsso.applicationRegistry_RootURL` value with the HaloCAD Proxy URL as shown in the following example:

```
<context-param>
    <param-name>tcsso.applicationRegistry_RootURL_2</param-name>
    <param-value>https://SVLU0381:8095</param-value>
</context-param>
```

   d. Restart the **Teamcenter Security Services** for the configuration changes to take effect.
10. If you want to implement a failover mechanism in HaloENGINE GenNXT, please refer to the section "Failover Mechanism for HaloENGINE GenNXT in HaloCAD for PLM".
11. Ensure that HaloCAD for Teamcenter and HaloENGINE GenNXT are installed using the same Azure tenant details. A mismatch in tenant details causes configuration errors.
12. To improve performance, configure MPIP labels to allow offline access. In the Microsoft Entra admin center, navigate to **Information Protection** > **Sensitivity labels** > select a label > **Items** > **Access**

control > **Allow offline access**, and select **Always**. Note: Allowing offline access can affect revocation. Consider this impact when configuring the offline access setting. For more information, see the Microsoft documentation, Restrict access to content by using sensitivity labels to apply encryption.

3.2.1. Conditions for Running the HaloENGINE GenNXT Tomcat Service

Before running the HaloENGINE GenNXT Tomcat Service, ensure that the following prerequisites are met.

3.2.1.1. Deny log on as a service policy

If the service runs under a specific user account or group, ensure that the user is not restricted by the **Deny log on as a service** policy (**Local Security Policy > Security Settings > Local Policies > User Rights Assignment**).

If the user is restricted by this policy, the following error message appears when starting the HaloENGINE GenNXT Tomcat Service: *"Error 1069: The service did not start due to a logon failure."*

Allow non-admin users to access a private key (without full administrator rights)

During installation, HaloENGINE GenNXT retrieves the required Microsoft Entra ID application details and certificate thumbprint. When the HaloENGINE GenNXT Tomcat Service starts, it connects to the MPIP services by using the details provided during installation. As part of this process, it validates the certificate thumbprint against the certificate installed in the **Local Computer** certificate store. The thumbprint entered during installation must match the thumbprint of the certificate installed in the **Local Computer** certificate store.

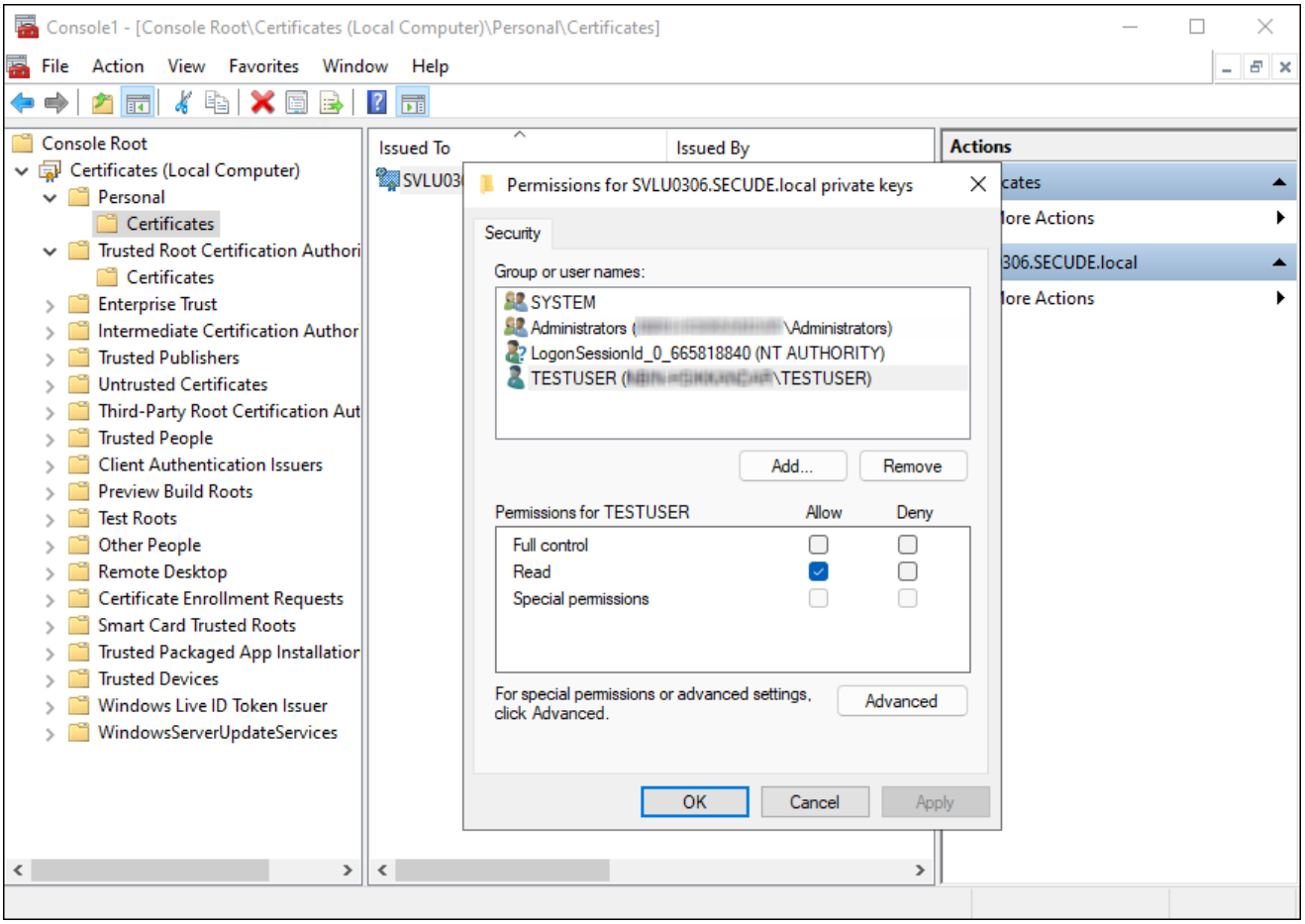
If the service runs under a non-administrative user account, the user might not have sufficient permissions to access the certificate's private key when the certificate is installed in the **Local Computer** certificate store. This restriction prevents successful authentication with MPIP services. To resolve this issue, grant the user **Read** permission to access the certificate's private key by following the procedure below. Any errors encountered during this process are recorded in the log file. If the verification succeeds, the service continues with initialization.

3.2.1.2. Prerequisites

- The required certificates (certificate used by MPIP service, root CA, and intermediate CA) are installed.
- The private key is stored in the Windows Certificate Store under **Local Computer**.
- You have administrator privileges to perform the configuration.

Follow the procedure below to grant read access:

1. Open **Certificate Manager** as Administrator.
2. Press **Win + R**, type mmc, and press **Enter**.
3. In the console, go to **File** and select **Add/Remove Snap-in**.
4. Select **Certificates** from the list and click **Add**.
5. Select **Computer account**, click **Next**, select **Finish**, and then click **OK**.
6. In the left navigation pane, expand **Certificates (Local Computer)**, expand **Personal**, and select **Certificates**.
7. Identify the certificate that contains the private key.
8. Right-click the certificate, select **All Tasks**, and then select **Manage Private Keys**.
9. In the **Permissions** window, click **Add** and enter the non-administrator username (for example, TESTIL) and click **OK**.
10. Select the **Read** permission, click **Apply**, and then click **OK**.



Granting private key access to a non-admin user

Result

The specified non-administrative user can access the certificate's private key, allowing the HaloENGINE GenNXT Tomcat Service to authenticate successfully with MPIP services.

3.3. Installation Modes

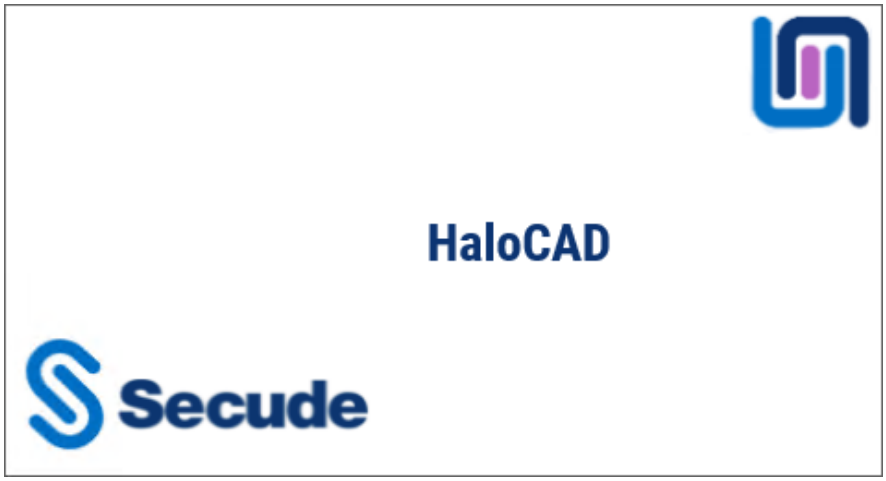
HaloCAD for Teamcenter supports the following installation modes:

1. **Graphical Mode**
   Graphical mode is an interactive installation method that uses a wizard-based graphical user interface.
2. **Silent Mode**
   Silent mode is a non-interactive installation method that installs HaloCAD for Teamcenter by using command-line options.

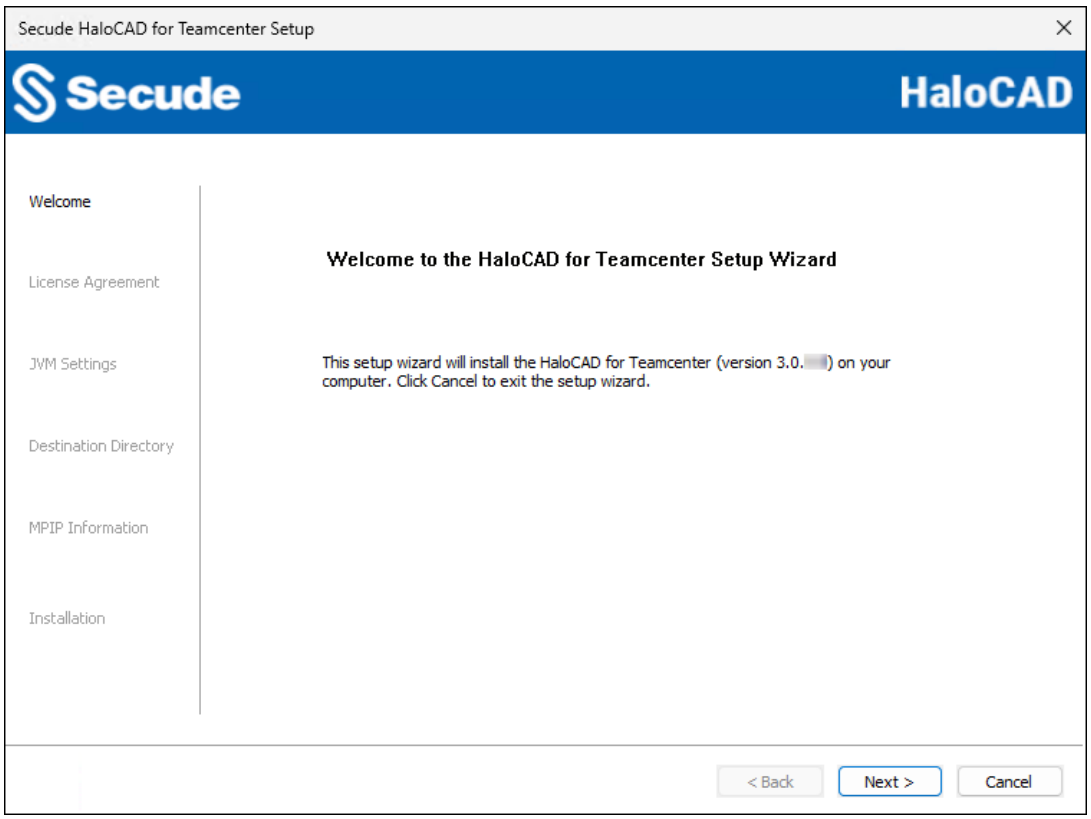
3.3.1. Graphical Mode

Install the HaloCAD component using the GUI-based setup program provided in the installation package.

1. To begin the interactive installation, double-click the `HaloCAD_Teamcenter_Setup.exe` installer. Depending on your Windows security settings, a security warning similar to *"Do you want to allow the following program to make changes to this computer?"* may appear. If prompted, click **Yes** to continue the installation.
2. When the installer starts, the **Startup** dialog appears, followed by the **Welcome** dialog.

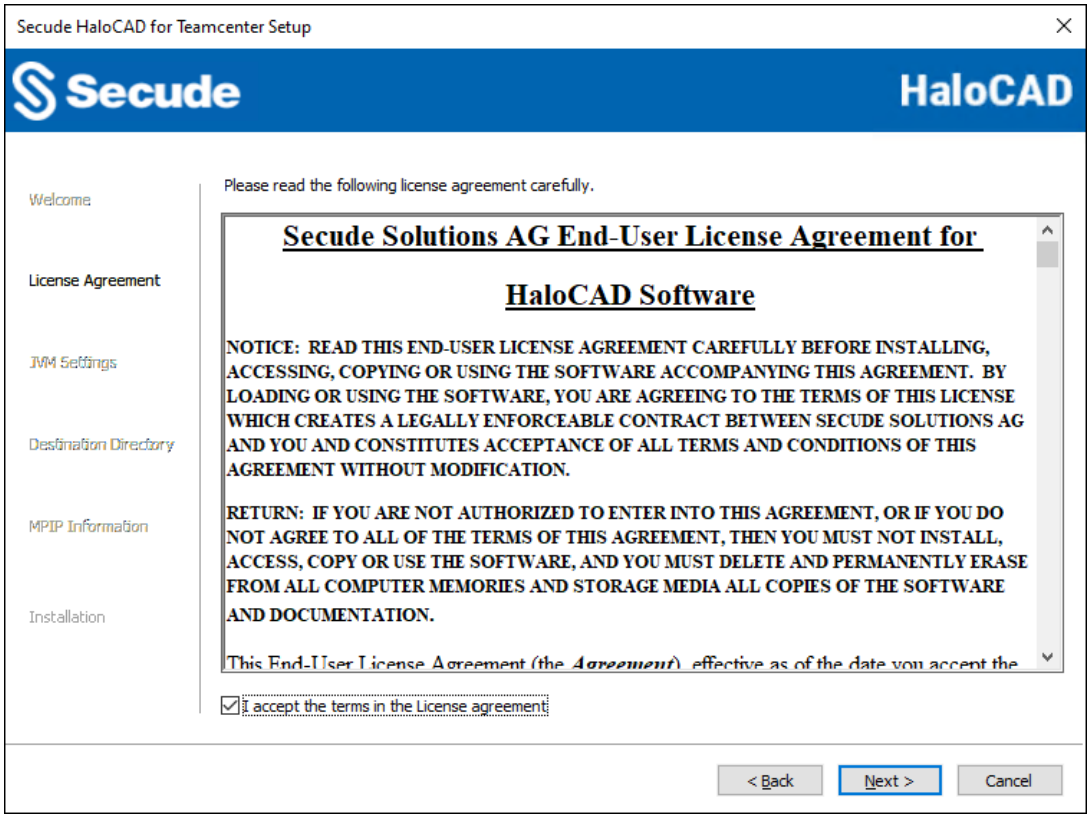


Startup Dialog



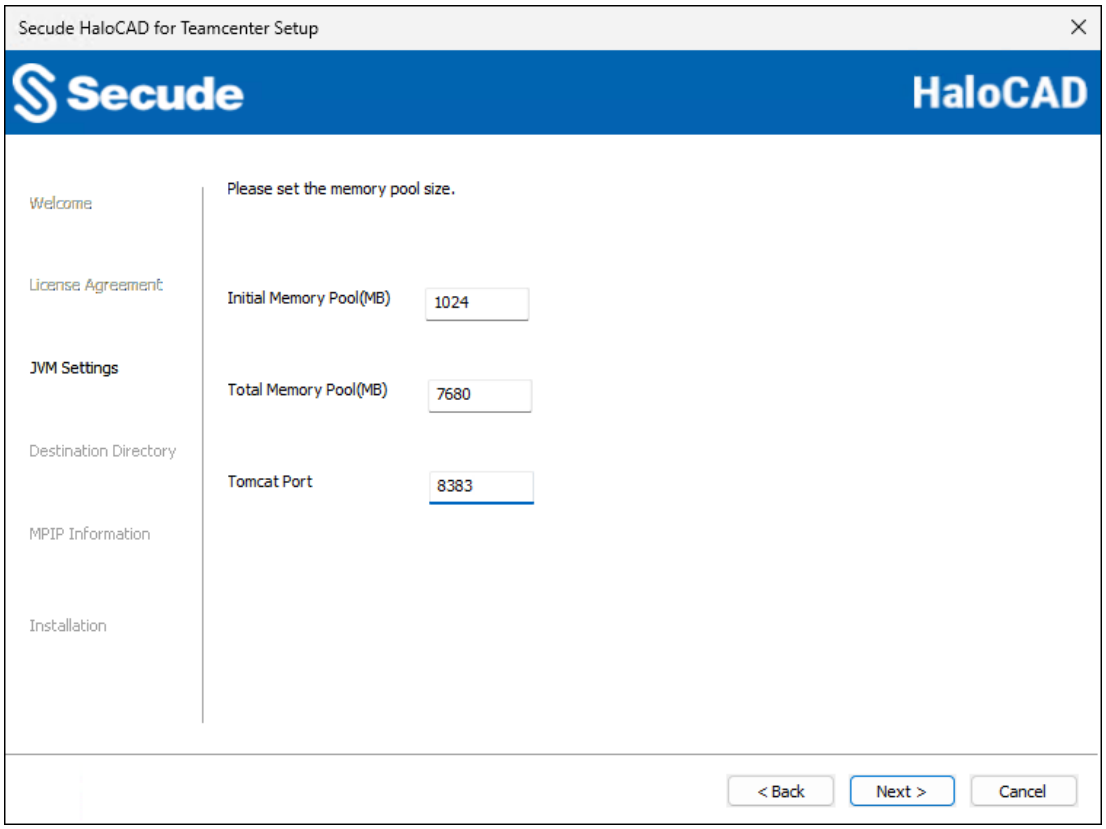
Welcome Dialog

3. Click **Next** to continue.
4. The **License Agreement** dialog appears.



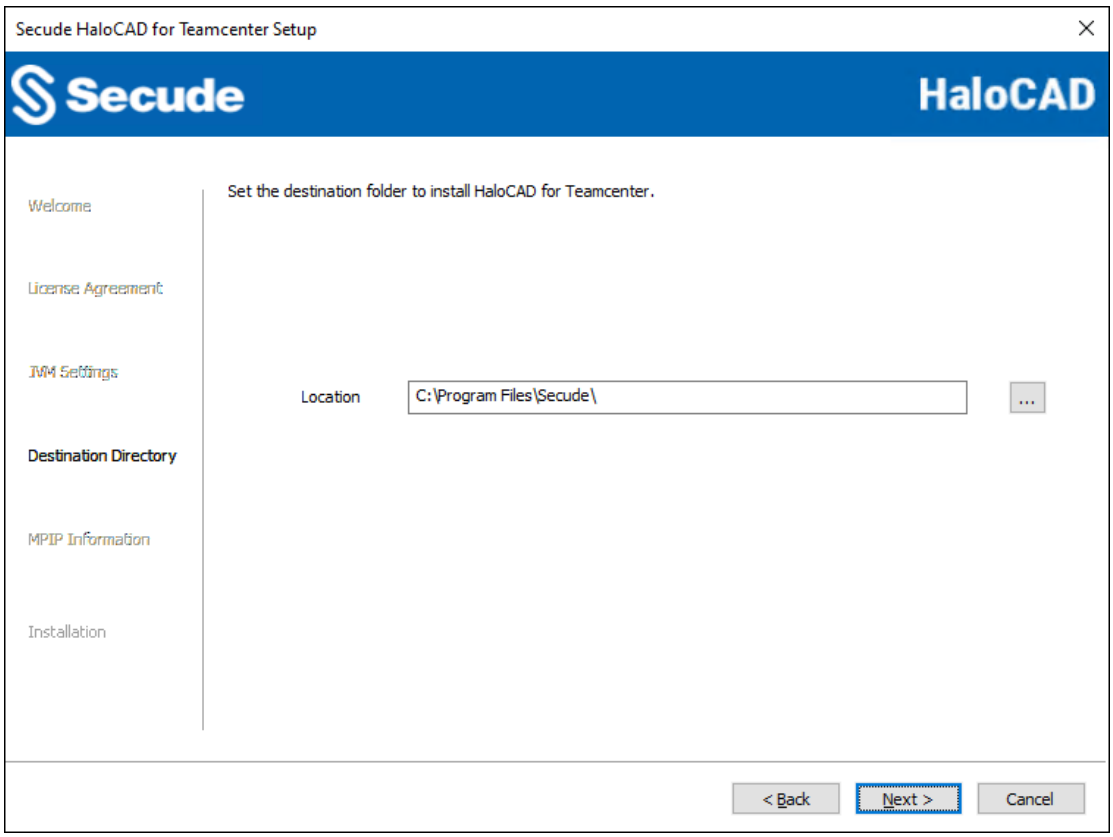
End-User License Agreement Dialog

5. Read the **End-User License Agreement**. If you agree to the terms, select **I accept the terms in the License Agreement**, and then click **Next**.
6. The **JVM Settings** dialog appears.



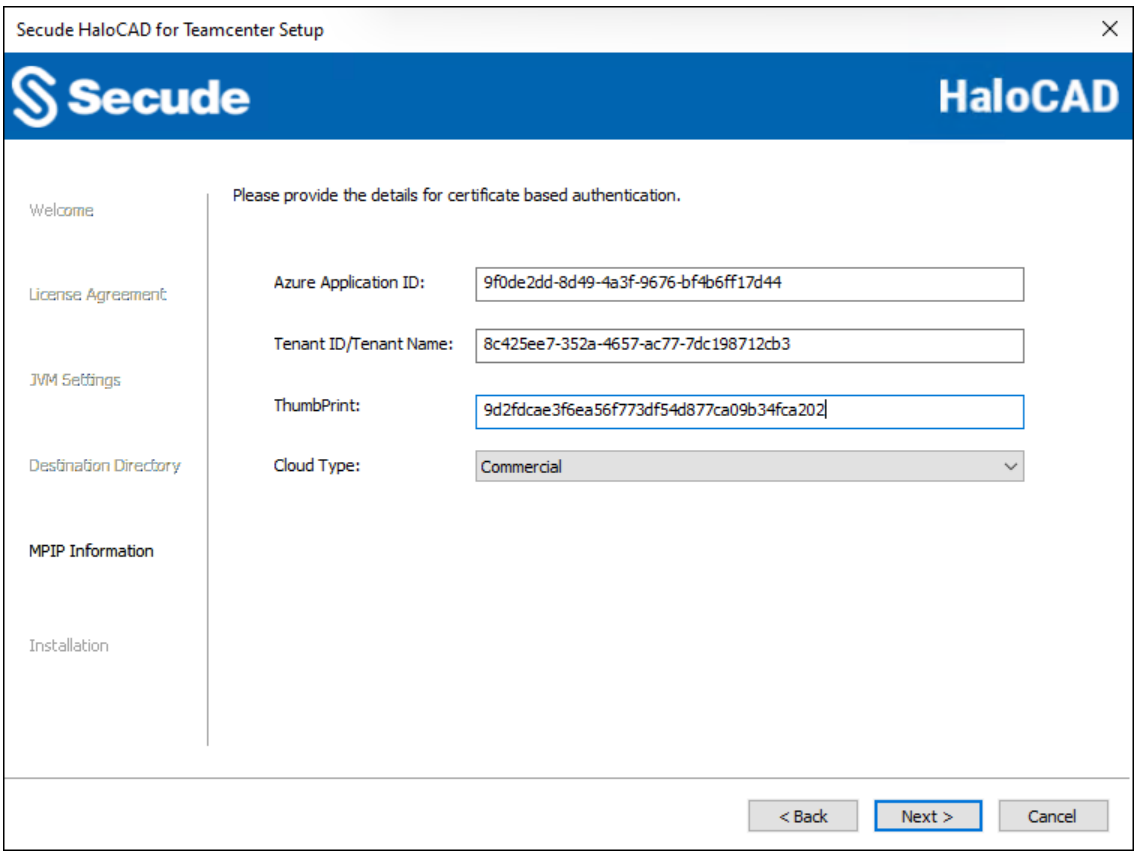
Tomcat pool size configuration dialog

7. Specify the amount of memory to modify the preset values for the **Initial Memory Pool**, **Total Memory Pool**, and **Tomcat Port**. The default port is **8383**; however, you can change the port number. The port value must be greater than **999** and less than or equal to **65535**. Note: Ensure that the **Total Memory Pool** does not exceed three-fourths (3/4) of the system's available RAM.
8. Click **Next**.
9. The **Destination Folder** dialog appears.



Destination folder selection dialog

10. By default, the application files are installed in the following directory: `C:\Program Files\Secude\`. To install HaloCAD for Teamcenter in a different location, click **Browse** and select the required directory.
11. Click **Next.**
12. The **MPIP Information** dialog appears. To avoid errors, ensure that you enter the correct Microsoft Entra ID application details in the installation wizard.



Certificate-based authentication dialog

a. **Azure Application ID**: Enter the Application ID of the registered application in the Microsoft Entra admin center. For example, `9f0de2dd-8d49-4a3f-9676-bf4b6ff17d44`

b. **Tenant ID/Tenant Name**: Enter your Microsoft Entra tenant name (for example, `contoso.onmicrosoft.com`) or its tenant ID (for example, `8c425ee7-352a-4657-ac77-7dc198712cb3`).

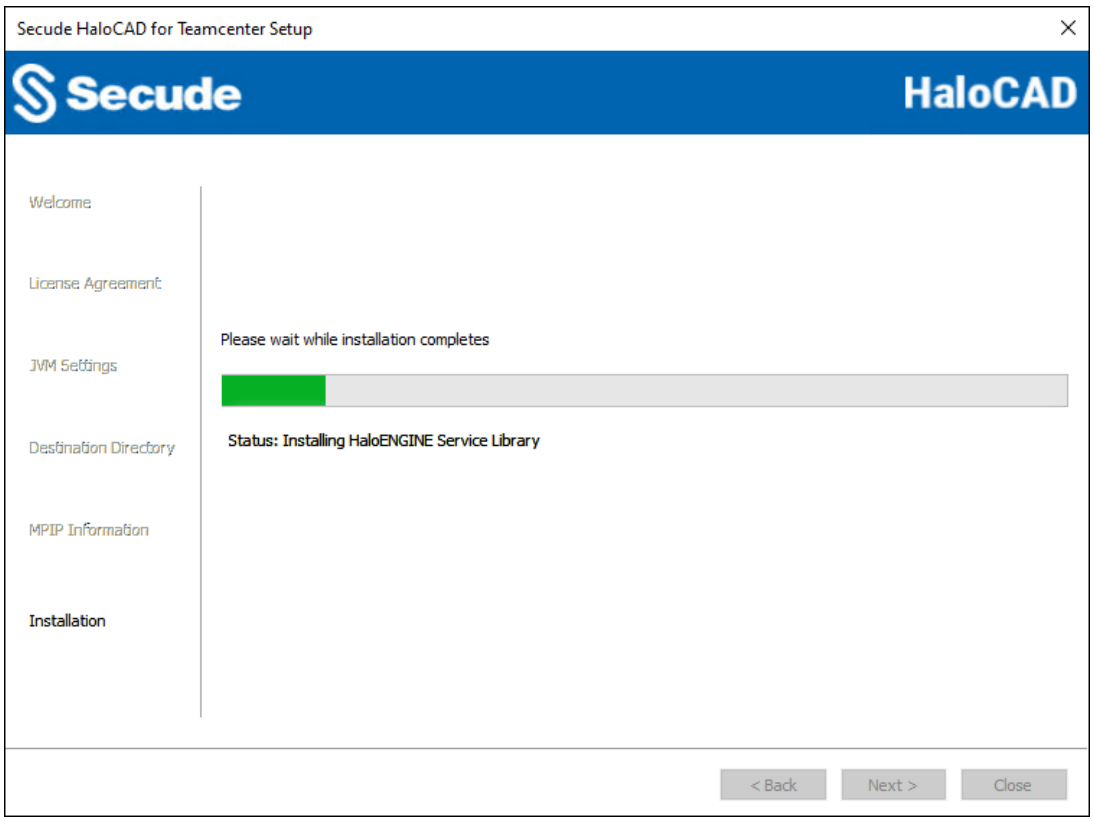
c. **Thumbprint**: Enter the thumbprint of the MPIP authentication certificate installed in the **Local Computer** certificate store. For example, `9d2fdcae3f6ea56f773df54d877ca09b34fca202`.

d. **Cloud Type**: **Commercial** is selected by default. Based on your Azure subscription and configuration, select the required cloud type from the list: Commercial, Custom, Germany, US_DoD, US_GCC, US_GCC_High, US_Sec, US_Nat, or China_01.
   If you select **Custom**, enter the appropriate URLs in the **Protection Cloud URL** (for example, `https://api.aadrm.com`) and **Policy Cloud URL** (for example, `https://dataservice.protection.outlook.com`) fields.

e. To return to a previous step in the installation, click **Back** (optional).

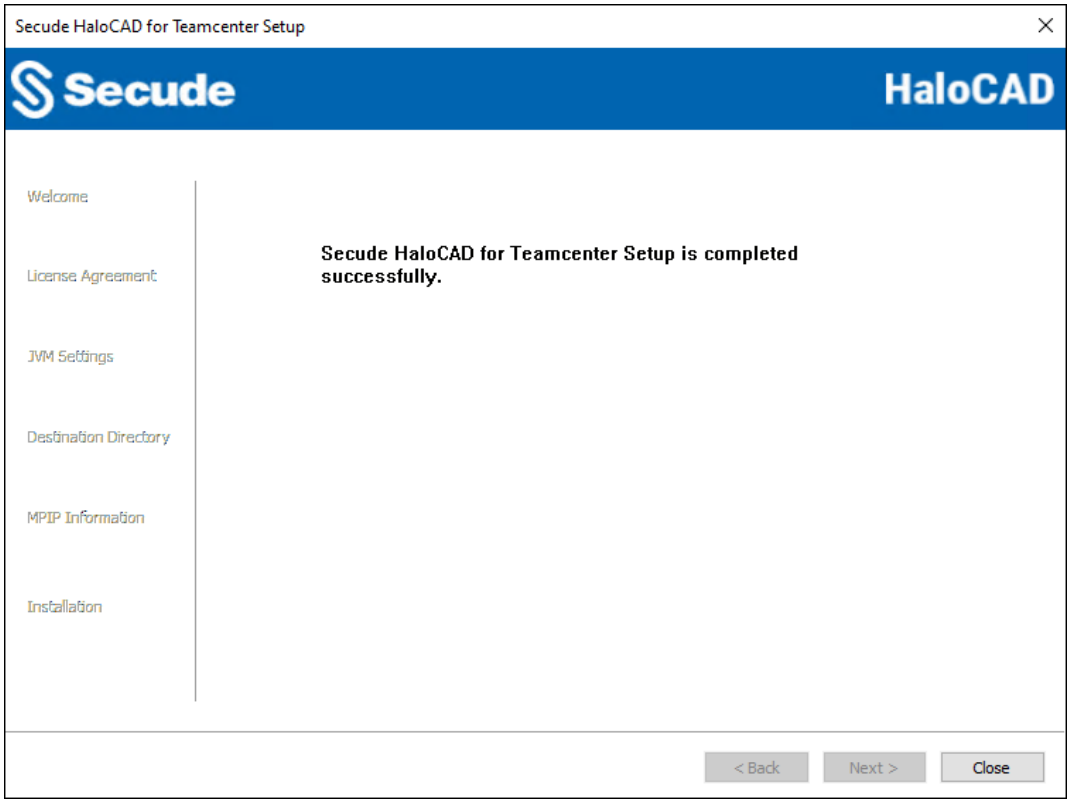
f. Click **Next**.

13. The installation begins, and the progress is displayed in the **Installation** dialog.



Installation dialog

14. When the installation is complete, a confirmation message appears indicating that the HaloCAD for Teamcenter component has been successfully installed.



Installation completed dialog

15. Click **Close** to exit the installation wizard.

3.3.2. Silent Mode

In addition to Graphical Mode, you can install the HaloCAD for Teamcenter component in **Silent Mode**. Silent Mode does not require user interaction or display a user interface. It enables you to install using command-line options.

1. Open the Command Prompt with elevated rights (Run as Administrator).
2. Navigate to the directory that contains the HaloCAD for Teamcenter installer.
3. To view the available **Silent Mode** options, run the following command:

   Type `HaloCAD_Teamcenter_Setup.exe -help`

   Press `Enter`

   Output

   ```
   ...
   HaloCAD_Teamcenter_Setup.exe -install -initmempool <Initial memory pool size in
   MB(s).
   Minimum size is 128 MB> -totalmempool <Total memory pool size in MB(s).
   Maximum size is 3/4 of total RAM size.> -dir <destination_directory> -port
   <range_1_to_65535> -applicationid <application_id> -tenantid <tenant_id> -thumbprint
   <thumb_print> -cloudtype
   <(Commercial|Custom|Germany|US_DoD|US_GCC|US_GCC_HIGH|US_Sec|US_Nat|China_01)> (if
   cloudtype is Custom) <protectioncloudurl> <policycloudurl>
   HaloCAD_Teamcenter_Setup.exe -uninstall
   ```

4. The following command shows how to install and initialize HaloCAD.

   ```
   HaloCAD_Teamcenter_Setup.exe -install -initmempool 1024 -totalmempool 2048 -dir
   "C:\Program Files\Secude" -port 8383 -applicationid "9f0de2dd-8d49-4a3f-9676-
   bf4b6ff17d44" -tenantid "8c425ee7-352a-4657-ac77-7dc198712cb3" -thumbprint
   "961602617275c2ab538cf28bb3648c0c6d97edab" -cloudtype "Commercial"
   ```

5. Press `Enter`.

   Result

   The installation is complete.

Certificate update

If you update or renew the client certificate, restart the HaloENGINE GenNXT Tomcat service for the changes to take effect.

4. Configuring the HaloCAD Proxy

This section describes how to configure HaloCAD and HaloENGINE GenNXT parameters using the GUI and command-line methods. It also explains how to configure the Dataset and TCCS settings.

4.1. Configuration Using Tool (GUI)

Prerequisites:

- Ensure that HaloCAD for Teamcenter is installed before proceeding.
- If the SOA URL uses HTTPS, ensure that the CA certificate is added to the Java trust store.

Follow these steps to configure the settings through the GUI:

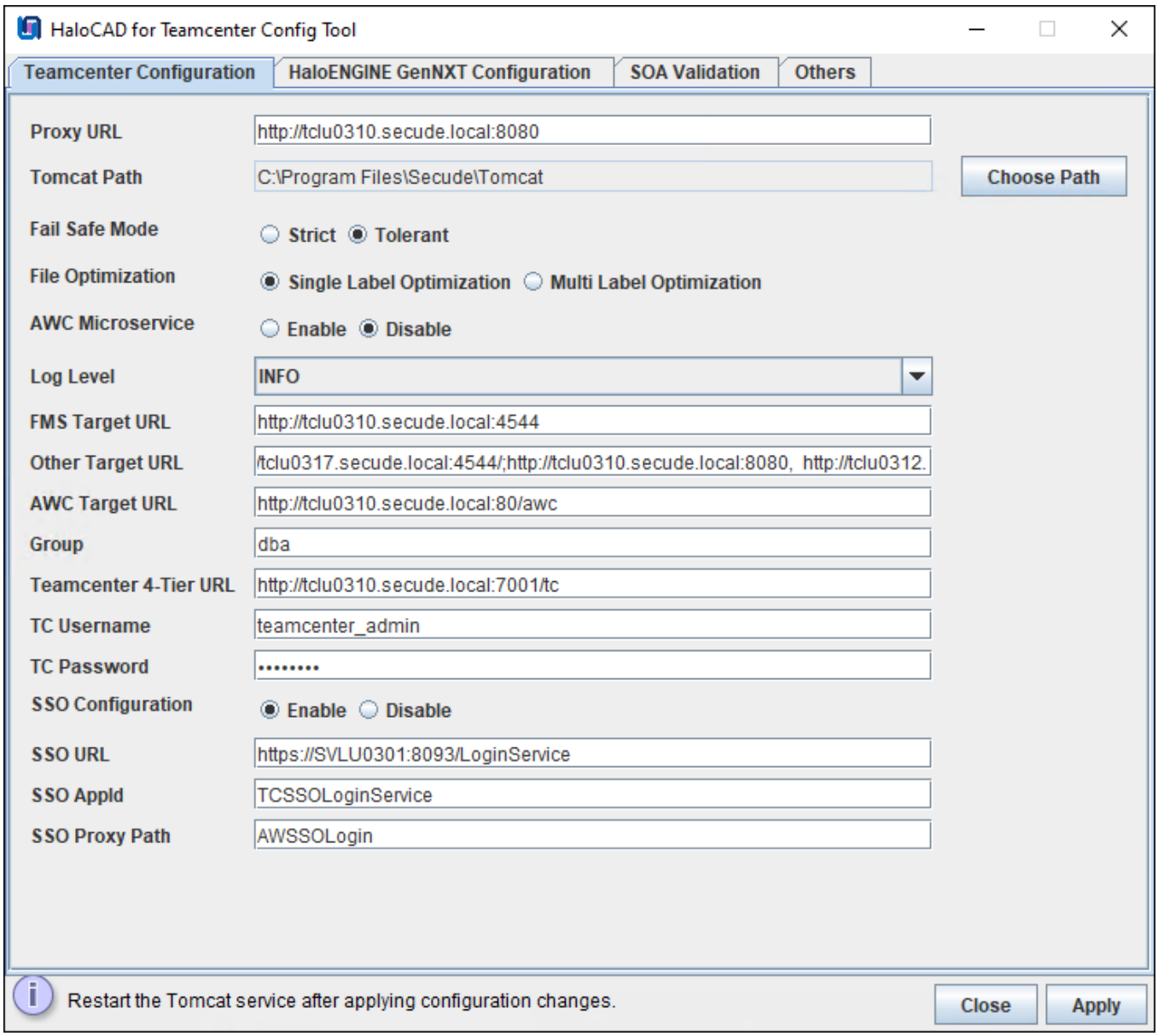
Step 1. Run the HaloCAD Config tool.

1. Navigate to the installation directory. By default, the directory is: `C:\Program Files\Secude\HaloCADTeamcenter\config`.
2. Do one of the following:
   a. Double-click the JAR file `halocad-teamcenter-config-<version>.jar`
   b. Open **Command Prompt** as an administrator, type the following command, and then press **Enter**.
      Syntax: `<pathtojar>java -jar halocad-teamcenter-config-<version>.jar`
      For example: `C:\Program Files\Secude\HaloCADTeamcenter\config>java -jar halocad-teamcenter-config-<version>.jar`

Result: The **HaloCAD for Teamcenter Config Tool** window is displayed.

Step 2. Enter the Teamcenter Configuration Settings.

Select the **Teamcenter Configuration** tab, and then enter the following information.



Teamcenter Configuration tab

1. **Proxy URL**: Enter the URL of the proxy (HaloCAD component) installation. For example, `http://tclu0310.secude.local:8080`
2. **Tomcat Path**: Click **Choose Path** to browse and select the **Tomcat** home directory path. For example, `C:\Program Files\Secude\Tomcat`
3. **Fail-Safe Mode**: The **Fail Safe Mode** controls the system behavior when inconsistencies prevent the specified protection from being applied (for example, conflicting configurations, unreachable server components, or returned error messages). Select one of the following options:
   a. **Strict:** Blocks file uploads and downloads whenever an error occurs.
   b. **Tolerant (default):** Allows file uploads and downloads even when an error occurs.

4. **File Optimization**: Choose one of the following options for file optimization. By default, Single Label Optimization is set.
   a. **Single Label Optimization:** The top-level file label is considered and applied to all dependent files.
   b. **Multi-Label Optimization:** Each file type group label defined in the Classification Engine is considered and applied to the corresponding group during ASM optimization.
5. **AWC Micro Service**: To communicate with Teamcenter via **Microservices**, enable this option.
   AWC 5.x with Microservice:
   a. If you use Microservices for AWC, enable the option **AWC Micro Service** and provide the port number in **AWC Proxy Port**. Please use a different port number for the Proxy URL and AWC Proxy Port.
   b. For Example, if your Proxy URL is 8080, you may use a different port for the AWC Proxy Port, such as 8081.
   c. To access AWC, use `http://hostname:awcproxyport`. For example, `http://svlu0309:8081`

   AWC 4.x without Microservice:
   a. Here, to use AWC without Microservice, disable the **AWC Microservice** option.
   b. To access AWC, use `http://hostname:proxyport/awc`. For example, `http://svlu0309:8080/awc`
6. **Log Level**: Select the required log level.
   a. **INFO (default):** Logs standard application events that indicate the progress of the application.
   b. **ERROR:** Logs error events that prevent the application from functioning correctly.
   c. **DEBUG:** Logs detailed diagnostic information for troubleshooting. The log level is set to "DEBUG" by default. The log rollover period is configured to 24 hours, which means that every 24 hours, a new log file with the file format `haloproxy.<yyyy-MM-dd>.log` is generated.
7. **FMS Target URL**: Enter the URL of the Teamcenter Server where the file download needs to be protected. For more details, please refer to the section "Appendix". For example, `http://tclu0310.secude.local:4544`
8. **Other Target URL**: In case of multiple FSC configurations, enter other URLs as given in the following format `http://<fmstarget url_1>;http://<proxy url_1>,http://<fmstarget url_2>; http://<proxy url_1>`. For more details, please refer to the section "Appendix". Example, `http://tclu0317.secude.local:4544/;http://tclu0310.secude.local:8080, http://tclu0312.secude.local:4544;http://tclu0313.secude.local:8080`

AWC Target URL: Enter AWC's URL.

a. Without Microservice: `http://tclu0310.secude.local:80/awc`

b. With Microservice: `http://tclu0310.secude.local:3000`

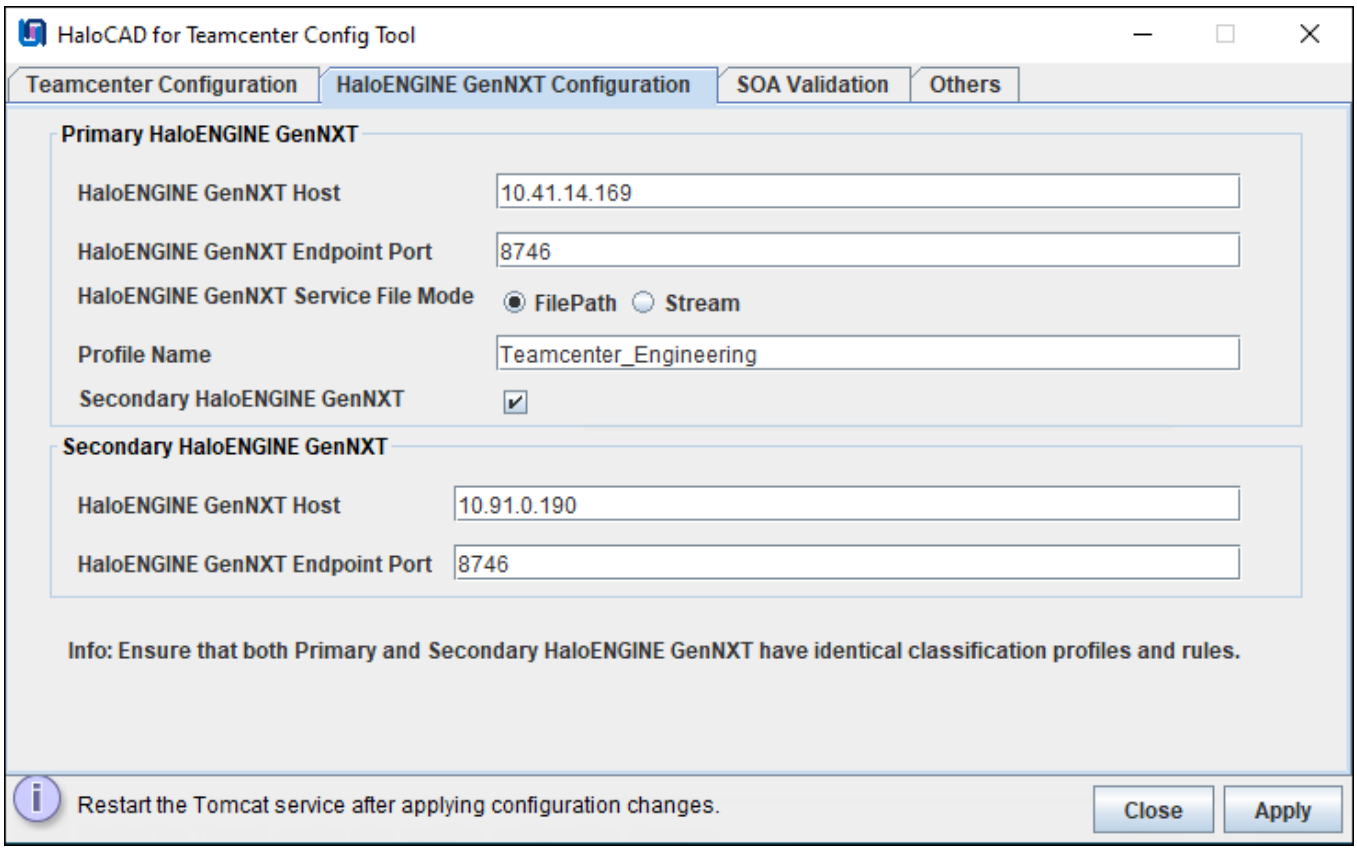
9. **Group**: Enter the name of the group. For example, `dba`.
10. **Teamcenter 4-Tier URL**: Enter your Teamcenter URL. For example, `http://tclu0310.secude.local:80/tc` or `http://tclu0310.secude.local:7001/tc`.
11. **TC Username**: Enter the Teamcenter username. For example, `teamcenter_admin`.
12. **TC Password**: Enter the Teamcenter password.
13. **SSO Configuration:** Select one of the following options for SSO-based SOA authentication:
    a. **SSO URL:** Enter the SSO URL. For example, `https://SVLU0301:8093/LoginService`.
    b. **SSO AppID:** Enter the application ID. For example, `TCSSOLoginService`.
    c. **SSO Proxy Path:** Enter the URL path used to access AWC SSO through the proxy. For example, `AWSSOLogin`.
14. Click **Apply**. If required values are missing, a red tooltip message appears. Enter the missing information and click **Apply** to continue.

Result:

- A confirmation message dialog box appears.
- Click **OK** to close the confirmation dialog box.

Step 3. HaloENGINE GenNXT Configuration

Select the **HaloENGINE GenNXT Configuration** tab, and then enter the following information.



HaloENGINE GenNXT Configuration tab

Primary HaloENGINE GenNXT Configuration

1. **HaloENGINE GenNXT Host**: Enter the IP address or fully qualified domain name (FQDN) of the HaloENGINE GenNXT server. For example, `10.41.14.169`
2. **HaloENGINE GenNXT Endpoint Port**: Enter the endpoint port used to access HaloENGINE GenNXT. For example, `8746`
3. **HaloENGINE GenNXT Service File Mode**: Select the file transmission method.
   a. **FilePath (default):** Stores the file in a local temporary location for the encryption and decryption process. The file path is used for file transfer.
   b. **Stream:** Transfers the file as a sequence of bytes.
4. **Profile Name**: Enter the profile name configured in the Admin Portal. For example, `Teamcenter_Engineering`.
5. **Secondary HaloENGINE GenNXT**: To configure a failover mechanism, select the **Secondary HaloENGINE GenNXT** check box. HaloCAD supports connection failover between two HaloENGINE GenNXT instances. For more information, please refer to the section "Failover Mechanism for HaloENGINE GenNXT in HaloCAD for PLM".

Secondary HaloENGINE GenNXT Configuration

Skip this step if you are not configuring a secondary HaloENGINE GenNXT. This step is required only if you want to use the failover mechanism.

Prerequisite: Ensure that the secondary HaloENGINE GenNXT uses the same configuration profiles and rules as the primary HaloENGINE GenNXT. This ensures that, if the primary HaloENGINE GenNXT becomes unavailable, the secondary HaloENGINE GenNXT can immediately take over and maintain uninterrupted operation.

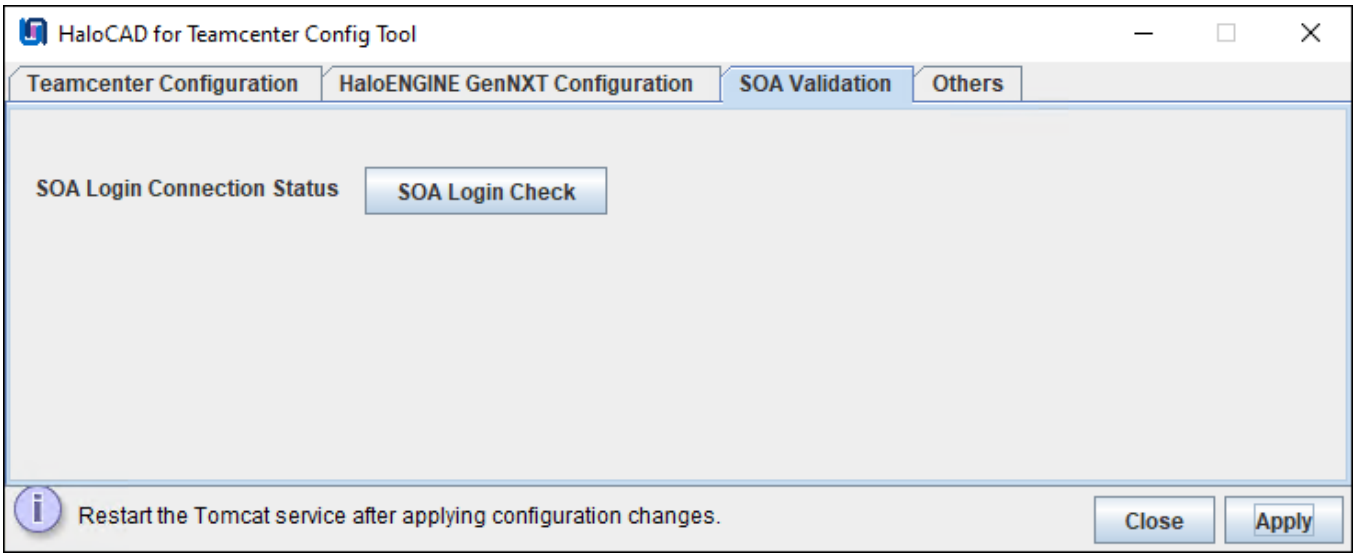
1. **HaloENGINE GenNXT Host**: Enter the IP address or fully qualified domain name (FQDN) of the HaloENGINE GenNXT server. For example, `10.91.0.190`
2. **HaloENGINE GenNXT Endpoint Port**: Enter the endpoint port used to access HaloENGINE GenNXT. For example, `8746`
3. Click **Apply**. If required values are missing, a red tooltip message appears. Enter the missing information and click **Apply** to continue.

Result:

- A confirmation message dialog box appears.
- Click **OK** to close the confirmation dialog box.

Step 4. SOA Validation

Select the **SOA Validation** tab and check the connection status.



SOA Validation tab

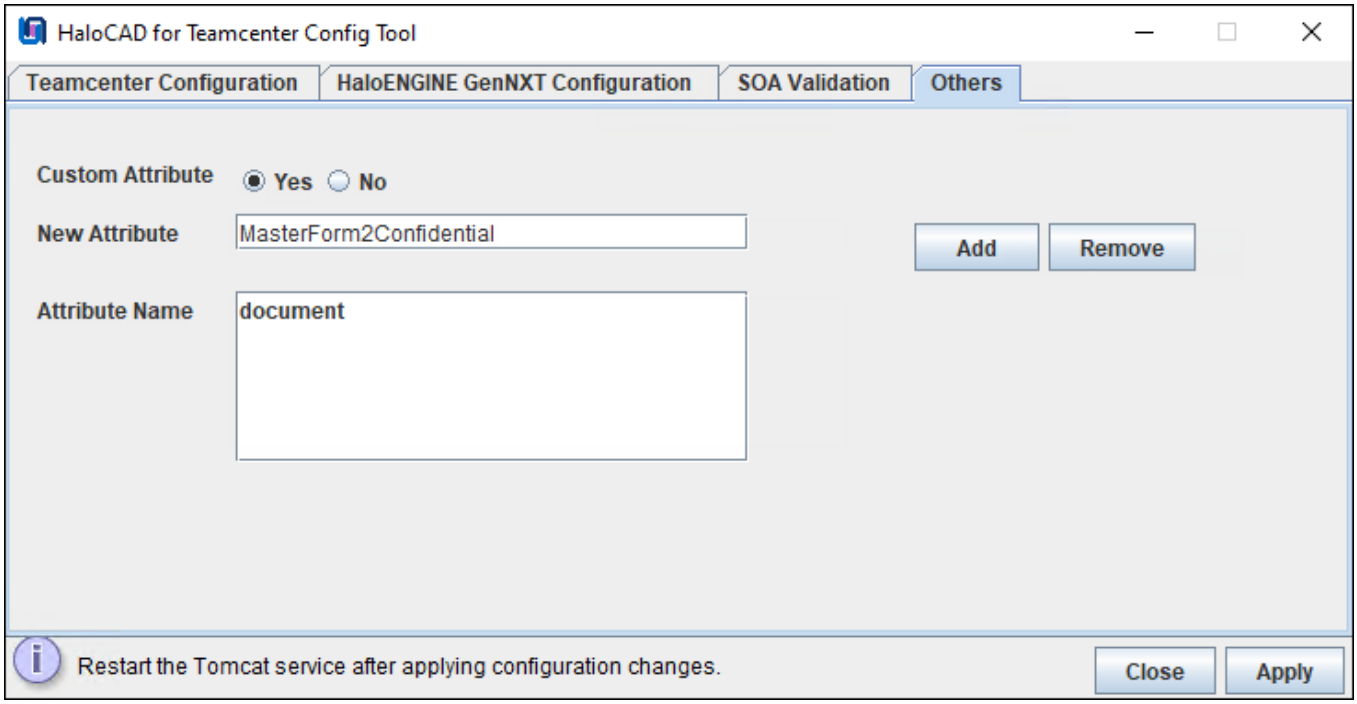
1. Click **SOA Login Check** to confirm the SOA credential configuration.
2. Click **Apply**. If required values are missing, a red tooltip message appears. Enter the required information and click **Apply** to continue.

Result:

- A progress bar indicates that "*Checking SOA Login connection status*" is in progress.
- If the connection is successful, a confirmation message dialog box appears. Click **OK** to close the dialog box.
- If the connection fails, an appropriate warning message appears. Follow the on-screen instructions and try again.

Step 5. Other Configuration Settings

Select the **Others** tab, and then enter the following information.



Others tab

1. **Custom Attribute**
   a. If you do not want to use custom attributes, click **Apply**, and then close the Configuration Tool.
   b. If you want to use custom attributes, select **Yes** for **Custom Attribute**, and then enter the following information
2. **New Attribute**: Enter the name of an attribute and then click **Add**. Enter the exact custom property name that was provided during the custom property configuration. For example, **document** is added as a new attribute.
3. The attribute is added to the **Attribute Name** list.
4. Click **Apply**. If required values are missing, a red tooltip message appears. Enter the required information and click **Apply** to continue.

Result:

- Click **OK** to close the dialog box.
- To remove an attribute, select the attribute from the list, click **Remove**, and then click **Apply** to save the configuration.

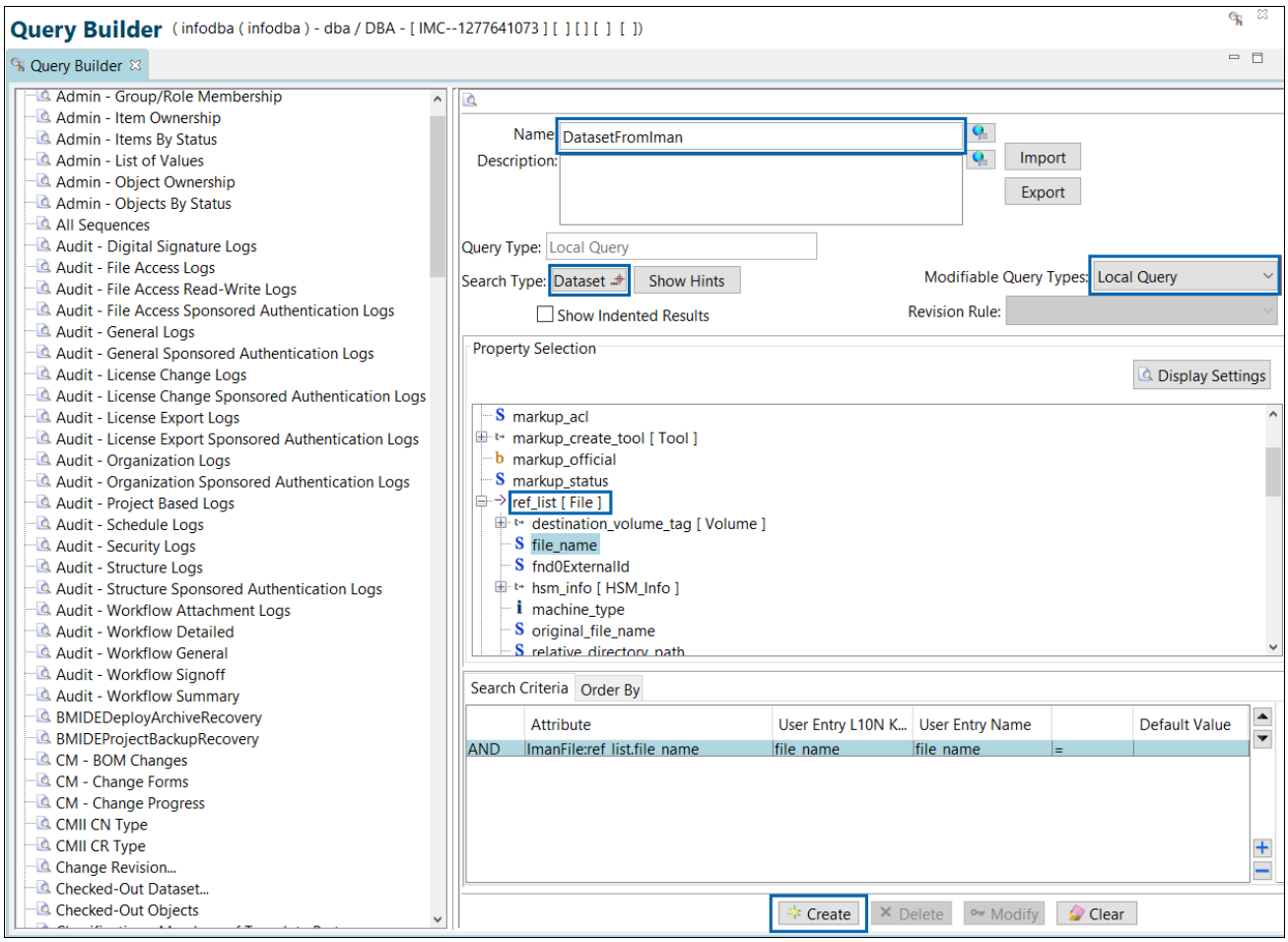
Step 6. Restart the Tomcat Service.

Restart the HaloENGINE GenNXT Tomcat Service after making any configuration changes.

4.2. Dataset Configuration - DatasetFromIman

The following steps are to be carried out by a user with DBA privileges on the Teamcenter server. This example uses the **Infodba** account.

1. Click the **Query Builder** icon in the navigation pane.
2. Click on **Saved Queries**. A new query page appears, where you must enter the following details.
   a. Enter **DatasetFromIman** in the **Name** text box.
   b. In **Search Type**, select **Dataset** from the list.
   c. In **Modifiable Query Types**, select **Local Query** from the list.
   d. Under the **Properties Selection** section, double-click on the property **ref_list**. The **Business Type Selection** dialog appears.
   e. Search for **ImanFile** and double-click it. It is added to the property.
   f. The property name appears as **ref_list [File]**.
   g. Under **ref_list [File]**, double-click on **file_name**. You can see the attributes being displayed in the **Search Criteria** section.



Adding a new query - DatasetFromIman

3. Click **Create**.

Result: The DatasetFromIman query is created and appears in the Query Builder list.

4.3. TCCS Configuration

The following procedure explains how to change the File Management System (FMS) master file and FMS client cache (FCC) file in the Teamcenter client communication system (TCCS). We recommend that you make a backup of the current two XML files.

1. **Step 1**. Modify the FMS master file.
   a. Navigate to: `<Installed_Path>\Siemens\Teamcenter12\fsc\fmsmaster_FSC_<ComputerName>_Teamcenter.xml>`.
   For example, `C:\Program Files\Siemens\Teamceter12\fsc\fmsmaster_FSC_tclu0310_Teamcenter.xml`
   b. Open the XML file with administrator privileges and add the following line after `<fscgroup id="mygroup"> tag`, along with the port number as shown in the example below:
   Line format:`<loadbalancer id="ReverseProxy" address="<host>:<port>/tc/fms/" />`
   For Example, `<loadbalancer id="ReverseProxy" address="http://tclu0310.Secude.local:8080/tc/fms/" />`
   c. Save the file.
2. **Step 2**. Modify the FCC file.
   a. Navigate to: `<Installed_Path>\Siemens\Teamcenter12\tccs\fcc.xml>`.
   For example, `C:\Program Files\Siemens\Teamceter12\tccs\fcc.xml`
   b. Open the XML file with administrator privileges and add the following line along with the port number as shown in the example below:
   Line format: `<parentfsc address="http://<host>:<port>/tc/fms" priority="0" transport="lan"/> <assignment address="parentfsc address">`
   For Example, `<parentfsc address=http://tclu0310.Secude.local:8080/tc/fms priority="0" transport="lan"/> <assignment mode = "parentfsc">`
   c. Save the file.
3. **Step 3**. Restart the Siemens service.
   a. Restart the Teamcenter FSC Service (**FSC_<serverhostname>_Teamcenter**) via the **Windows Services Manager**.
   b. Please note that whenever XML files are modified, the FSC service should be restarted.

4.4. Configuration Using the Command Line

This section describes an alternative method for configuring HaloCAD for Teamcenter and HaloENGINE GenNXT parameters by using the command line.

Prerequisite: Ensure that HaloCAD for Teamcenter is installed.

Follow the command-line instructions. A sample is provided below:

1. Open a command prompt, navigate to the destination folder, then type `java -jar halocad-teamcenter-config-<version>.jar -shell` and press **Enter**.

```
C:\Program Files\Secude\HaloCADTeamcenter\config>java -jar halocad-teamcenter-
 config-<version>.jar -shell
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
HaloCAD for Teamcenter
Config Path: C:\Program Files\Secude\HaloCADTeamcenter\config
1. Teamcenter Configuration
2. Primary HaloENGINE GenNXT Configuration
3. SOA Validation
4. Others
0. Exit
Note: If an invalid value is entered, the default value will be applied.
Please choose an option:1
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
Teamcenter Configuration:
--------------------------------------------------------------------------------
Enter the Proxy URL:
http://tclu0310.secude.local:8080

Enter the Tomcat path:
C:\Program Files\Secude\Tomcat

Fail Safe Mode: (Default:Tolerant)
1. Tolerant
2. Strict

Please choose an option:
1

File Optimization: (Default:Single Label Optimization)
1. Multi Label Optimization
2. Single Label Optimization
```

```
Please choose an option:1

AWC Microservice: (Default:AWC Disable)
1. AWC Enable
2. AWC Disable

Please choose an option:
2

Log Level: (Default:INFO)
1. INFO
2. DEBUG
3. ERROR

Please choose an option:
2

Enter the FMS Target URL:
http://tclu0310.secude.local:4544

Enter the AWC Target URL:
http://tclu0310.secude.local:80/awc

Enter the Group Name:
dba

Enter the Teamcenter 4-Tier URL:
http://tclu0310.secude.local:80/tc

Enter the TC Username:
teamcenter_admin

Enter the TC Password:


SSO Configuration: (Default:SSO Disable)
1. SSO Enable
2. SSO Disable

Please choose an option:
2
--------------------------------------------------------------------------------
Teamcenter Configuration:
```

```
Proxy URL                       :http://tclu0310.secude.local:8080
Tomcat Path                     :C:\Program Files\Secude\Tomcat
Fail Safe Mode                  :Tolerant
File Optimization               :Multi Label Optimization
AWC Microservice                :AWC Disable
Log Level                       :DEBUG
FMS Target URL                  :http://tclu0310.secude.local:4544
AWC Target URL                  :http://tclu0310.secude.local:80/awc
Group Name                      :dba
Teamcenter 4-Tier URL           :http://tclu0310.secude.local:80/tc
TC UserName                     :teamcenter_admin
SSO Configuration               :SSO Disable

1. Modify all configuration
2. Modify the particular configuration
3. Back to main menu
0. Exit

Please choose an option:
3
--------------------------------------------------------------------------------
1. Teamcenter Configuration
2. Primary HaloENGINE GenNXT Configuration
3. SOA Validation
4. Others
0. Exit
Note: If an invalid value is entered, the default value will be applied.
Please choose an option:2

--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
Primary HaloENGINE GenNXT Configuration:
--------------------------------------------------------------------------------

Enter the Primary HaloENGINE GenNXT Host:
10.41.14.169

Enter the Primary HaloENGINE GenNXT Endpoint Port: (Default:8746)
8746

Enter the Profile Name:
Teamcenter_Engineering

Secondary HaloENGINE GenNXT: (Default:Disable Secondary HaloENGINE GenNXT)
```

```
1. Disable Secondary HaloENGINE GenNXT
2. Enable Secondary HaloENGINE GenNXT

Please choose an option:
1
Saved Successfully.

--------------------------------------------------------------------------------
Primary HaloENGINE GenNXT Configuration:

Primary HaloENGINE GenNXT Host          :10.41.14.169
Primary HaloENGINE GenNXT Endpoint Port :8746
HaloENGINE GenNXT Service File Mode     :File Path
Profile Name                            :Teamcenter_Engineering
Secondary HaloENGINE GenNXT             :Disable Secondary HaloENGINE GenNXT

1. Modify all configuration
2. Modify the particular configuration
3. Back to main menu
0. Exit

Please choose an option:
3
--------------------------------------------------------------------------------
1. Teamcenter Configuration
2. Primary HaloENGINE GenNXT Configuration
3. SOA Validation
4. Others
0. Exit
Note: If an invalid value is entered, the default value will be applied.
Please choose an option:3
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
SOA Login connection status:
--------------------------------------------------------------------------------
1. Check SOA connection status
0. Exit

Please choose a valid option:1
Checking Teamcenter Login status, Please wait.
INFO: ================ Normal SOA Login ================
Oct 07, 2026 11:38:35 PM com.secude.halocad.tcproxy.clientx.AppXSession login
INFO: TC--> Login successful
SOA login is successful
```

```
1. Check Status again
2. Back to main menu
0. Exit
Please choose an option:
2
--------------------------------------------------------------------------------
1. Teamcenter Configuration
2. Primary HaloENGINE GenNXT Configuration
3. SOA Validation
4. Others
0. Exit
Note: If an invalid value is entered, the default value will be applied.
Please choose an option:4
--------------------------------------------------------------------------------
Others...
Custom Attribute                :No
1. Custom Attribute
2. Back to main menu
0. Exit
Please choose an option:
1
--------------------------------------------------------------------------------
Custom Attribute: (Default:No)
1. No
2. Yes
Please choose an option:
1
Custom Attribute Disabled Successfully.
--------------------------------------------------------------------------------
Others...
Custom Attribute                :No

1. Custom Attribute
2. Back to main menu
0. Exit
```

2. Click **Close** to close the command prompt.
3. Restart the Tomcat Service. Note: Whenever changes are made, restart the HaloENGINE GenNXT Tomcat service.

5. Configuring the Tomcat Service

During installation, the Microsoft Entra ID application details initialize the **HaloENGINE GenNXT Tomcat service**. After successful authentication, the sensitivity labels are retrieved automatically.

Default locations of log files

Name	Default Path
HaloCAD log	`C:\Program Files\Secude\Tomcat\logs\haloproxy.log`
Configuration tool	`C:\Program Files\Secude\HaloCADTeamcenter\HaloENGINEService\lib\heslibconfig.exe`
MIP logs	`C:\Program Files\Secude\HaloCADTeamcenter\HaloENGINEService\logs\mip_cache_storage\mip\logs`

Default locations

Use `heslibconfig.exe` to update MPIP-related settings, such as the Application ID, Tenant ID, thumbprint, and cloud type.

To update your Microsoft Entra ID application details, follow the procedure below.

1. Open the Command Prompt with elevated rights (Run as Administrator).
2. Navigate to the directory where `heslibconfig.exe` is located.
3. To view the list of available options in silent mode, enter the following command:

   Type `heslibconfig.exe -help`

   Press `Enter`

   Output

   ```
   Usage:
   heslibconfig.exe -testmip
   heslibconfig.exe -update -applicationid <application_id> -tenantid <tenant_id> -thumbprint <thumb_print> -cloudtype <(Commercial|Custom|Germany|US_DoD|US_GCC|US_GCC_HIGH|US_Sec|US_Nat|China_01) (if cloudtype is Custom) <protectioncloudurl> <policycloudurl>
   heslibconfig.exe -testprotection <label_id>
   ```
4. To display the labels, enter the following command:

   `heslibconfig.exe -testmip`

   MPIP initializes, and the labels are fetched.

5. To update the JSON file, enter the following command:
   `heslibconfig.exe -update -applicationid 9f0de2dd-8d49-4a3f-9676-bf4b6ff17d44 -tenantid 8c425ee7-352a-4657-ac77-7dc198712cb3 -thumbprint 961602617275c2ab538cf28bb3648c0c6d97edab -cloudtype Custom https://api.aadrm.com https://dataservice.protection.outlook.com`
   A confirmation message appears stating that the configuration JSON file location has been successfully updated to `...\config\HaloENGINESVC.json`.
6. To verify that protection is successful, enter the following command:
   `heslibconfig.exe -testprotection ttf1473d-74f4-47ca-9843-e735f94fa797`
   MPIP initializes, and the sample file `testfile.txt` is protected with the label ID.

Configuration change in JSON File

After installation, navigate to the configuration folder`...\HaloENGINEService\config`, and you will find a JSON file that contains the HaloENGINE GenNXT Tomcat Service configuration properties. Note: From the list of default parameters, only the parameters listed below should be modified, and only when necessary. All other parameters must remain at their default values to ensure proper system functionality and stability.

Name	Description
block_pii	Enable or disable the visibility of Personally Identifiable Information (PII) in the MIP SDK logs. • false—PII will be visible in clear text in the MIP SDK logs. • true—PII will be masked with asterisks in the MIP SDK logs. This helps to protect the PII's confidentiality.
cachetype	MPIP cache storage type used by the service. • In Memory—0, maintains the storage cache in memory in the application. • On Disk—1 (default storage type), stores the database (SQLite3) on disk in the directory provided in the settings object. The database is stored in plaintext. • On Disk Encrypted—2, stores the database (SQLite3) on disk in the directory provided in the settings object. The database is encrypted using OS-specific APIs.

Name	Description
cacheuserlicense	• 0—false, End User License (EUL) will NOT be stored in the MPIP cache storage. • 1—true (default value), End User License (EUL) will be stored in the MPIP cache storage
databoundary	Audit and telemetry events are sent to the nearest collector, where these events are stored and processed.
enabledke	Double Key Encryption • 0 (default value)—Disables the DKE functionality in the HaloENGINE GenNXT Tomcat Service. • 1 (On)—Enables the DKE functionality in the HaloENGINE GenNXT Tomcat Service. Please be aware that DKE labels are only visible when DKE functionality is enabled.
enablefiletracking	To register a protected file to track and revoke. • 0 (default value)—the protected file will not be registered for file tracking and access revocation. • 1—The protected file will be registered for file tracking and access revocation
enableminimaltelemetry	To transmit diagnostic information to Microsoft. • 0 (default value)—all diagnostic events are transmitted. • 1—Minimum diagnostic events are transmitted.
log_level	The available log levels are ERROR, WARNING, INFO, and DEBUG.
log_purge	It indicates removing files older than a defined time frame. By default, the log files older than 7 days will be deleted.
streambuffersize	It is a buffer size used for memory-based encryption with the MIP SDK. When the allotted buffer size is exceeded, an additional memory of stream buffer size is allocated, and this process is repeated until the encryption/decryption operation is completed. The default setting is 10MB.

Name	Description
templatefile_purge	Defines the purge time of template files that are generated for every CAD assembly file (compound file) download. The default value set is one hour. For example, when a file is downloaded at 15:25 hours, the HaloENGINE GenNXT Tomcat Service creates a template file in the tmp\GUID folder (which can be located in the HaloENGINE GenNXT Tomcat Service user's profile folder). In the background, it examines and deletes files that have reached the configured time, i.e., after 16:25 hours. Note: This is only applicable in the event of CAD assembly file labeling.

HaloENGINE GenNXT Tomcat service configuration

5.1. WinHTTP Proxy Settings

To allow MIP SDK to use the proxy settings set up in your environment, follow the steps below:

Determine whether the proxy server has been properly set up by running the following command.

```
C:\Windows\system32>netsh winhttp show proxy

Current WinHTTP proxy settings:

Direct access (no proxy server).
```

If the response to the command is as shown above, it indicates that the proxy server has not been configured in the registry for WinHTTP.

To configure the proxy server for WinHTTP, use the following command:

Syntax: `C:\Windows\system32>netsh winhttp set proxy <proxyservername>:<portnumber>`

Example: `C:\Windows\system32>netsh winhttp set proxy 190.160.166.191:8080`

In this case, the proxy server has been set up with `190.160.166.191:8080`. Once this command is executed successfully, the registry is updated with the proxy server URL, and the HaloENGINE GenNXT Tomcat Service ensures that the configured proxy settings are applied.

6. Testing the Proxy Configuration

When you have completed your proxy configuration as described in the previous sections, you need to verify that it works properly by performing the following steps.

6.1. Verify FMS Proxy Configuration

To verify the FMS configuration, follow the instructions below:

1. Go to `<installed_path>\Teamcenter12\tccs\bin`, and execute **CMD** with administrator privileges.
2. Type `fccstat.exe -stop` and press **Enter**. You will receive a confirmation message as "– *fccstat -stop: FCC Stopped.*" This confirms that the server has stopped.
3. Type `fccstat.exe -status` and press **Enter**. You will receive a confirmation message "– *fccstat -status: FCC Offline.*" This confirms that the server went offline.
4. Now, type `fccstat.exe -start` and press **Enter**. You will receive a confirmation message "– *fccstat -start: FCC Started.*" This confirms that the server has started successfully.
5. Type `fccstat.exe -status` and press **Enter**. You will receive a confirmation message "– *fccstat -status: FCC Status... with configured Haloproxy port number.* This confirms that the server is connected to the client. If you have entered the "**Other Target URL**" field, then that URL must be updated along with the proxy in the `fccstat` command.

Result:

```
C:\Users\Teamcenter>cd %fms_home%
C:\Program Files\Siemens\Teamcenter12\tccs>cd bin
C:\Program Files\Siemens\Teamcenter12\tccs\bin>fccstat.exe -stop
fccstat -stop:
FCC Stopped.
C:\Program Files\Siemens\Teamcenter12\tccs\bin>fccstat.exe -status
fccstat -status: FCC Offline.
C:\Program Files\Siemens\Teamcenter12\tccs\bin>fccstat.exe -start
fccstat -start:
FCC Started.
C:\Program Files\Siemens\Teamcenter12\tccs\bin>fccstat.exe -start
fccstat -status:
Cache:
segment: 1 files, 360448 bytes, 0 hits, 0 misses.
read: 0 files, 0 bytes, 0 hits, 0 misses.
write: 0 files, 0 bytes.
Clients:
1 Client connections established.
3 Client request messages processed.
```

```
    2 Client response messages processed.
    0 Client status messages processed.
    0 Client error messages processed.
    Background:
    0 background file download requests received.
    Servers:
    0 segments downloaded.
    0 files downloaded.
    0 files uploaded.
    <site=?>
    0: Assigned FSC 'http://tclu0310.Secude.local:8080/tc/fms/-
     1824758811/mygroup/FSC_tclu0310_Teamcenter_3' is currently active.
```

6. If you do not receive the confirmation message, then you need to review the settings.

6.2. Verify AWC Proxy Configuration

1. Open the AWC link in a browser:
   a. Without Microservice: `http://localhost:<AWC_Port>/awc`
   b. With Microservice: `http://localhost:<AWC_Port>`
2. The AWC login page is displayed.
3. Sign in and verify that the Active Workspace loads successfully.
4. Successful access confirms that AWC is reachable through Haloproxy.

Next Steps

HaloCAD has been set up in your environment and is ready to protect file downloads. For information about product usage and administration, refer to the Operations Manual.

7. Updating the HaloCAD Configuration

You can update the HaloCAD configuration at any time by using the HaloCAD Configuration Tool.

8. Troubleshooting

This chapter helps you resolve common issues with the HaloCAD solution.

Timeout Error in Haloproxy

Symptoms

The following error message is logged.

```
INFO - Request Object--> 000846__ugp_5gt06yo91w79s.prt
INFO - Request Object--> listda_exc_kwx04mk93neia.xlsx
ERROR - java.lang.InterruptedException
ERROR - java.lang.InterruptedException
```

Background

Restarted Tomcat Service

Probable Cause

The most likely cause is to restart the Tomcat Service in the middle of the SOA service operation. The Tomcat service was restarted while an SOA operation was in progress. As a result, the request was interrupted, and the operation timed out.

Workaround

Restart Tomcat again and please note not to stop the service while SOA is in operation.

9. Appendix

This section provides supplemental information.

9.1. Supported FMS Configurations

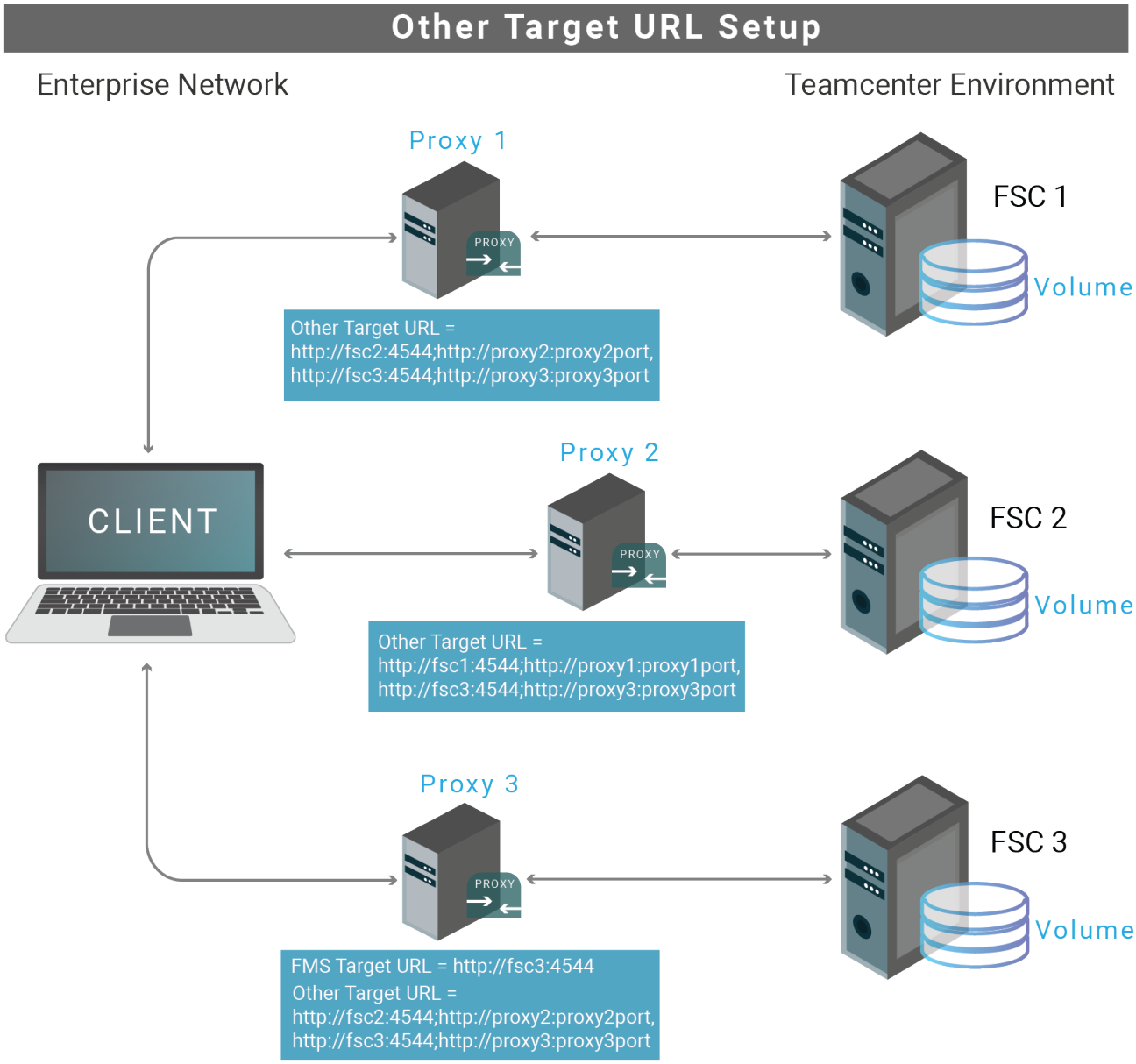
Teamcenter supports various FMS configurations based on the volume of files to be stored, how often files are accessed by clients, and client geographical location (remote).

The following FMS configurations are supported:

1. **Single FSC**
   a. **With single volume** – Typically for simple deployment. Teamcenter provides a single FSC that mounts a single volume. In this case, enter the URL in the "FMS Target URL".
   b. **With multiple volumes** – A standard small or medium deployment with a large volume of file storage. In this case, each volume has an entry under this FSC. Here, enter the URL in the "FMS Target URL" field.
   c. A sample of the FMS master file is shown below for illustration purposes:

```
<fscgroup id="mygroup">
<loadbalancer id="ReverseProxy" address="http://SAMPLE.local:8080/tc/fms" />
<fsc id="FSC_SAMPLE_Teamcenter_3" address="http://SAMPLE.local:4544"
ismaster="true">
<volume id="9c1cfc281ec644eabec6" enterpriseid="-1234567890" root="C:\Program
Files\Siemens\volume" priority="0" />
<transientvolume id="v6ca776c74e437d98ef662ecb5751tt" enterpriseid="-1234567890"
root="C:\\Temp\\transientVolume_Teamcenter" />
</fsc>
```

2. **Multiple FSCs with Multiple Volumes** – Numerous files are accessed simultaneously by the clients from more than one FSC or a single file from any one of the configured FSC. For instance, in the below case, a client is configured to connect with more than one FSC. Therefore, you must specify the details in the Other Target URL field.



Other Target URL Setup

A sample of the FMS master file is shown below for illustration purposes:

```
<fscgroup id="mygroup">
<loadbalancer id="ReverseProxy" address="http://PUN-FMS:8080/tc/fms"/>
<fsc id="PUN-FMS_usprd01" address="http://PUN-FMS:4544" ismaster="true">
<volume id="123d0000000f8c9bd0d7" enterpriseid="-1234567890"
 root="E:\Siemens\usprd01_vols\dba_vol1" priority="0" />
<volume id="456a000001388c9bd0d7" enterpriseid="-1234567890"
 root="E:\Siemens\usprd01_vols\lyn_vol1" priority="0" />
<volume id="7898001339268c9bd0d7" enterpriseid="-1234567890"
 root="F:\Siemens\usprd01_vols\dba_vol2" priority="0" />
<volume id="0123001339268c9bd0d7" enterpriseid="-1234567890"
 root="F:\Siemens\usprd01_vols\lyn_vol2" priority="0" />
```

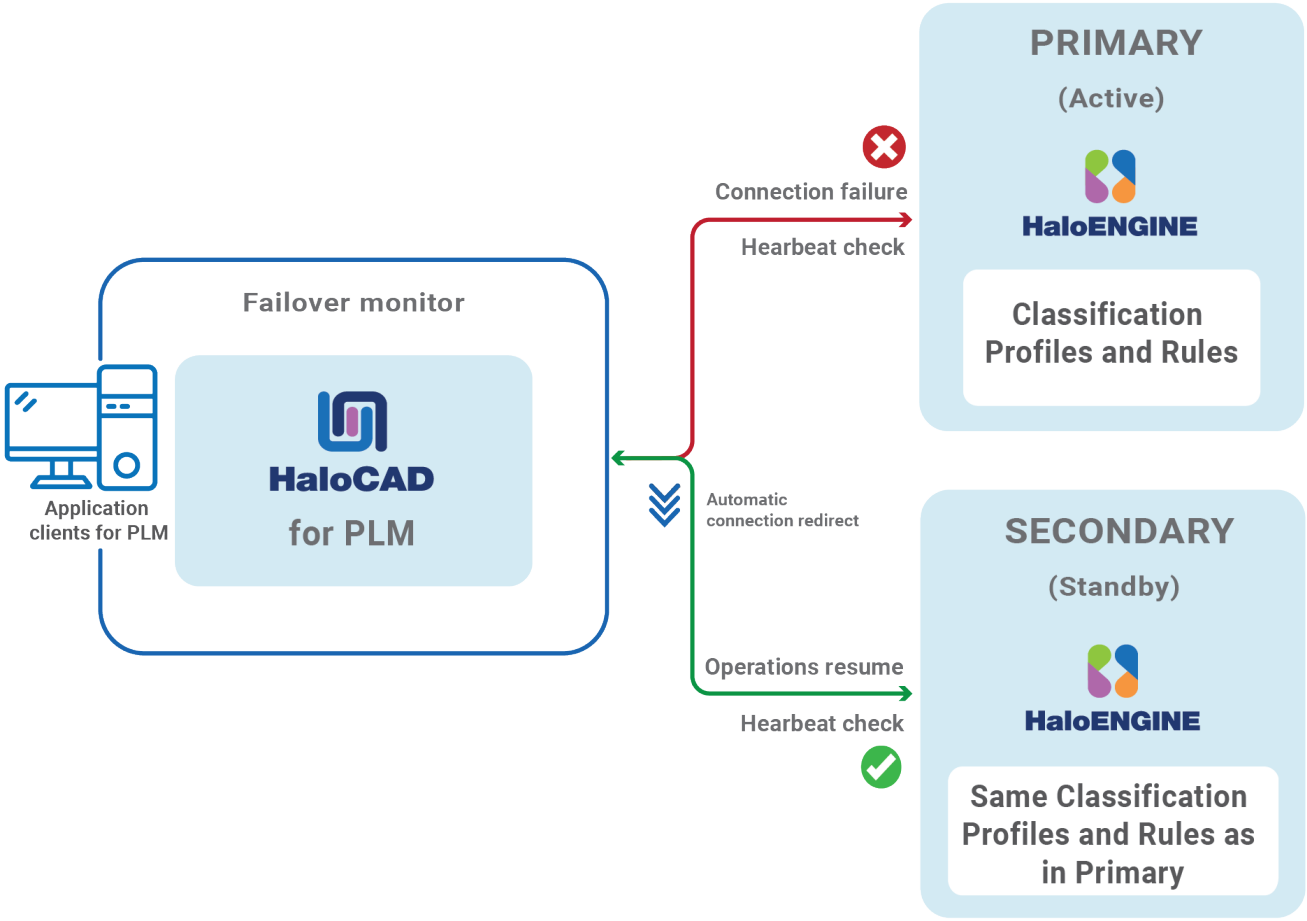
```
<transientvolume id="7f16bd0578697f1eb1bbb4b5020aadef" enterpriseid="-1234567890"
 root="D:\\Temp\\transientVolume_usprd01" priority="0" />
</fsc>
<fsc id="PUN-FMS_YUN_WEB20P_usprd01" address="http://PUN-FMS-WEB:4544"
 ismaster="false">
<transientvolume id="8c425ee7352a4657ac777dc198712cb3" enterpriseid="-1234567890"
 root="D:\\Temp\\transientVolume_usprd01" priority="0" />
</fsc>
<fsc id="PUN-FMS_YUT_usprd01" address="http://PUN-FMS-YUT:4544" ismaster="true">
<volume id="c07e4bfa95a44a0894b0" enterpriseid="-1234567890"
 root="D:\Siemens\usprd01_vols\YUT_vol1" priority="0" />
</fsc>
<fsc id="PUN-FMS_YRT_usprd01" address="http://PUN-FMS-YRT:4544" ismaster="true">
<volume id="9c1cfc281ec644eabec6" enterpriseid="-1234567890"
 root="D:\Siemens\usprd01_vols\YRT_vol1" priority="0" />
</fsc>
<clientmap subnet="127.0.0.1" mask="0.0.0.0">
<assignedfsc fscid="PUN-FMS_YUN_WEB20P_usprd01" priority="0" />
</clientmap>
</fscgroup>
```

9.2. Failover Mechanism for HaloENGINE GenNXT in HaloCAD for PLM

Server failover between two systems supports uninterrupted operation and service reliability in the event of a failure. The server failover configuration is **active-standby**, where the primary server is **active,** and the secondary server is **standby**.

HaloCAD for PLM supports connection failover between two HaloENGINE GenNXT instances. The failover mechanism provides the following benefits:

1. **High Availability**: If the primary HaloENGINE GenNXT fails, the secondary HaloENGINE GenNXT takes over, reducing downtime and maintaining continuous operation.
   Example: Assume that your business process requires no downtime.
   As part of the business security policy, the administrator configures **Fail-Safe Mode** as **Strict** to block file uploads or downloads whenever an error occurs. If HaloENGINE GenNXT encounters an unexpected issue and fails to obtain label information, file uploads or downloads are prevented. In such cases, the HaloENGINE GenNXT failover mechanism handles the situation without affecting the end user. If the primary HaloENGINE GenNXT connection fails, HaloCAD detects the failure and immediately switches to the secondary HaloENGINE GenNXT to continue providing services.
   Once the primary HaloENGINE GenNXT is restored, it remains in standby while the secondary HaloENGINE GenNXT remains active. If the secondary HaloENGINE GenNXT fails, the primary HaloENGINE GenNXT takes over operations again.



Failover Mechanism for HaloENGINE GenNXT in HaloCAD for PLM

2. **Redundancy**: Provides redundancy by ensuring that another HaloENGINE GenNXT is always available to take over if the primary HaloENGINE GenNXT fails. This minimizes the possibility of a single point of failure.
3. **Data Integrity and Consistency**: In the event of a failure, the failover mechanism helps ensure that data remains consistent and that file upload and download activities are not lost. This is crucial for systems that rely on high data security.

Failover Mechanism Requirement

1. **Network Infrastructure:** Deploy the secondary HaloENGINE GenNXT on a separate network segment from the primary HaloENGINE GenNXT.
2. **Data Replication:** Ensure that both HaloENGINE GenNXT use the same classification profiles and rules.

9.3. Third-Party Libraries

Third-party software/code is included or bundled with Secude's products according to its appropriate license. Secude conducts testing to make sure the third-party products are compatible with and perform as intended with Secude applications.

The third-party libraries and dependencies used by HaloCAD for Teamcenter are shown in the table below.

Library names	Versions	Source Code URLs	License Links
HTTP-Proxy-Servlet		https://github.com/mitre/HTTP-Proxy-Servlet	https://github.com/mitre/HTTP-Proxy-Servlet/blob/master/LICENSE.txt
httpmime	4.5.+	https://mvnrepository.com/artifact/org.apache.httpcomponents/httpmime	http://www.apache.org/licenses/LICENSE-2.0.txt
httpclient	4.5.+	https://mvnrepository.com/artifact/org.apache.httpcomponents/httpclient	http://www.apache.org/licenses/LICENSE-2.0.txt
mail	2.1.1	https://mvnrepository.com/artifact/javax.mail/mail	http://www.sun.com/cddl https://glassfish.java.net/public/CDDL+GPL_1_1.html
commons-io	2.+	https://mvnrepository.com/artifact/commons-io/commons-io	https://www.apache.org/licenses/LICENSE-2.0.txt
javax.servlet-api	5.0.0	https://mvnrepository.com/artifact/javax.servlet/javax.servlet-api	https://glassfish.dev.java.net/nonav/public/CDDL+GPL.html
jna	5.13.0	https://mvnrepository.com/artifact/net.java.dev.jna/jna	http://www.apache.org/licenses/LICENSE-2.0.txt http://www.gnu.org/licenses/licenses.html

Library names	Versions	Source Code URLs	License Links
jna-platform	5.13.0	https://mvnrepository.com/artifact/net.java.dev.jna/jna-platform	http://www.apache.org/licenses/LICENSE-2.0.txt http://www.gnu.org/licenses/licenses.html
MIP SDK	1.18.103	https://learn.microsoft.com/en-us/information-protection/develop/version-release-history	https://docs.microsoft.com/en-us/information-protection/develop/
MSAL	4.82.1	https://github.com/AzureAD/microsoft-authentication-library-for-dotnet	https://github.com/AzureAD/microsoft-authentication-library-for-dotnet/blob/master/LICENSE
Spdlog	1.15.3	-	https://github.com/gabime/spdlog

Third-party libraries

9.4. Teamcenter Metadata Definitions

The table below lists the Teamcenter metadata available in the HaloENGINE GenNXT.

Teamcenter metadata	Use
user_role	Derivation from the user role. Multiple roles may be assigned to a single user. (For example, Designer and Engineer)
user_def_group	Derivation from a group of users who log in. (For example, a user from the Engineering group)
gov_clearance	Derivation from a specific object based on value or licensing value. (For example, secret - single value field)
ip_clearance	Derivation from intellectual property (IP) classification values and clearance levels assigned to data objects and users for IP access evaluation. (For example, super-secret - single value field)

Teamcenter metadata	Use
user_name	Derivation from Teamcenter logged-in users. (For example, John and Derek)
file_type	Derivation from file type and Teamcenter object data. (NX file types and MS Office native file types) (For example, prt, asm, and XLSX)
gov_classification	Derivation from a Teamcenter object based on its value or license value. (For example, secret - single value field)
obj_project_names	Derivation from Teamcenter object data. The object could be used in several projects. (For example, project1; project2- multi-value- field)
ip_classification	Derivation from Teamcenter's intellectual property (IP). (For example, secret, internal, and confidential - single value field)
preexpression_custom_pre-expression	Derivation from custom pre-expression. 1. Yes 2. No

Teamcenter metadata

9.5. Deactivating the HaloCAD for Teamcenter

For any diagnostic testing purposes in connection with HaloCAD, you may need to deactivate HaloCAD for a while. In such cases, follow the procedure below:

1. **Step 1**. Stop **fsc** service.
   Remove the changes done in FMS master file `fmsmaster_FSC_<ComputerName>_Teamcenter.xml`
   For example,
   ```
   <loadbalancer id="ReverseProxy" address="http://tclu0310.Secude.local:8080/tc/fms/" />
   ```
2. **Step 2**. Remove the changes made in the FCC file.
   a. Go to `<installed_path>\Teamcenter12\tccs\bin>`, and execute **CMD** with administrator privilege.
   b. Type `fccstat.exe -stop` and press **Enter**.

c. Remove the changes on the line in the `fcc.xml` file.

d. FCC Line format: `<parentfsc address="http://:/tc/fms" priority="0" transport="lan"/>` `<assignment address="parentfsc address">`

e. Alternatively, you can use the backup files of these two.

3. **Step 3.** Start **fsc** service.

   a. Type `fccstat.exe -start` and press **Enter**.

   b. Type `fccstat.exe -status` and press **Enter**. You receive a confirmation message without the Haloproxy port number, indicating that HaloCAD is not active.

4. **Step 4**. Remove the two **system variables** - **Default_Transient_Server** and **Fms_BootStrap_Urls**.
5. **Step 5**. Restart **Server Manager** from `services.msc`.
6. Complete your investigation, then activate it as described in the section "TCCS Configuration - Step 2".

9.6. Uninstalling the HaloCAD for Teamcenter

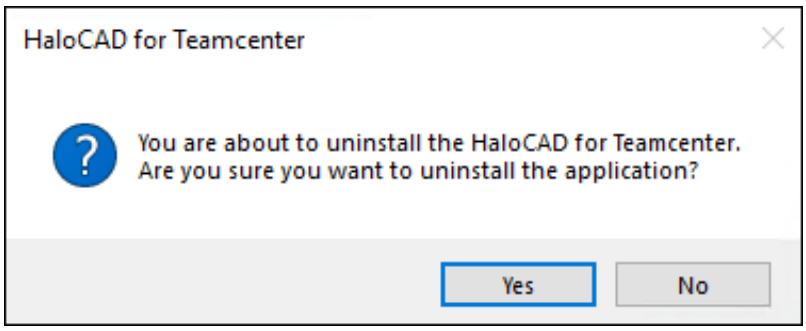
Once you stop using the HaloCAD component, you can uninstall it. Uninstalling removes all files and registry settings that were added to your computer during initial installation.

Prerequisites:

1. Close the Configuration Tool before uninstalling the application. If the tool is running, the uninstallation displays the following error message: "*Kindly close the running config tool and proceed uninstallation!*"
2. Revert the AWC SSO proxy URL redirection changes in the `IdentityService.xml` file before uninstalling the application.

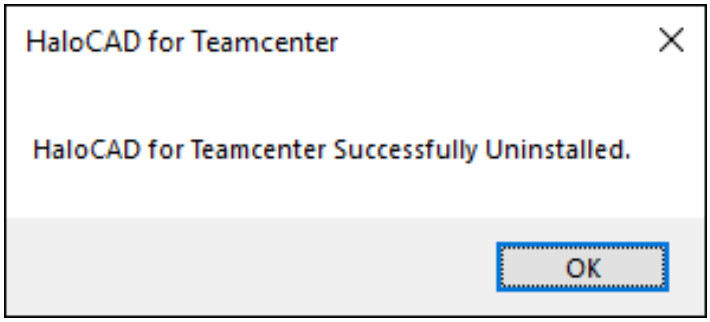
Method #1

1. Click the **Start** menu > go to **Control Panel** > **Programs** > **Programs and Features** > **Uninstall a Program** > select **HaloCAD for Teamcenter** application from the list > right-click and select the **Uninstall** option or double-click on the installer `HaloCAD_Teamcenter_Setup.exe` file.
2. Depending on your Windows security settings, you may get a security warning as "*Do you want to allow the following program to make changes to this computer*?". If this warning appears, click the **Yes** button to confirm that you want to uninstall the HaloCAD component.
3. The following confirmation message appears.



Uninstall Message #1

4. Click **Yes** to confirm that you want to remove it from the computer.



Uninstall Message #2

Result

- The HaloCAD component is successfully uninstalled.
- Click **OK** to close the dialog.
- The uninstallation process is complete.
- **Alternative method:** Open **Command Prompt** as Administrator, then run this command:

  `HaloCAD_Teamcenter_Setup.exe -uninstall`

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