Secude

HaloSHARE

Installation and Configuration Manual

Version 3.1

Copyright

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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 Contains detailed information about a topic and are of direct importance to the subject at hand. 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

Secude's HaloSHARE streamlines and secures your internal and external business operations by simplifying bulk file management with classification, labeling, encryption, and digital watermarking. HaloSHARE extends Microsoft Purview Information Protection (MPIP) to CAD, MS Office files, and non-office formats, such as text and PDF files stored in shared folders, encrypting sensitive data with customizable sensitivity labels that can be tracked, revoked, and set to expire.

1.1. What distinguishes HaloSHARE?

Digitization has improved supply chain efficiency but has also contributed to increased vulnerabilities. Sharing unprotected files with supply chain partners puts you at risk for various problems, including operational disruption and financial loss. In a multiuser scenario, when numerous users share access to a system or network, there are several potential file access and security risks. To secure your business operations from harmful attacks along the supply chain while not disturbing workflows, protect all shared project files by default.

HaloSHARE, a labeling solution, can effortlessly overcome the difficulty by automatically encrypting hundreds of sensitive files with a single drag-and-drop into a specified local folder (e.g., OneDrive or SharePoint) on a HaloSHARE-installed machine. Any file moved within the HaloSHARE radius (specified folder) is encrypted and protected against accidental file sharing and illegal access. As a result, this labeling solution protects your data within and outside your organization. Furthermore, HaloSHARE can watermark files while protecting them, allowing you to share and track project files without slowing down workflows.

Implementing this solution in your environment reduces the risk of a data breach and guarantees data protection regulations are always followed without the need for security personnel to perform any additional manual procedures.

1.2. About this Manual

This guide will walk you through the installation, configuration, and workflow of HaloSHARE.

1.3. Features

1. Supports the protection of bulk files in folders.
2. Supports label protection that is based on MPIP and custom permissions that are defined by the user.

3. Allows you to customize the protection for specific file types.
4. Support for removing protection easily and re-labeling protected files with an already existing label.
5. Provides bulk watermarking of sensitive information with visible and unique indications of who has been shared with the files and when (date-stamped), offering enhanced security and ownership recognition customized for your needs.
6. Supports adding custom properties to improve file security and contextual awareness.

1.4. Feature Setup and Licensing Details

Feature Name	Description	Setup Requirements
HaloSHARE File protection	Sensitivity labeling, encryption, and decryption of files.	A license key is required for the protection feature to be enabled. Note: 1. MPIP labels are required from the Microsoft Purview portal. 2. HaloCAD Add-on for CAD application is required to view the HaloSHARE-protected CAD files.
HaloSHARE Watermark	Watermark text as a visual indication. Ensure your license has the following features activated based on your business needs, which can be utilized together or separately. 1. Watermarking PDF files 2. Watermarking CAD files 3. Watermarking Office files	A license key is required with the watermark feature enabled. Note: 1. HaloCAD Add-on for CAD application is required to view the HaloSHARE watermarked CAD files. 2. With HaloSHARE's watermarking feature, MPIP labels are not needed.
HaloSHARE CUI marking	Controlled Unclassified Information (CUI) marking	A license key is required with the CUI feature enabled.

Feature Name	Description	Setup Requirements
	1. CUI PDF files 2. CUI Office files	Note: With HaloSHARE's CUI marking feature, MPIP labels are not needed."
HaloSHARE Protection with Watermark and CUI marking	All of the above combined.	A license key is necessary to apply protection, watermarking, and CUI features. Note: 1. MPIP labels are required from the Microsoft Purview portal. 2. To view the CAD file with watermark and protection, install the HaloCAD Add-on for CAD.

Feature set up

License Combinations in HaloSHARE

The list above outlines the basic licenses available with HaloSHARE. Depending on user requirements, license combinations are also offered. For example, HaloSHARE protection with watermarking for PDF files, or HaloSHARE watermarking for Office files combined with CUI marking for PDF files.

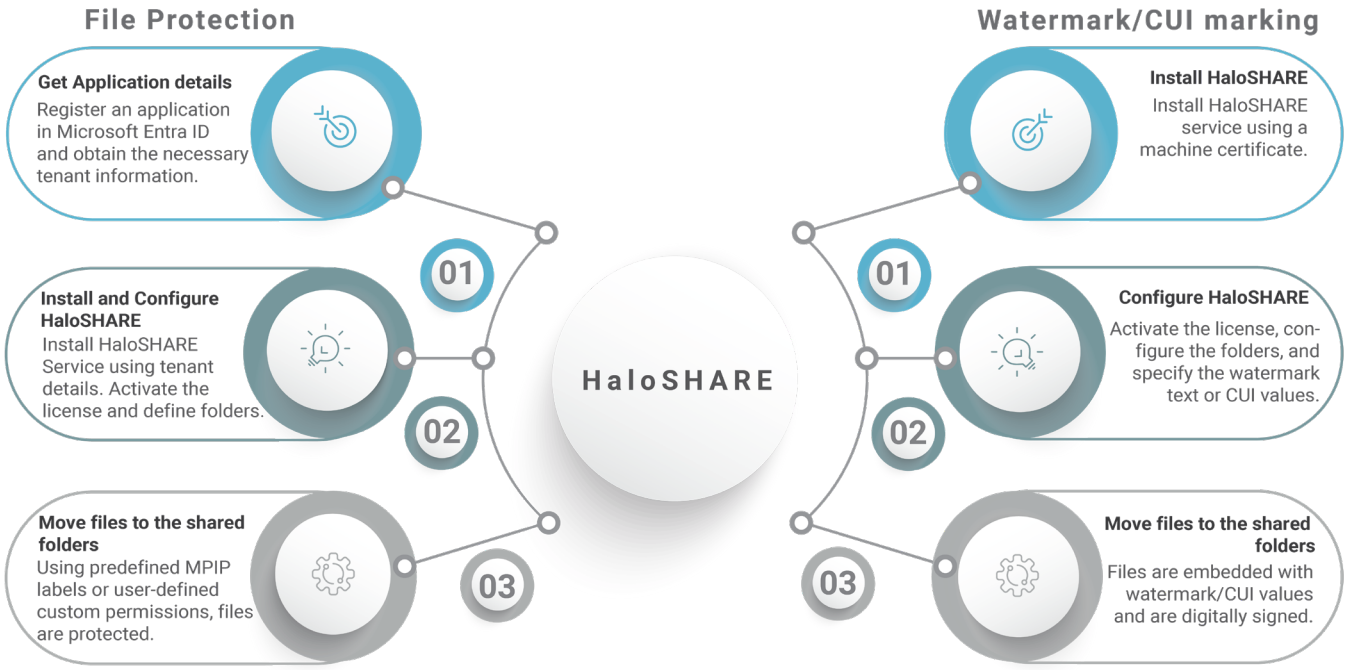
1.5. General FAQs

This section provides answers to the most frequently asked questions (FAQ). If you have any further inquiries, please get in touch with our sales representative or our support team.

1. **What does HaloSHARE provide for an organization?**
   This labeling solution protects your files and enforces security throughout their full life cycle.
2. **Does it protect all native Computer-Aided Design (CAD) file types?**
   Yes, HaloSHARE supports all CAD native file types.
3. **What happens if an unauthorized person attempts to open a HaloSHARE-labeled file?**
   Initially, user authentication occurs. It is a process of verifying a user's identity. If the user fails during the authentication, he/she will be prompted with an error message and access will be denied.
4. **Who decides what labels should be used for various supplier folders and how it is managed in the background?**
   In an organization, a MPIP administrator is responsible for creating and managing labels (user rights) in the Microsoft Purview portal. The choice of label can be made by engineers or designers who create drawings for a specific supplier.
5. **What if I don't want a certain file type to be protected?**
   HaloSHARE encrypts any file based on the extension specified in the configuration. As a result, you can whitelist file types to be encrypted and blacklist file types by not defining them in the configuration.
6. **Is it possible to apply custom permissions to protect a file?**
   Yes, HaloSHARE allows users to apply custom permissions without using MPIP labels.
7. **How to open a protected CAD file?**
   You can view a Protected CAD file using a HaloCAD Add-on for CAD applications.
8. **How to open a protected PDF file?**
   You can view a protected PDF file using Adobe Acrobat Reader DC/Acrobat DC or the Microsoft Edge browser. Additionally, it can be opened with the Microsoft Purview Information Protection viewer.
9. **How do I view the watermark on a CAD file?**
   When a HaloSHARE-watermarked CAD file is shared with external partners, they can view it by installing the HaloCAD add-on for CAD applications.

2. Quick Start Installation Summary

The following image shows a high-level overview of installing the HaloSHARE service.



Quick start implementation steps

3. Architecture

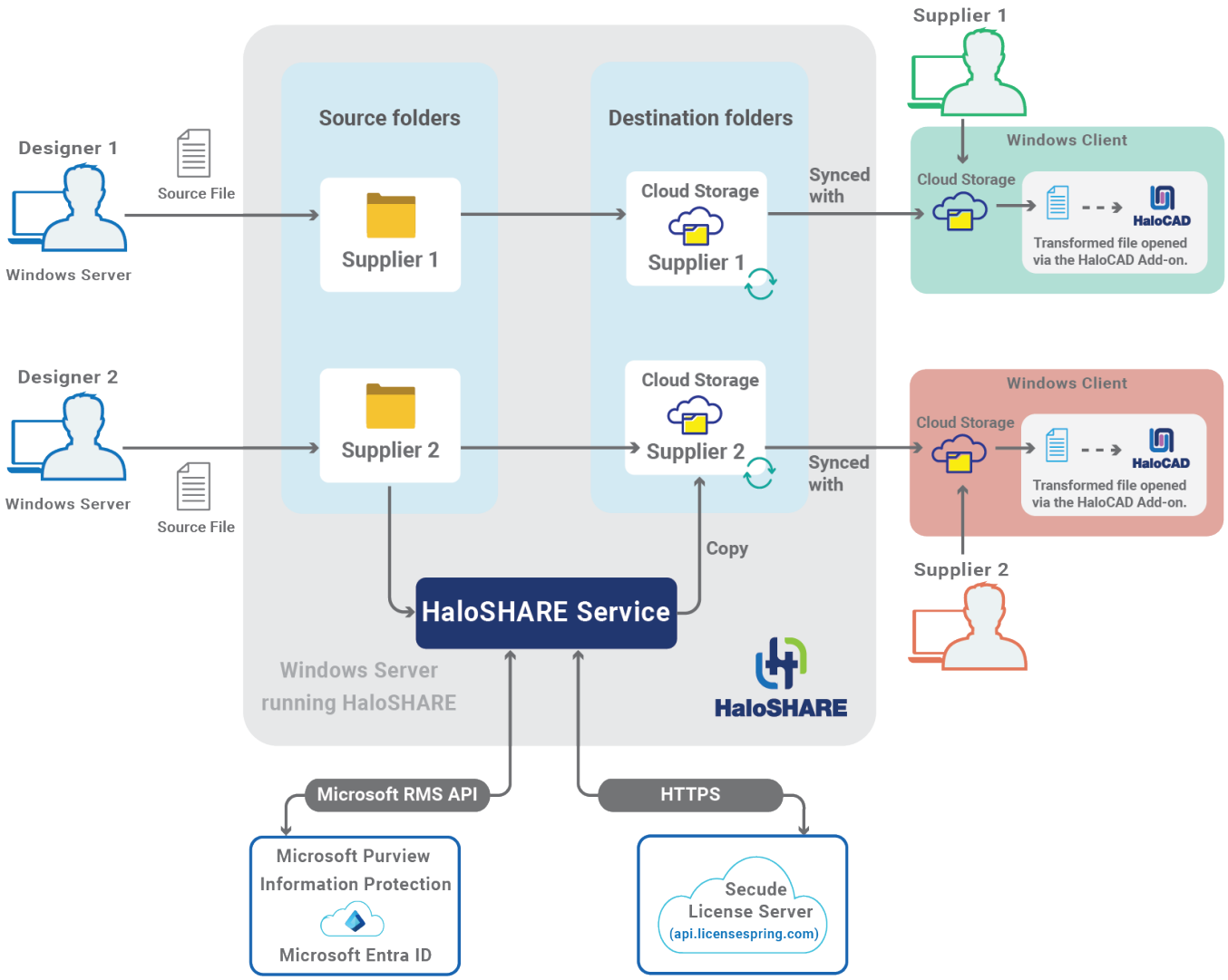
HaloSHARE is a service that runs on a Windows Server and communicates with the Microsoft Azure Rights Management Service (RMS) to encrypt files in a specific folder using predefined MPIP labels or user-defined custom permissions. Through the HaloSHARE configuration screen, HaloSHARE users can map their suppliers and their associated folders.

HaloSHARE Protection

When unprotected sensitive files are added to the shared folder that HaloSHARE is constantly monitoring, they are screened, and the HaloSHARE Service communicates with the Microsoft Azure Rights Management Service (RMS) to automatically encrypt the files using predefined MPIP labels or user-defined custom permissions.

HaloSHARE Watermark

When files are placed in the shared folder that HaloSHARE is constantly monitoring, they are automatically screened, watermarked (e.g., confidential), and signed with a digital certificate. As a result, the files are secure and cannot be edited by any user. These secured files will include metadata that has been set up by the administrator in the HaloSHARE service.



Architecture

At a high level, the HaloSHARE workflow consists of these steps:

Assume that in a corporate landscape, different teams produce and share files with designated folder names, such as "Supplier 1-Prestin Engineering" and "Supplier 2-United Engineering", in a locally shared folder on a HaloSHARE-installed machine. Additionally, HaloSHARE is configured to move files to a destination folder, as illustrated below.

Source Folders	Destination Folders
Supplier 1-Prestin Engineering	`C:\SharePoint\Supplier 1`
Supplier 2-United Engineering	`C:\Onedrive\Supplier 2`

Source and destination Folders

Based on the feature selection, the following process takes place:

HaloSHARE for protection: HaloSHARE scans the folder and subfolders for new files, determines whether to encrypt them, and then applies the appropriate MPIP label or custom permission. The labeled files are transferred to the destination folders, usually a shared folder specific to your supplier. The destination folder can be a OneDrive\SharePoint directory. As a result, every supplier gets their destination folder for sharing business information.

HaloSHARE for watermark: HaloSHARE scans the folder and subfolders for new files. When a new file arrives, it is watermarked and signed with a digital certificate. The watermarked files are transferred to the destination folders, usually a shared folder specific to your supplier. The destination folder can be a OneDrive\SharePoint directory. As a result, every supplier gets their destination folder for sharing business information.

Third parties, including suppliers, vendors, and external consultants, can only access HaloSHARE-protected and watermarked files through the HaloCAD Add-on. Please refer to HaloCAD manuals for more information.

4. System Requirements

The following system requirements table specifies the minimum and recommended technical specifications, such as software and network resources, necessary to run the product.

Components	Details
Operating System	1. Supported in Microsoft Windows Server 2022 and above. Note: HaloSHARE can also run on a Windows client machine, but it is recommended to run it on a server system. 2. Requires **.NET** Framework 4.6.2 and above. 3. Latest Windows system updates installed.
MPIP Label protection-specific requirements	
Office 365 Subscription	1. An Azure subscription is required to use Azure RMS and the MPIP functionality. 2. A working Microsoft Entra ID service must be available. 3. Microsoft Purview Information Protection must be fully configured. 4. HaloSHARE creates an outbound network communication with Microsoft Azure Services. 5. TLS 1.2 or higher must be enabled to ensure the use of cryptographically secure protocols. 6. Register an application to get the Application (client) ID and Tenant ID in the Azure portal. 7. Refer to the below table "**Recommended URLs, Addresses, and Ports for MPIP"** to know about the service endpoints.
Supported file types	1. File types that will be included when adding asterisk symbol (*) are `.dwg`, `.dxf`, `.ipt`, `.iam`, `.idw`, `.ipn`, `.rvt`, `.rfa`, `.prt`, `.asm`, `.drw`, `.frm`, `.mfg`, `.sec`, `.lay`, `.par`, `.dft`, `.eps`, `.emn`, `.emp`, `.psm`, `.jt`, `.sldprt`, `.sldasm`, `.slddrw`, `.slddrt`, `.dgn`, `.step`, `.ige`, `.iges`, `.neu`, `.log`, `.3dm`, `.3ds`, `.acis`, `.amf`, `.catpart`, `.catproduct`, `.cgr`, `.dae`, `.dwf`, `.easm`, `.fcstd`, `.g`, `.gcode`, `.gltf`, `.glb`, `.icd`, `.igs`, `.iv`,

Components	Details
	.model, .obj, .pic, .plmxml, .sat, .smt, .stl, .stp, .ste, .stpz, .tcw, .u3d, .unv, .usdz, .vda, .pvz, .qif, .wrl, .x_b, .x_t, .xaml, .z3, and .zip. 2. Creo file formats with iteration: .prt, .asm, .sec, .frm, .drw, .lay, .cem, .mfg, .neu, .log, and .pvz. 3. Microsoft Office and non-Office file formats.
Watermark specific requirements	
Files supported for watermarking	.pdf, .docx, .xlsx, .pptx, .dwg, .rvt, and .ifc.
Supported CAD application for watermark	1. AutoCAD 2023, 2024, 2025, 2026 2. Revit 2023, 2024, 2025, 2026
Application for viewing protected and watermarked files	1. HaloCAD Add-on for CAD application. 2. To view metadata in a Revit application, you need to install the **RevitLookup** tool.
Controlled Unclassified Information (CUI) marking specific requirements	
Supported file types for CUI	.pdf, .docx, and .pptx

Requirements

Recommended URLs, Addresses, and Ports for MPIP

MIP SDK doesn't support the use of authenticated proxies. So, make sure you set the Microsoft 365 service endpoints to bypass the proxy. View a list of endpoints at Microsoft Online Documentation. However, Microsoft recommends the following:

Addresses	Ports
*.protection.outlook.com 40.92.0.0/15, 40.107.0.0/16, 52.100.0.0/14, 52.238.78.88/32, 104.47.0.0/17, 2a01:111:f403::/48	TCP 443

Addresses	Ports
`*.aadrm.com`, `*.azurerms.com`, `*.informationprotection.azure.com`, `ecn.dev.virtualearth.net`, `informationprotection.hosting.portal.azure.net`,`*.office.com` (add `substrate.office.com` if you don't want to add all sub-domains), `crl3.digicert.com`, `crl4.digicert.com`.	TCP 443, 80
For event logging `*.events.data.microsoft.com`	TCP 443
National Cloud	**Microsoft Entra ID authentication endpoint**
Microsoft Entra ID for the US Government	`https://login.microsoftonline.us`
Microsoft Entra ID (global service)	`https://login.microsoftonline.com`

Recommended endpoints

Secude License Manager

To communicate with Secude License Manager, the following URL and port must be whitelisted in the customer's proxy:

Address	Port
License API - api.licensespring.com	TCP 443

Recommended license manager endpoint

5. Prerequisites

Before you install the HaloSHARE, there are a few things that you need.

5.1. Registering an Application in Microsoft Entra ID

This section will guide you through the steps of registering an application, obtaining the Client ID and Directory ID, and assigning permissions to the application.

Microsoft documentation

Registering an application in Microsoft Entra ID establishes a trust connection between your application and the identity provider, the Microsoft identity platform.

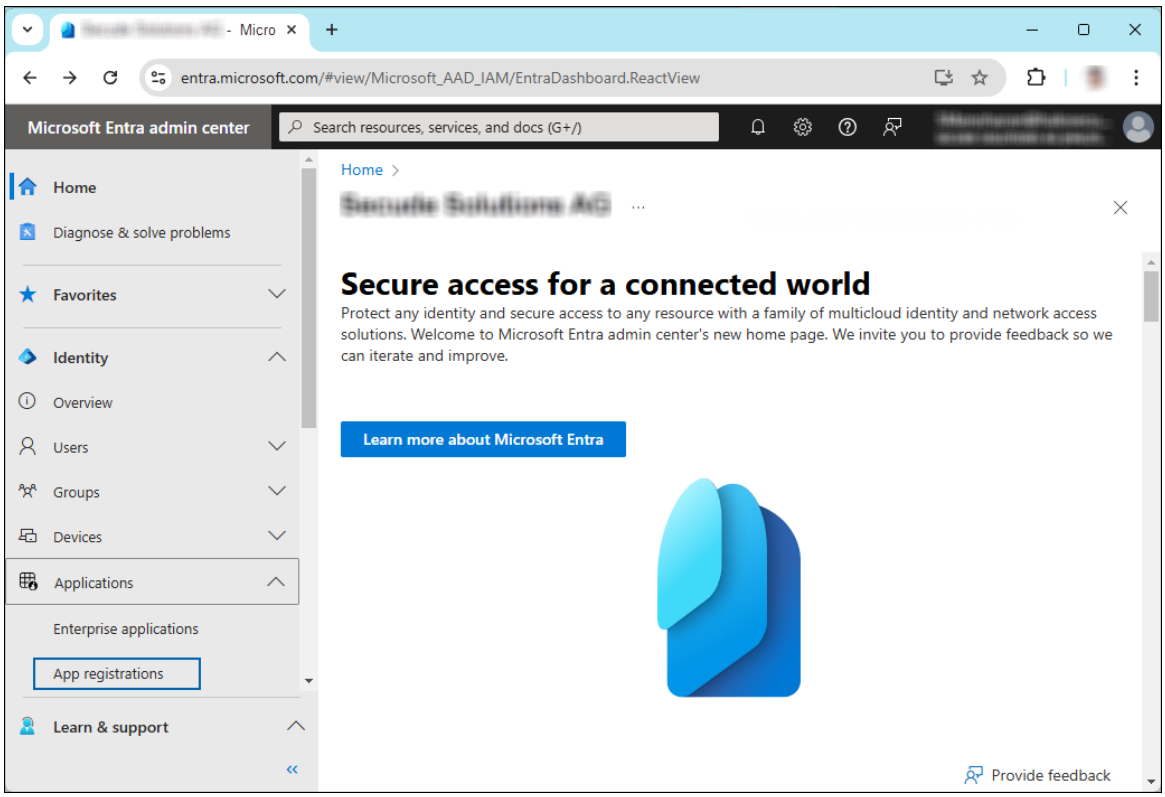
The information in the Microsoft documentation overrides any information published in this section. For a comprehensive description, refer to Microsoft documentation.

Prerequisite: You must have sufficient permissions to register an application with your Microsoft Entra ID tenant.

5.1.1. Create an Application

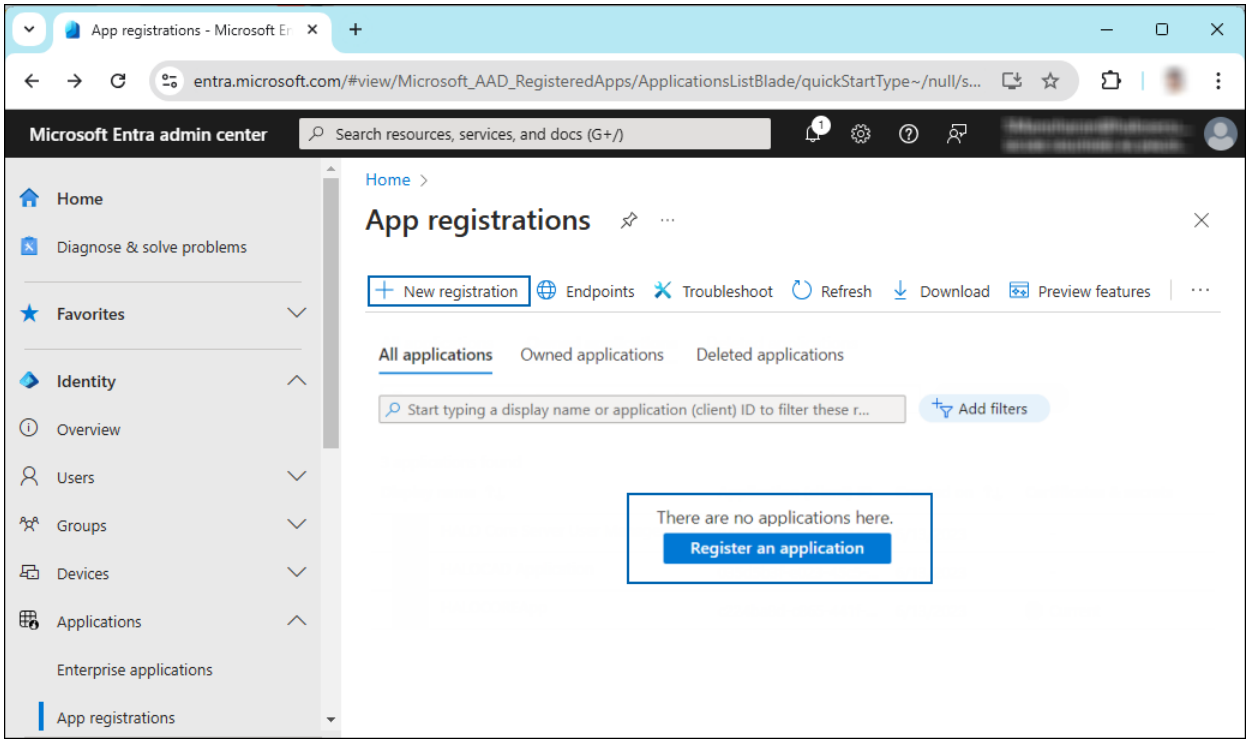
Follow these steps to register the application:

1. Log in to the Microsoft Entra admin center using an account that has administrator privileges.
2. If you have access to multiple tenants, click the Settings icon in the top menu and select the tenant for which you want to register the application from the **Directories + subscriptions** menu.
3. You will be directed to the homepage.



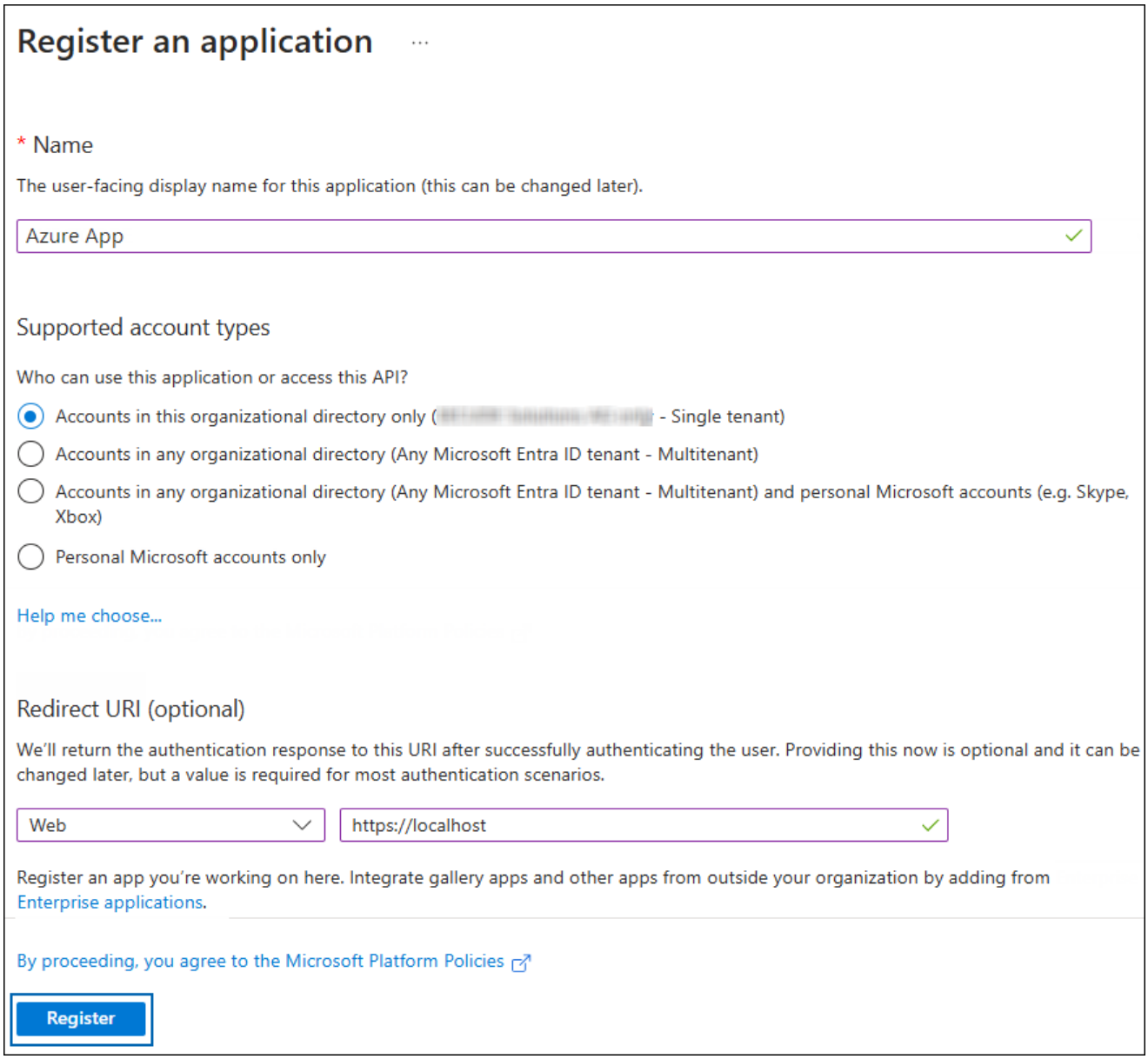
Selecting Microsoft Entra ID

4. On the left side of the navigation pane, click **Identity** > **Applications** > **App registrations**.
5. On the **App registrations** page, click the **New registration** page or **Register an Application** button (this button appears only if no applications have already been created).



New application registration

6. On the **Register an application** page, enter the registration details for your application.



Application details

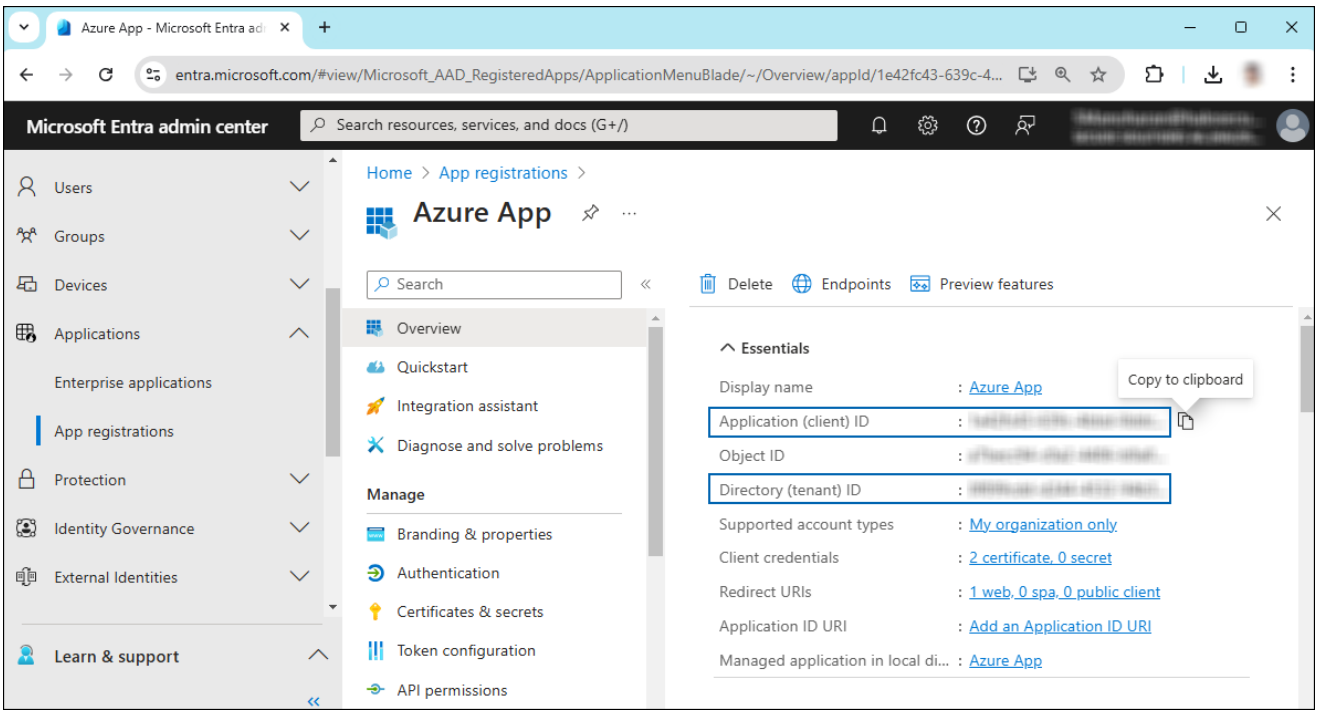
   a. In the **Name** field, enter an appropriate application name.

   b. Under **Supported account types**, select the option **Accounts in this organizational directory only (single tenant)**. As of now, HaloSHARE Service only supports a single tenant.

   c. Under **Redirect URI**: Select **Web**, and then type a valid redirect URI for your application. For example, `https://localhost`.

   d. When finished, click **Register**.

7. The home page of the new application is created and displayed.



Application ID and Tenant ID

8. The following values are shown on the portal once registration is complete. To copy and save the ID value in a text editor, hover your cursor over it and click the **Copy to clipboard** icon.
    a. **Application ID** – It is also referred to as **Client ID**.
    b. **Directory ID** – It is also referred to as **Tenant ID**.

Save the authentication parameters

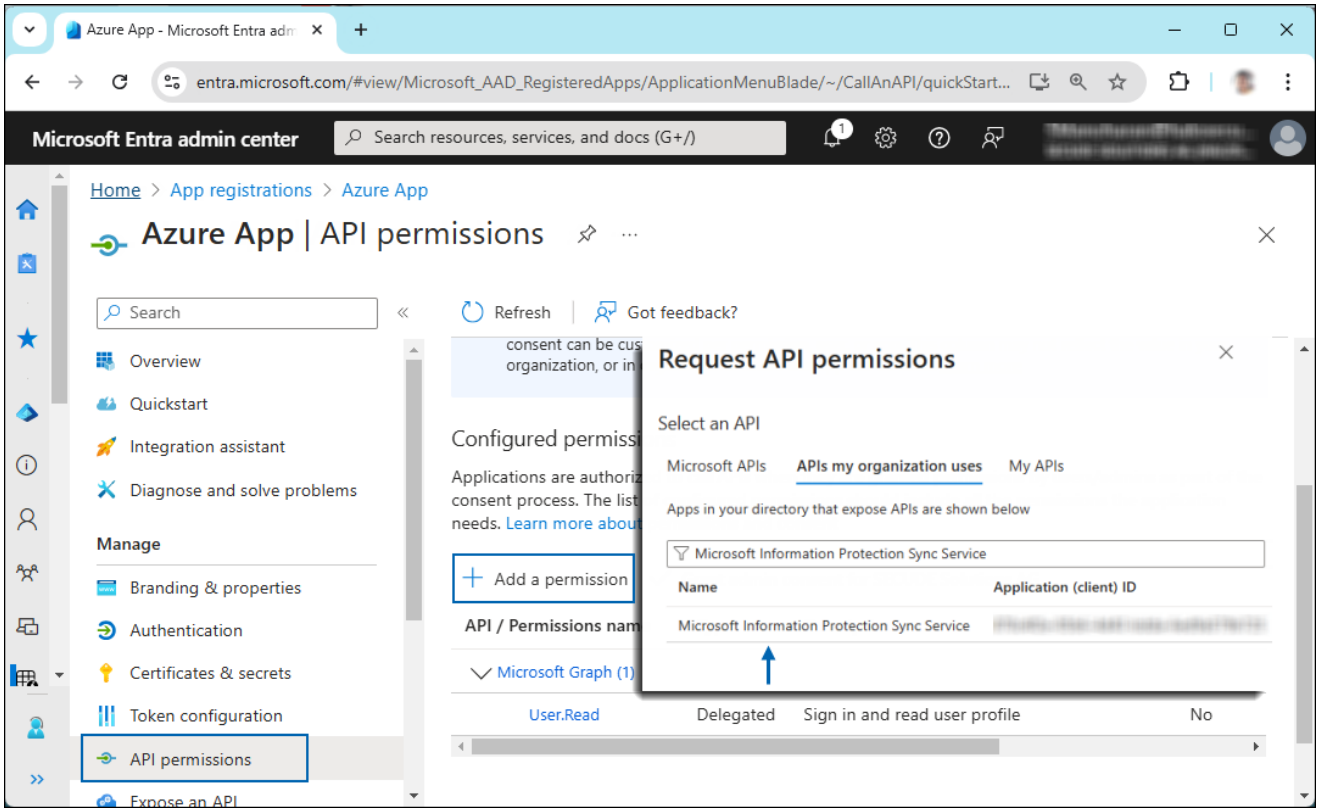
In a text editor (such as Notepad), copy the value of **Application (client) ID** and **Directory (tenant) ID**, and save it for initializing the HaloSHARE.

5.1.2. Add Required Permissions

To protect content with MIP SDK, you must provide the necessary API permissions to the application created in the previous section.

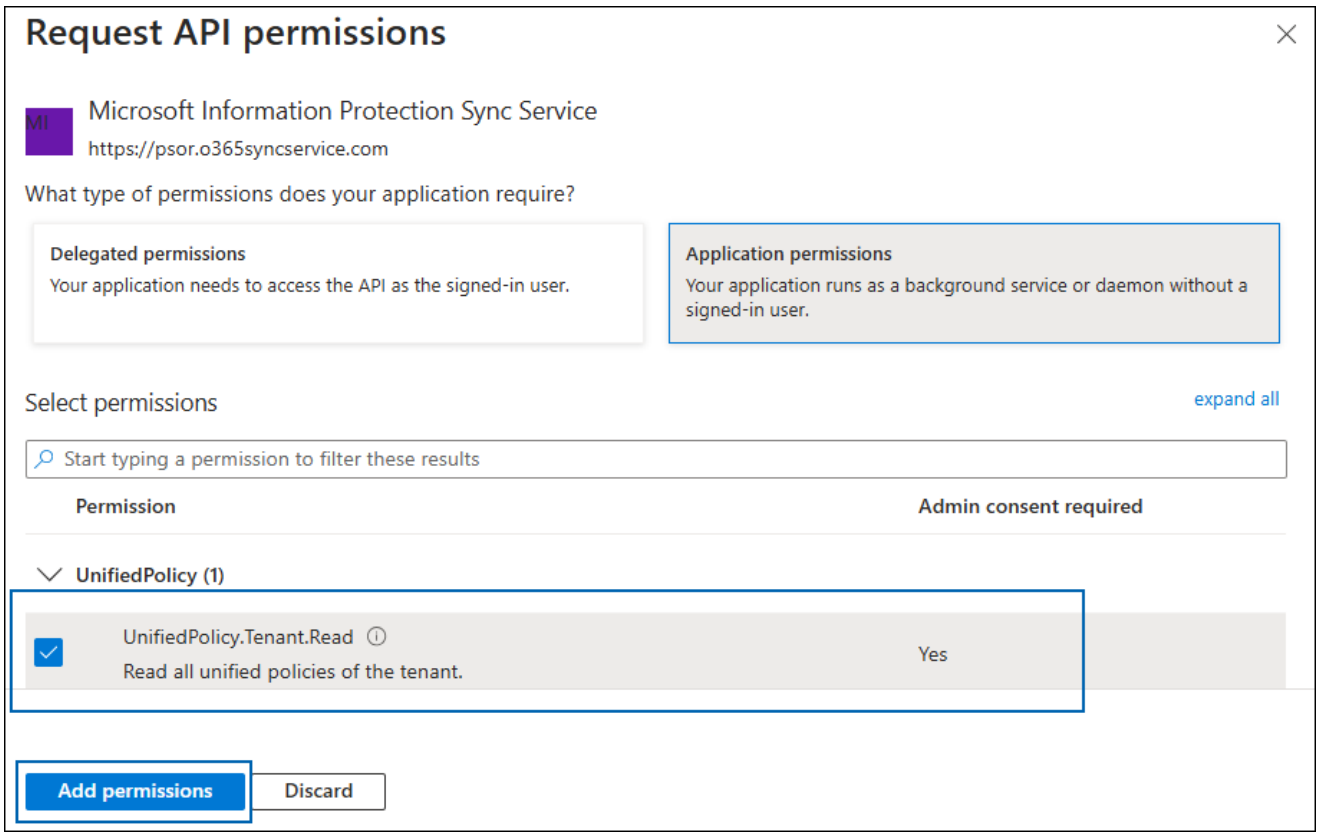
1. In the sidebar of the application page, select **API permissions**. The **API permissions** page for the new application registration page appears.
2. Click **Add a permission** button. The **Request API permissions** page appears.
3. Under the **Select an API** setting, select **APIs my organization uses**. A list appears containing the applications in your directory that expose APIs.
4. In the search box, type in the name of the permission indicated in the "Required Permissions" table below. Alternatively, you could scroll to find the API.

5. For example, type **Microsoft Information Protection Sync Service** into the search box. The following figure shows how the API is listed:



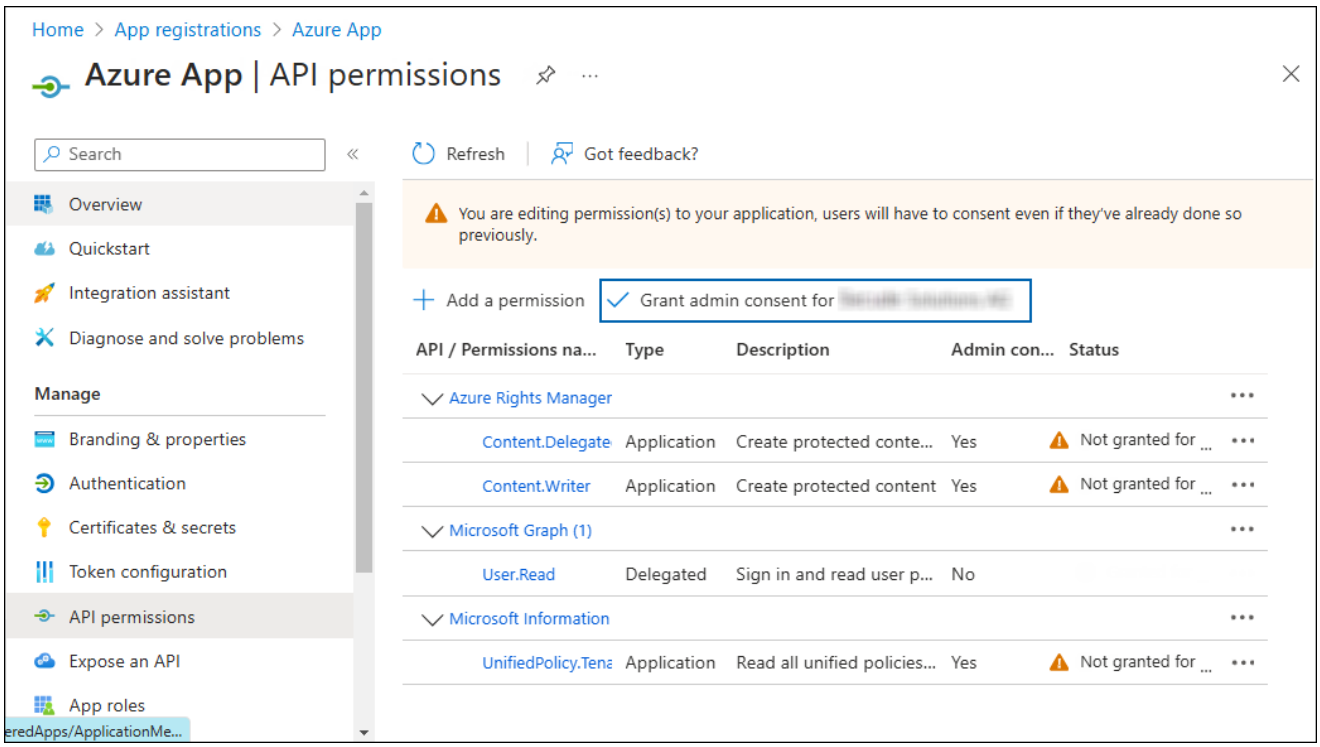
API selection

6. Now, click on the displayed API. You can see two permissions on the page – **Delegated permissions** and **Application permissions**.
7. Click **Application permissions** button and then under the **Permission** section, select the check box against **Read all unified policies of the tenant**"



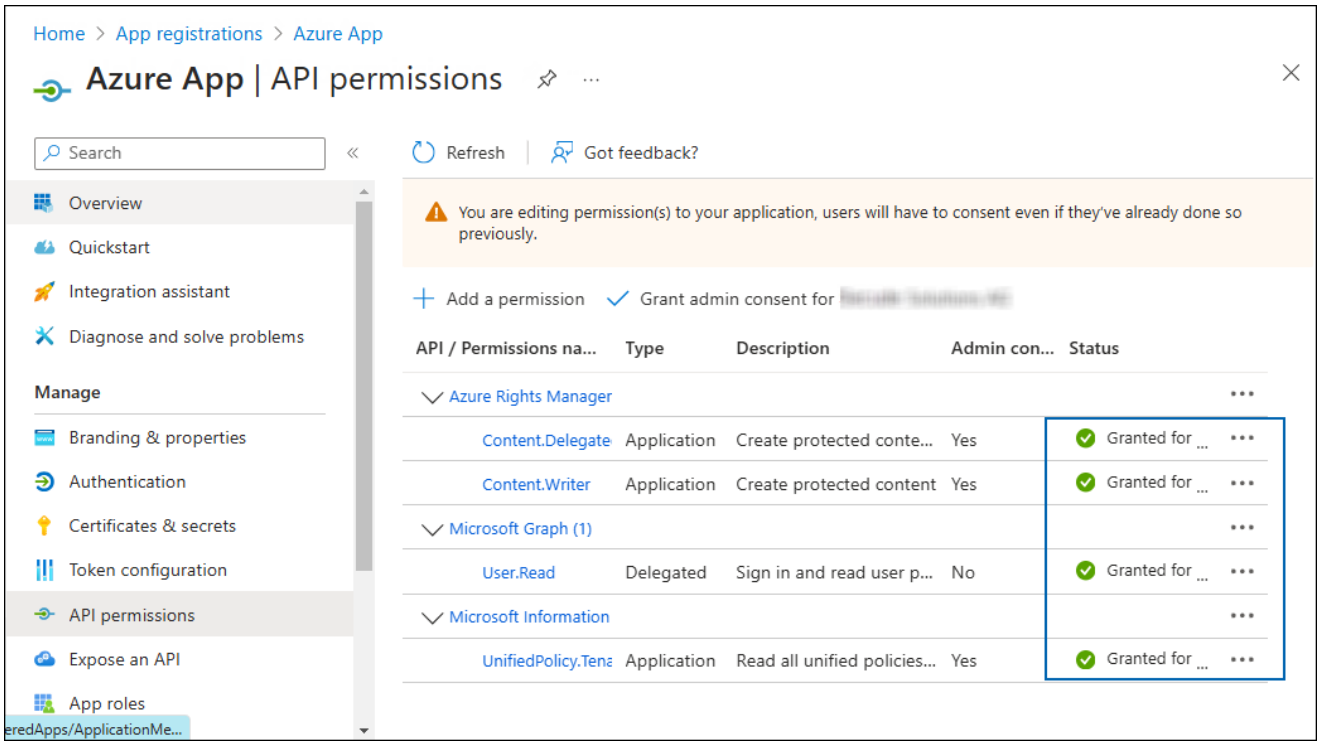
Adding permission

8. Click **Add permissions**.
9. Repeat the steps above to add the other required permissions listed in the “Required permissions” table below.
10. You will be taken back to the **API permissions** page, where the permissions have been saved and added to the table with the status **Not granted**.



Required API Permissions

11. Click **Grant admin consent for your company** button. You will be prompted to accept the consent confirmation; click **Yes** to the question.
12. After accepting the admin consent, the **Status** will change to **Granted**.



API Permissions with admin consent

13. The following table lists the required permissions.

API / Permission Name	Display Name	Type	Description
Microsoft Graph	`User.Read`	Delegated	Sign in and read the user profile. This API permission is added by default, but HaloSHARE does not use it.
Azure Rights Management Services (Microsoft Rights Management Services)	`Content.DelegatedWriter`	Application	Create protected content on behalf of a user
	`Content.Writer`	Application	Create protected content
Microsoft Information Protection Sync Service	`UnifiedPolicy.Tenant.Read`	Application	Read all unified policies of the tenant

Required permissions #1

Additional Permission (Only for Relabeling)

The above-mentioned permissions are adequate for applying the MPIP label to a file. In addition, HaloSHARE requires the following superuser privilege to relabel a file if the service is not the owner of the file.

API / Permission Name	Display Name	Type	Description
Azure Rights Management Services (Microsoft Rights Management Services)	`Content.SuperUser`	Application	Read all protected content for this tenant in the Azure portal

Required permissions #2

5.1.3. Upload the Certificate in the Azure Portal

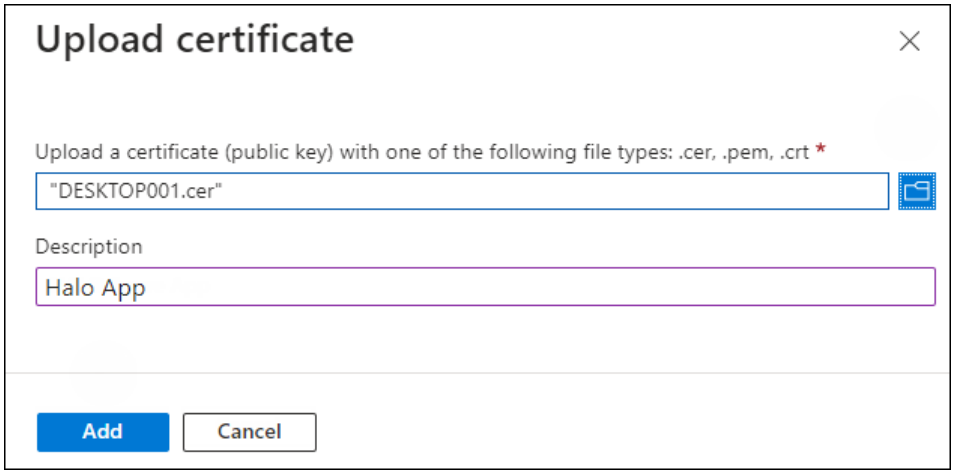
HaloSHARE is based on certificate authentication, so you must enter your certificate information into the registered application.

Prerequisites:

1. **Certificate**:
    a. Make sure to have a valid certificate that contains keys such as `-KeyExportPolicy Exportable` and `-KeySpec Signature`.
    b. And that can also be a self-signed certificate. Note: As a best practice and for security reasons, we recommend using a self-signed certificate in a test environment and NOT recommended for a production environment.
2. **Install the certificate**:
    a. Make sure to install this certificate on a Windows Server machine where the HaloSHARE is going to be installed.
    b. Certificate Store can either be **Current User** or **Local Computer**.
    c. If it is a self-signed certificate, then it should also be installed in **Trusted Root Certification Authorities**.
    d. If the certificate is signed, then the root CA authority and intermediate CA authority (if any) should also be installed in the respective trusted store.

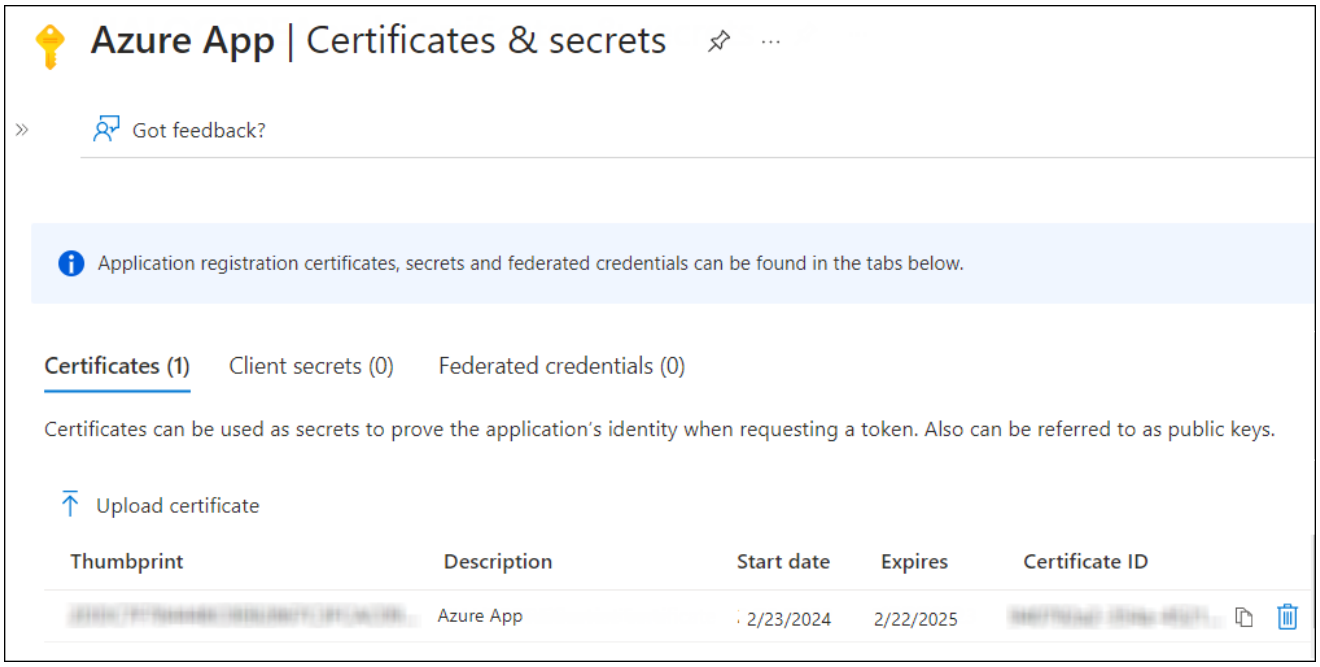
To upload the public key of certificate, follow the below steps:

1. In the sidebar of the new application page, select **Certificate & secrets**.
2. Under the **Certificate** section, click **Upload certificate**. The **Upload certificate** dialog appears as shown in the below figure:



Upload certificate #1

3. Click on the icon folder icon to select the certificate and click **Open**. For illustration purposes, the file `DESKTOP001.cer` is used.
4. Now, click **Add**. The certificate will get uploaded and its thumbprint will be displayed on the page as shown in the below figure:



Upload certificate #2

5. You are now ready to install the HaloSHARE.

5.2. Create and Configure the Sensitivity Labels

As an administrator, you can create, configure, and publish sensitivity labels for various levels of content sensitivity based on your organization's classification taxonomy. Use names or terms that are familiar to your users. Consider starting with label names like Personal, Public, General, Confidential, and Highly Confidential if you don't already have a taxonomy in place. For more details, please refer to Microsoft online documentation.

5.3. Others

1. To install the service, you must have local administrator privileges.
2. To run the service, you can use a user account with administrative privilege or non-administrative privilege.
3. The user who initializes the service should have appropriate permissions on the source and destination folders. In addition, the user who is running the service should have access to that network location in the format of an IP address. For example, `\\10.0.0.138\foldername`
4. **Watermarking CAD files**:
   a. Make sure that CAD applications such as Revit or AutoCAD are available on the system where HaloSHARE will be installed. This check is necessary because the HaloSHARE installer will only install the required watermarking files if the relevant CAD application-related files are present.
   b. Make sure the SharePoint folder is set to sync with the local mapped drive. Files marked **Always keep on this device** have a green circle with a white checkmark. This ensures that files are downloaded on your machine automatically.
   c. Make sure you have a machine certificate to preserve the watermarked files. Install this certificate on a Windows Server machine where the HaloSHARE will be installed. Certificate Store can either be **Current User** or **Local Computer**.
      i. **A self-signed certificate:** It should also be installed in **Trusted Root Certification Authorities**. Note: As a best practice and for security reasons, we recommend using a self-signed certificate in a test environment and NOT recommended for a production environment.
      ii. **A root CA (certificate authority) signed certificate**: The root CA and intermediate CA authority (if any) should also be installed in the respective trusted store.
5. Before you begin, make sure that the user who is running the service or a specific group that the user belongs to is not to the **Deny log on as a service** policy (**Local Security Policy** > **Security Settings** > **Local Policies** > **User Rights Assignment**). If the user(s) exist, the **Error 1069: The Service did not start due to a logon failure** message will appear while running the HaloSHARE.
6. **Watermark in Revit application**: The **RevitLookup** tool is required to view the custom properties (metadata) in the Revit application. After applying the watermark, navigate to **Revit Lookup** > **Dashboard** > **Schemas** > **HaloMetadataInfo** > **GetElements** > **GetEntity (Schema)** > **Get ()**.

6. Installing the HaloSHARE

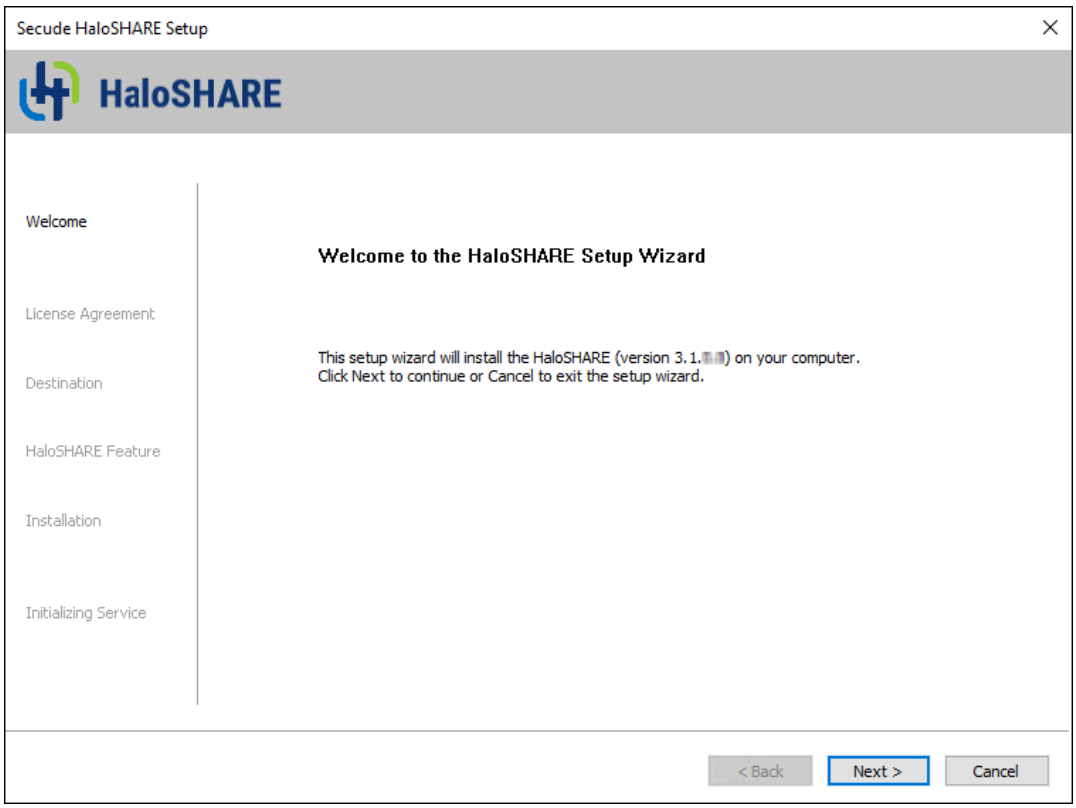
This chapter walks through the process of installing and configuring the HaloSHARE.

6.1. Interactive Installation

Install HaloSHARE using the GUI-based setup program provided in the installation package. Make sure the user who installs the HaloSHARE has administrator rights.

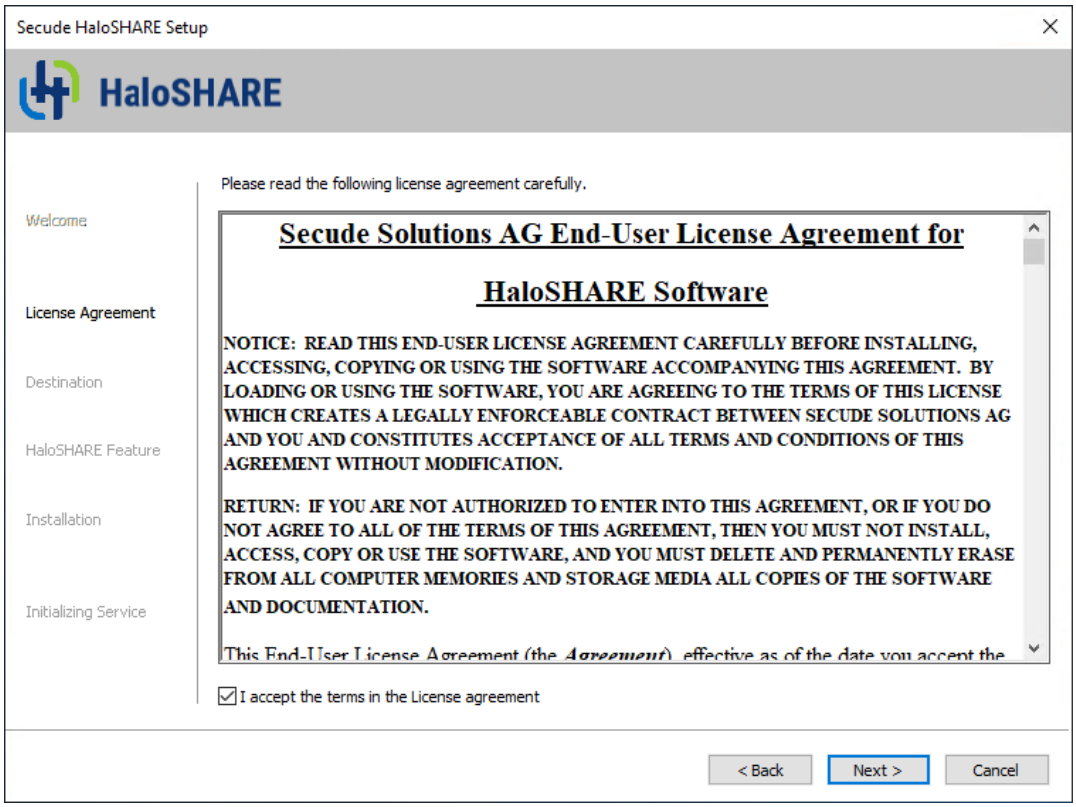
1. To begin the interactive installation, double-click the installer `HaloSHARE_Setup.exe` file. Depending on your Windows security settings, you may get a warning such as "*Do you want to allow the following program to make changes to this computer?*". If you get this security warning, click the **Yes** button to continue the installation.
2. When the installer starts, you will see the startup dialog followed by the welcome dialog:

Startup dialog



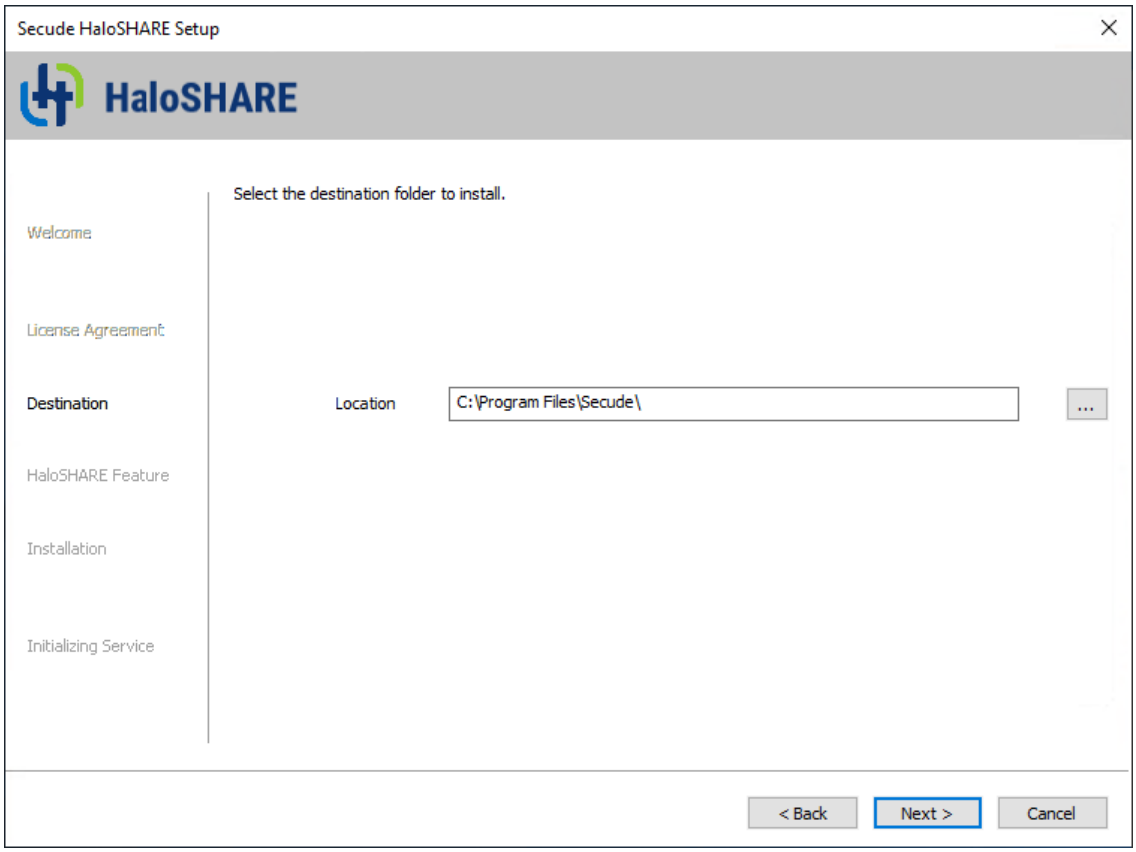
Welcome dialog

3. Click **Next** to continue the installation.
4. The **End-User License Agreement (EULA)** dialog appears.



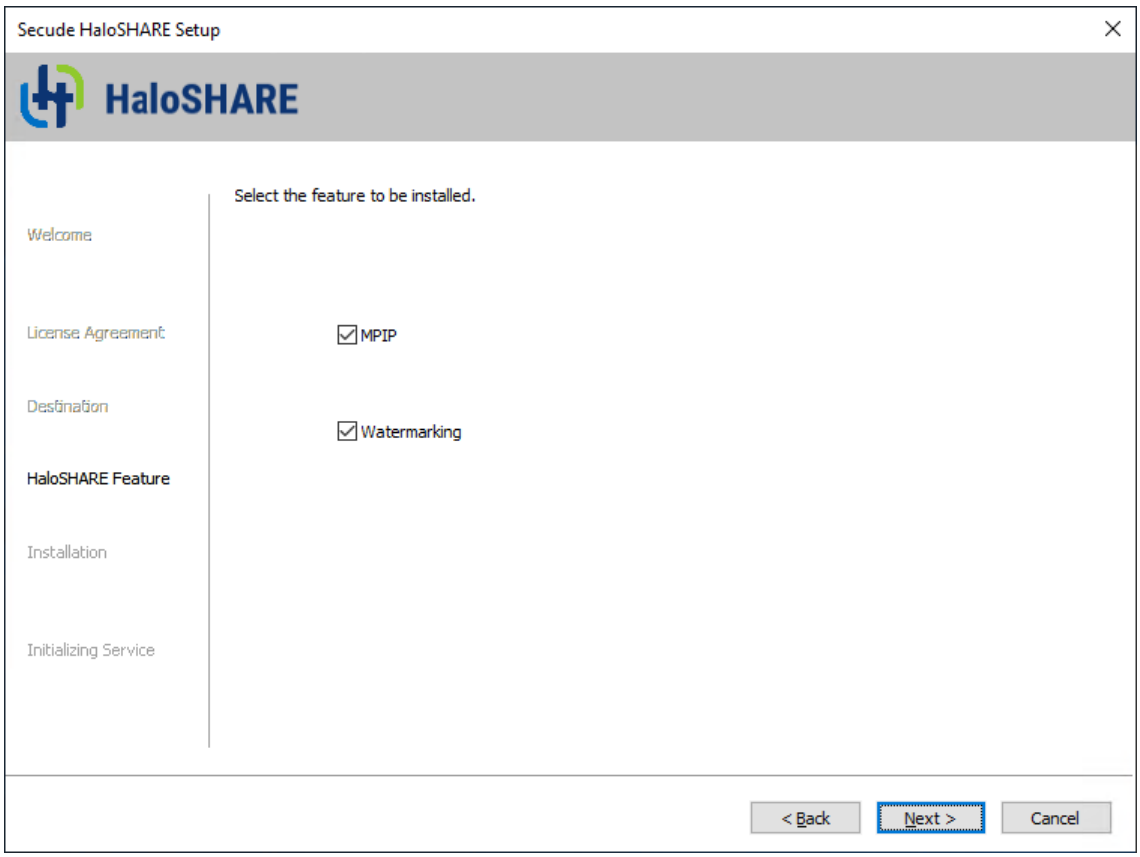
End-user License Agreement dialog

5. Read the **End-User License Agreement**. If you agree, select **I accept the terms in the License Agreement**, and click **Next** to continue.
6. The destination folder selection dialog appears:



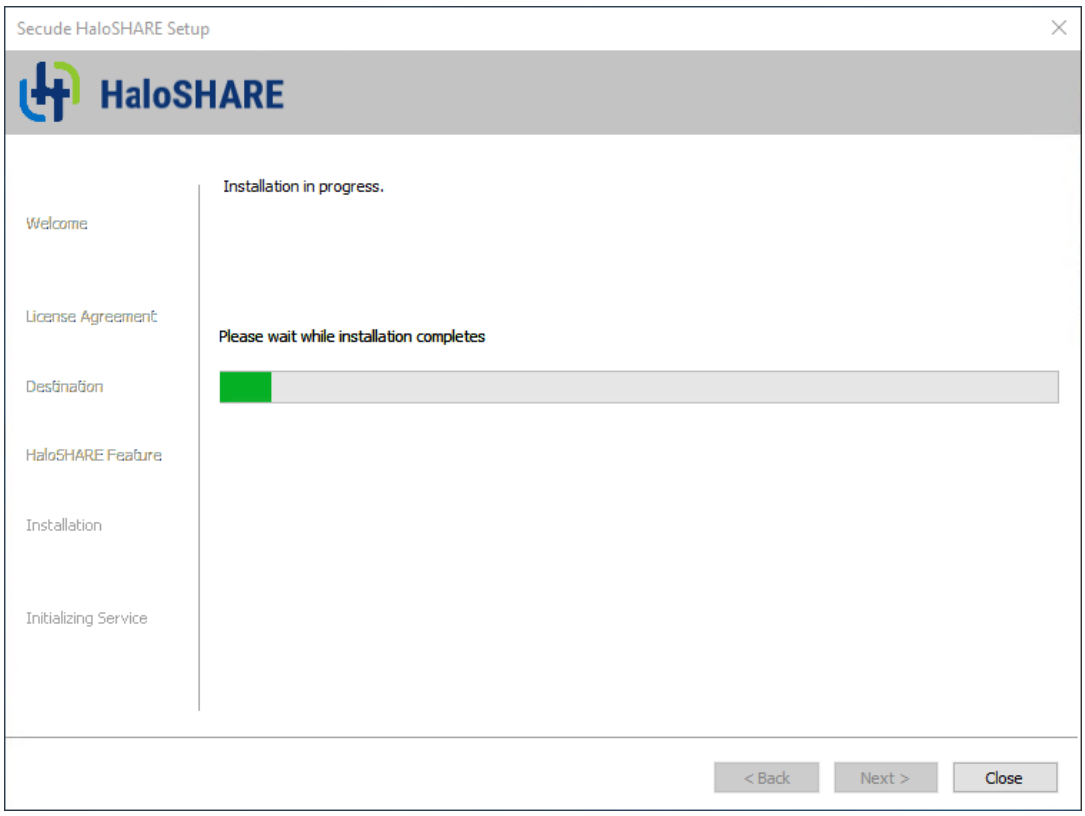
Destination folder selection dialog

7. By default, application files are stored in the program files directory (`C:\Program Files\Secude\`). If you would like to choose an alternate location, click the **Browse** button and select your location preference. When you are finished, click **Next**.
8. The HaloSHARE feature selection dialog will appear.



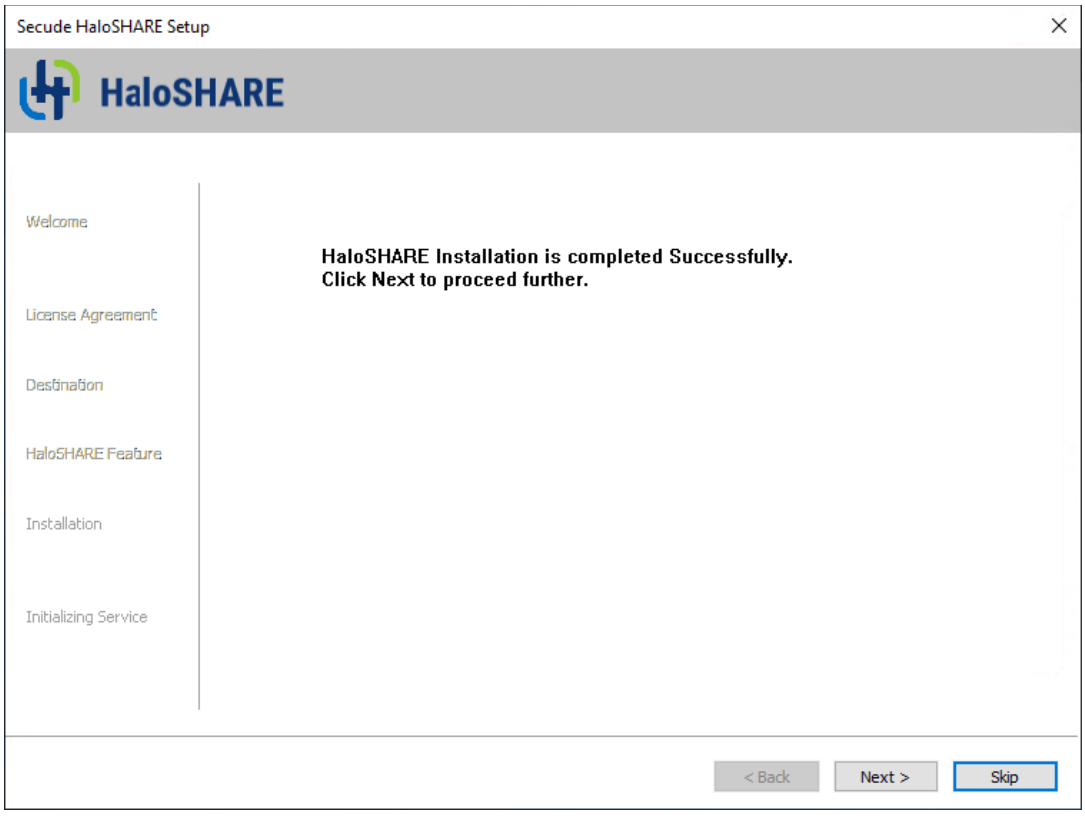
HaloSHARE feature selection dialog

9. You can choose either one of the following options or both, depending on your requirements.
    a. Select **MPIP** to apply MPIP labels for file protection.
    b. Select **Watermarking** to add a watermark and CUI to the files.
    c. Click **Next** to continue.
    d. To review or modify the installation settings, click **Back** to return to the previous screens.
10. The installation begins, and the progress is displayed in the dialog.



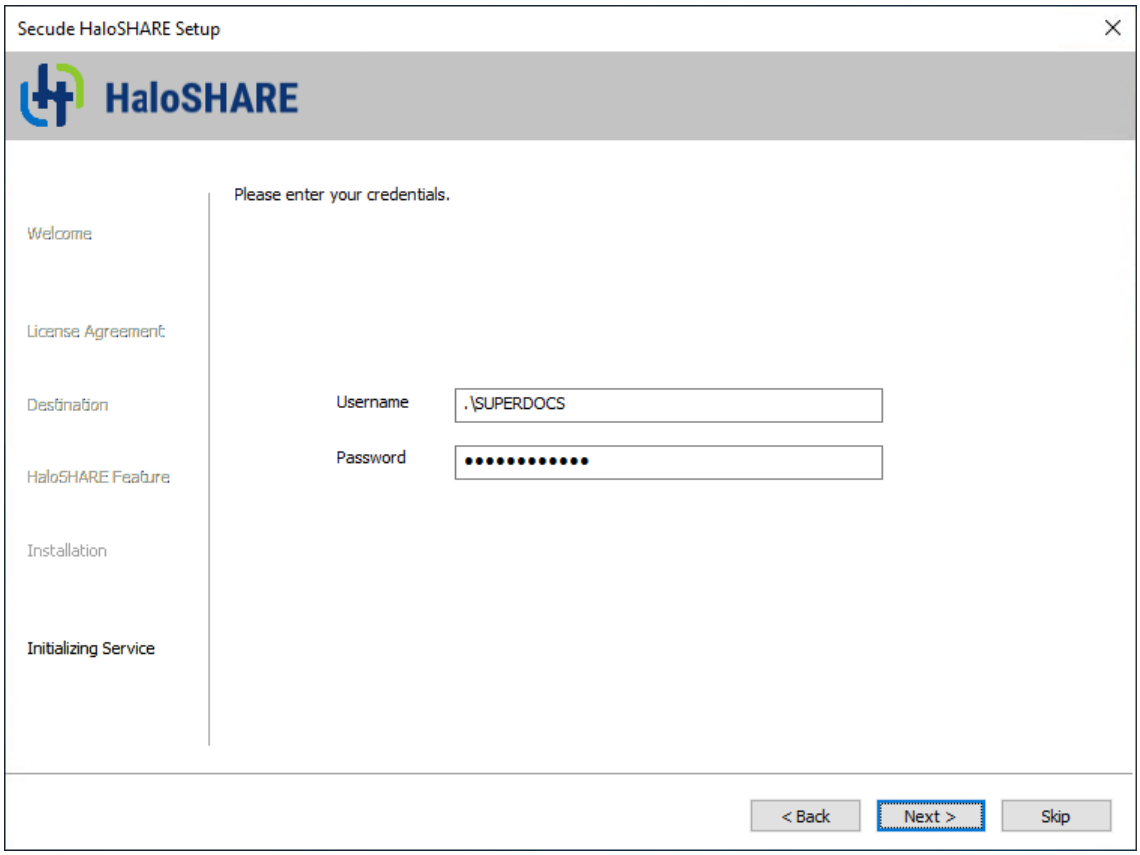
Installation progress dialog

11. When the installation is complete, a message appears confirming that the HaloSHARE has been successfully installed.



Installation completed dialog

12. Click **Next**. The user credential dialog will appear:



User credential dialog

a. If the computer is connected to a domain and you want to run HaloSHARE on it, you must enter a domain user account and password. For example, `[domain]\[user]`, `hc.test\john`.

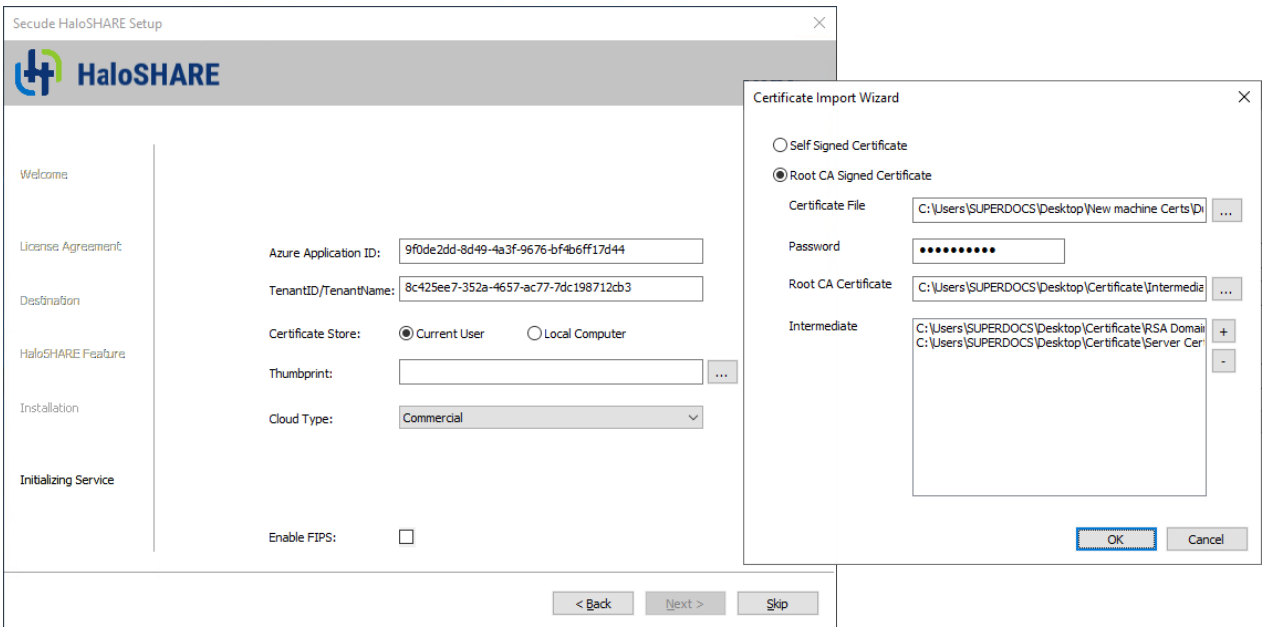
b. On a non-domain-joined computer, you need to enter the username and password of a user. For example, `.\[user]`, `.\john`.

13. Click **Next** to proceed.
14. If you have selected **Watermarking**, proceed to step 16.
15. If you have chosen **MPIP**, the following authentication dialog appears. To avoid errors, ensure that you enter the correct Azure application registration details in the installation wizard.

a. **Azure Application ID**: Enter your application ID. For example, `9f0de2dd-8d49-4a3f-9676-bf4b6ff17d44`

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

c. **Certificate Store**: Select a certificate store (**Current User** or **Local Computer**). When selecting Local Computer, ensure that the user running the service has at least local administrator rights.



MPIP authentication dialog

d. **Thumbprint**: If the certificate is already installed, you need to enter the thumbprint manually. If the certificate is not installed, click the **Browse** button to select the necessary certificates as explained in options 1 and 2.

e. **Option 1: Self-Signed Certificate**—select this option if you have a self-signed certificate, and this must be the certificate that is registered in the Azure portal. Click **Browse** button to select the certificate (`.pfx` or `.p12`) and type the password.

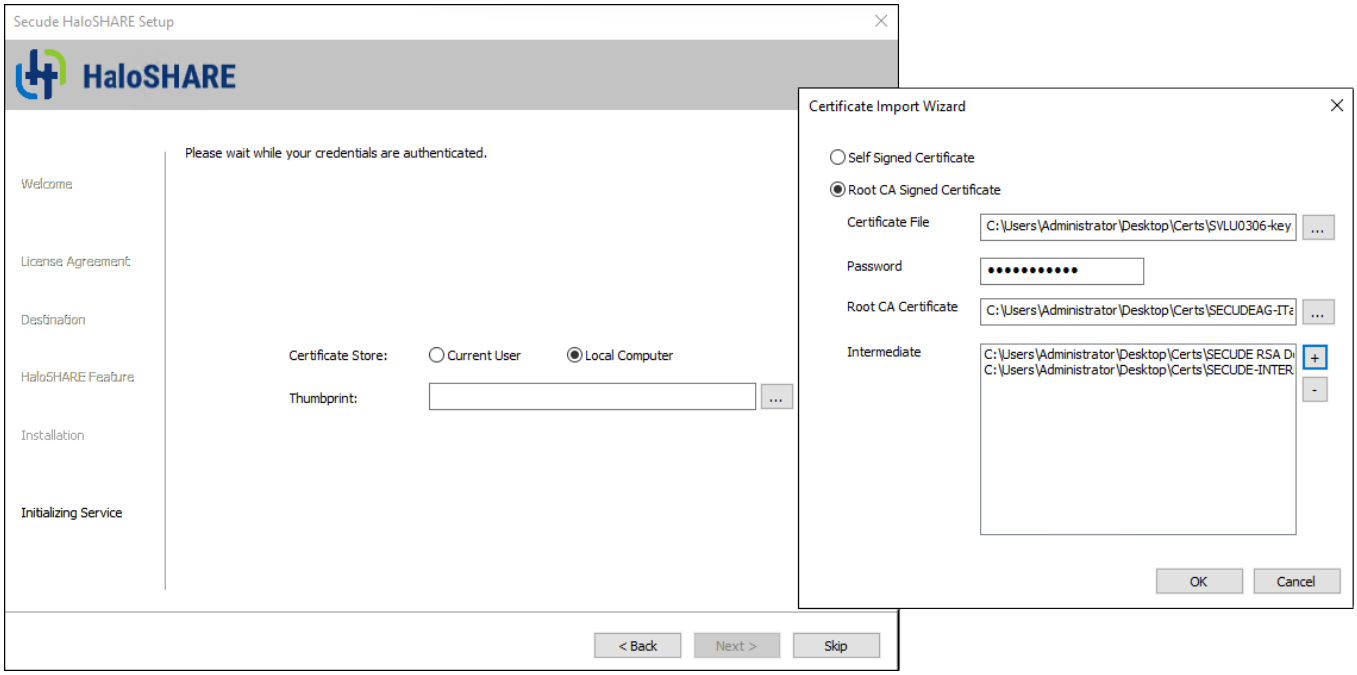
f. **Option 2: Root CA Signed Certificate**—select this option if you have a certificate that is signed by a CA. Click **Browse** button to select the signed certificate. The certificate path will appear in **Certificate File** field. Type its password in **Password** field. To select the Root CA (`.cer` / `.crt`), click **Browse** button in **Root CA Certificate** field. To select the intermediate CA certificates, click **Add** button in **Intermediate CA** field. In case, you want to remove a certificate from the "*Certificate Import Wizard*", click **Delete** button. Click **OK**, the thumbprint will be populated automatically.

g. **Cloud Type**: By default, Commercial will be set. However, based on your Azure subscription and configuration, you can change the cloud type from the list — Commercial / Custom / US_DoD / US_GCC / US_GCC_High / US_Sec / US_Nat / China_01. In the case of **Custom** cloud type, you need to enter the appropriate URLs in **Protection Cloud URL** (for example, `https://api.aadrm.com`) and **Policy Cloud URL** (for example, `https://dataservice.protection.outlook.com`).

h. **Enable Federal Information Processing Standards (FIPS):** If you want to utilize encryption algorithms that comply with FIPS standards, enable this option. By enabling the option, MPIP uses only FIPS-compliant encryption algorithms. If not, MPIP uses standard encryption algorithms. However, FIPS mode can be enabled at any moment using the Administration Manager Tool (`hsadm.exe`). For more details, please refer to the MIP SDK Documentation "MIP SDK FIPS Compliance Statement".

i. Click **Next** and proceed to step 17.

16. If you have chosen **Watermarking**, the following authentication dialog appears.



Watermarking authentication dialog

a. Choose a certificate store: **Current User** or **Local Computer**.

b. If the certificate is already installed, enter the thumbprint manually.

c. If the certificate is not installed, click **Browse** to select the required certificate, as explained in options 1 and 2. Note**:** These fields are similar in **MPIP** option; please refer to the MPIP section above for reference. For the **Watermarking** option, Azure-related details are not required.

17. Once the initialization is complete, a success message appears as shown below.

Initialization completed dialog

18. Click **Close** to complete the installation.

Post-installation checks:

1. You can view the log files at `C:\Users\Username(user running service)\AppData\Local\Secude\HaloSHARE\log`.
2. You can see the configuration information of the HaloSHARE add-on in the registry—`HKEY_LOCAL_MACHINE\SOFTWARE\Secude\HaloSHARE`.
3. A protected policy XML file will be located at `C:\Users\Public\Secude\HaloSHARE`.

6.2. Update from Old to New Version

Prerequisite:

From the installed location, back up the current haloshare_config.enc file. It provides the HaloSHARE configuration properties, which will be essential to retain current settings.

1. Uninstall the current version
2. Install the new version
3. Replace the `haloshare_config.enc` file in the folder where HaloSHARE is installed. The default path is `C:\Program Files\Secude\HaloSHARE`.

What to do next

After installing HaloSHARE, you must configure it to meet your company's requirements. To learn how to do this, please refer to the following chapter.

7. Configuring the HaloSHARE

Using the configuration tool, you can quickly set up the HaloSHARE.

7.1. License Activation

A license for a product is necessary for access to features and support, legal compliance, security, and reliability. The primary Secude licensing method uses a Key-based license that regulates and allows access to the application's features. Therefore, to enable features, we suggest obtaining the license key from Secude support before installing the HaloSHARE.

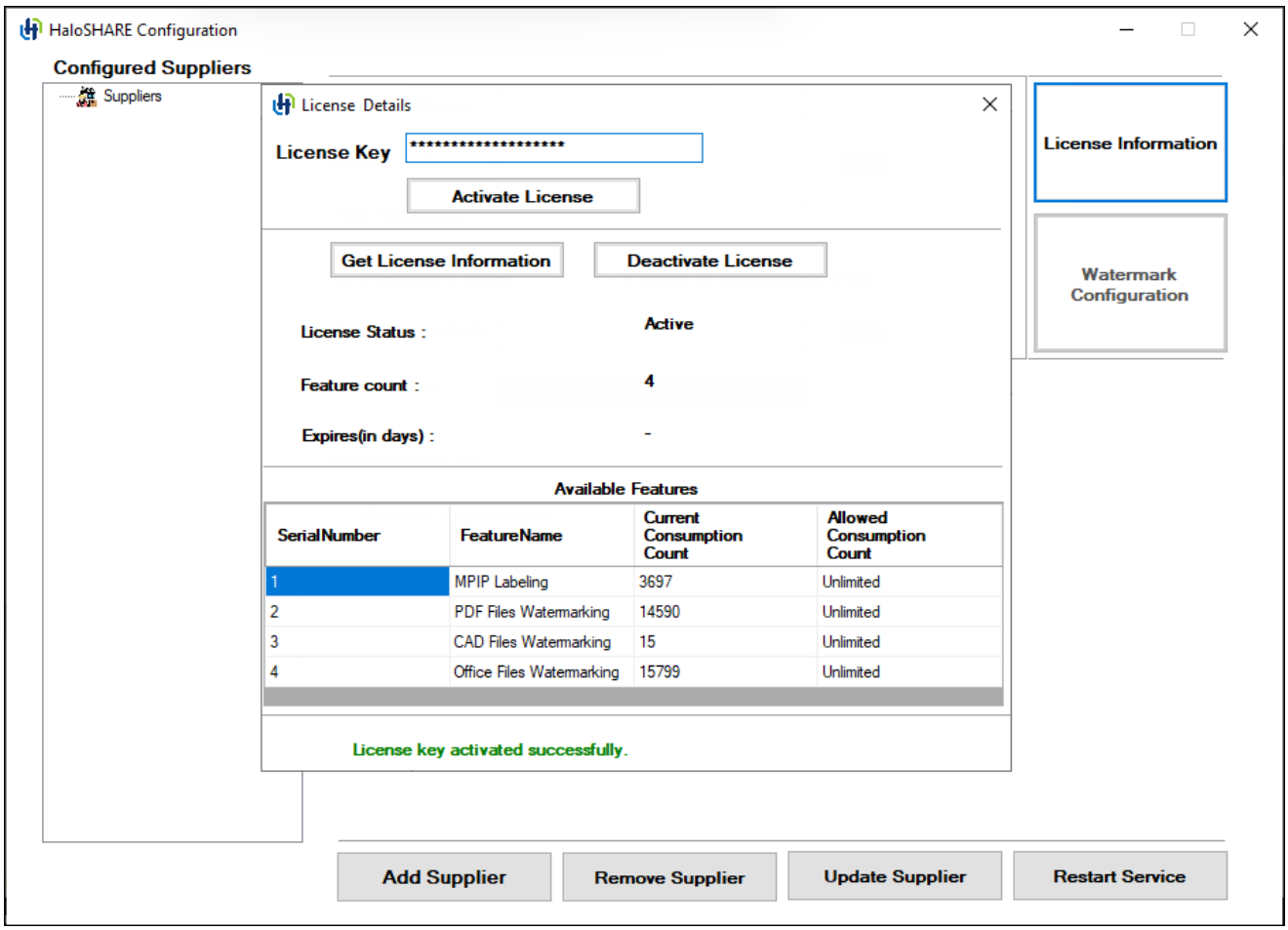
Key-based License

Upon purchase or registration with Secude, a special "license key" is provided to the user to control the use of the application. After installing the service, the administrator must enter the license key, which is an alphanumeric code, in the configuration tool to activate the license. By entering this key, the entire functionality of HaloSHARE is unlocked, and the user's authorization to use it is validated.

> This document does not cover all the specifics of purchasing a license. Please get in touch with Secude's representative for additional details.

To complete the license activation, carry out the following steps:

1. Navigate to the destination folder you specified during installation. The default folder is `C:\Program Files\Secude\HaloSHARE`.
2. Run the program `HaloSHAREConfiguration.exe` with **Run as Administrator** permission.
3. The *HaloSHARE Configuration* screen appears, and on the configuration screen, click **License Information**.
4. The **License Details** screen appears as shown below:



HaloSHARE Configuration screen

5. Enter the license key and click **Activate License**.
6. Please be patient while the license key activation is completed. Depending on your needs, you may have received a license that includes MPIP labeling, PDF watermarking, CAD watermarking, and Office file watermarking. The screen below illustrates having all features enabled.

   Results:

   a. Once the license has been successfully activated, you will receive a confirmation message that includes comprehensive license details. Additionally, you can obtain the information at any time by clicking **Get License Information**.

   b. You will see the enabled feature listed under the **FeatureName** in the activated license.

   c. If the **License Status** is **Active**, it means you entered a valid license key, whereas a **license error** means you entered an incorrect license key.

7. **Related tasks**:

   a. **License Deactivation:** Administrators may deactivate a HaloSHARE license for a variety of reasons, based on your organization's standards and specific scenarios. To do so, click on **Deactivate License**.

b. Please note that a license is deactivated automatically if HaloSHARE is uninstalled.

c. If your license expires, enter a new license and click **Update License**, or activate it using the tool `hsadm.exe`. For more details, refer to the section "Service Configuration using Admin Tool".

7.2. Supplier Configuration

HaloSHARE can encrypt files with either a Static Permission label or a Custom Permission.

Difference between Sensitivity Labels and Custom Permissions

Sensitivity Labels - These labels are maintained by each organization's administrator, who defines the permission set in the Microsoft Purview portal. These are also known as administrator-defined permissions.

Custom Permissions - This is a list of permissions available for user selection in the HaloSHARE application UI. They are also known as user-defined permissions.

7.2.1. Quick Start on Configured Suppliers

The Configured Suppliers pane on the right side of the screen on the configuration tool displays a supplier and the folder path with whom you have shared sensitive business data. For example, if "Prestin Engineering" is a supplier and `C:\Prestin Engineering` is the source path where you store Prestin-related business data internally. Additionally, to share it with Prestin representatives in a shared folder, you would have a destination folder where files are copied from the source folder. You can configure similarly with different source and destination folders for other suppliers, such as "Manifold Dynamics" and "Oriental Construction".

1. File overwriting occurs when the same file is moved repeatedly to the same source folder.
   a. Case 1: Without the **Move to Destination Path** option.

      File Protection: Suppose the source folder is configured with the text file extension and **Move to Destination Path** is not selected. Copy a text file (`sample.txt`) into the source folder; the file is encrypted and named `sample.ptxt`. If you place the same (`sample.txt`) file back into the source folder, the existing `sample.ptxt` is overwritten.

      Watermarking: Suppose the source folder is configured with the PDF file extension and **Move to Destination Path** is not selected. Copy a PDF file into the source folder; the file is watermarked. If you place the same PDF file back into the source folder, the existing file is overwritten.

   b. Case 2: With the **Move to Destination Path** option.

File Protection: When a file is moved to the source folder, it is encrypted and sent to the destination folder. When you place the same file in the source folder, it is treated as a new file, encrypted, and moved to the destination folder. The existing file in the destination folder will be overwritten.

Watermarking: When a file is moved to the source folder, it is watermarked and sent to the destination. When the same file is placed in the source folder, it is treated as a new file, watermarked, and moved to the destination folder. The existing file in the destination folder will be overwritten.

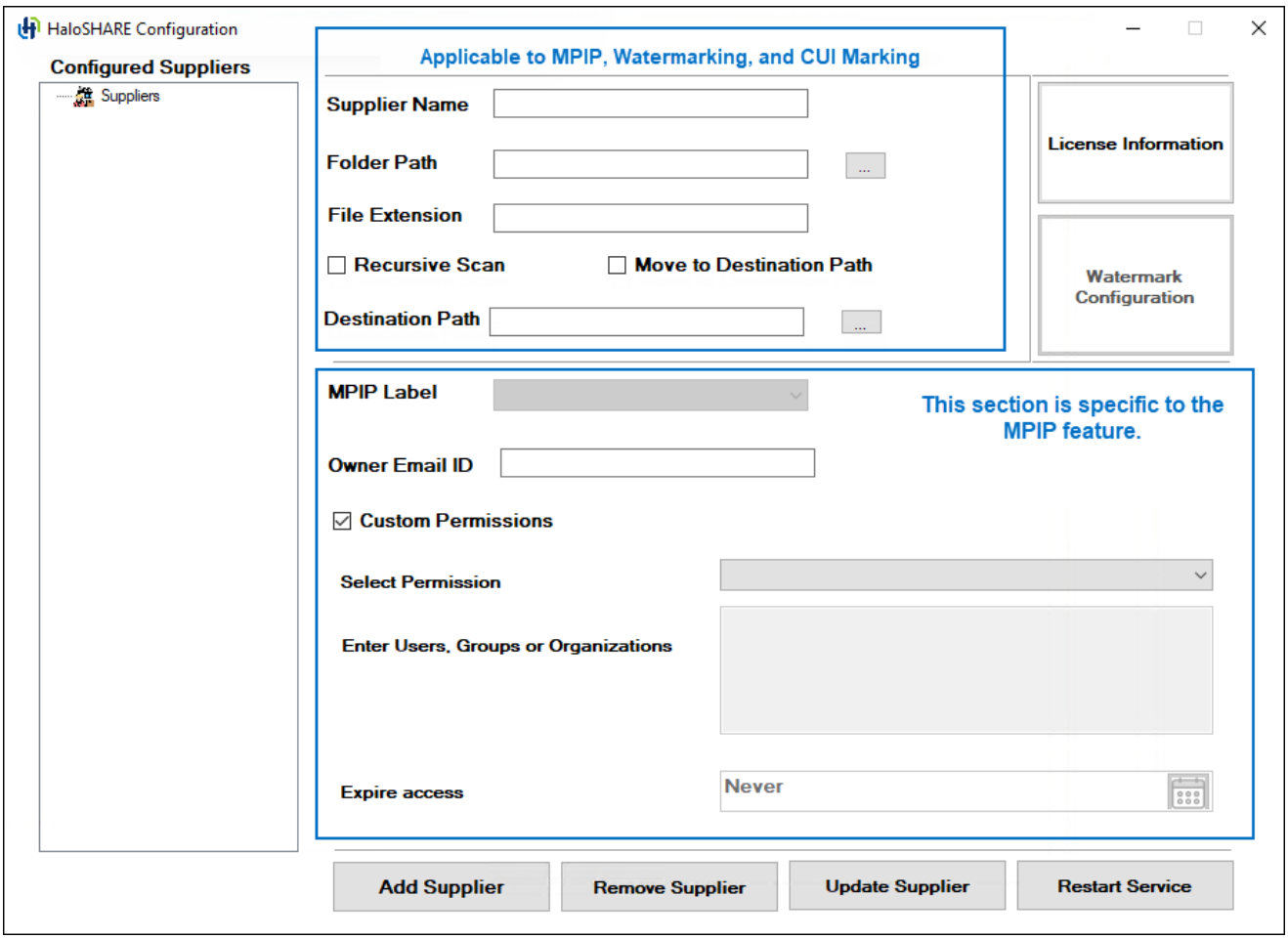
2. It is not allowed to set the same folder or subfolder path for more than one supplier.
3. The OneDrive and HaloSHARE services cannot access the same file simultaneously. Similarly, the HaloSHARE and SharePoint services cannot access the same file at the same time. Attempting such simultaneous access will result in an access violation or access denied error.

7.2.2. How to Configure HaloSHARE

To configure the HaloSHARE service, navigate to the destination folder you specified during installation. The default folder is `C:\Program Files\Secude\HaloSHARE`. Double-click on the `HaloSHAREConfiguration.exe` file, and the **HaloSHARE Configuration** screen appears as shown below.

Configuring Suppliers

1. Enter the following details in the *HaloSHARE Configuration* screen.



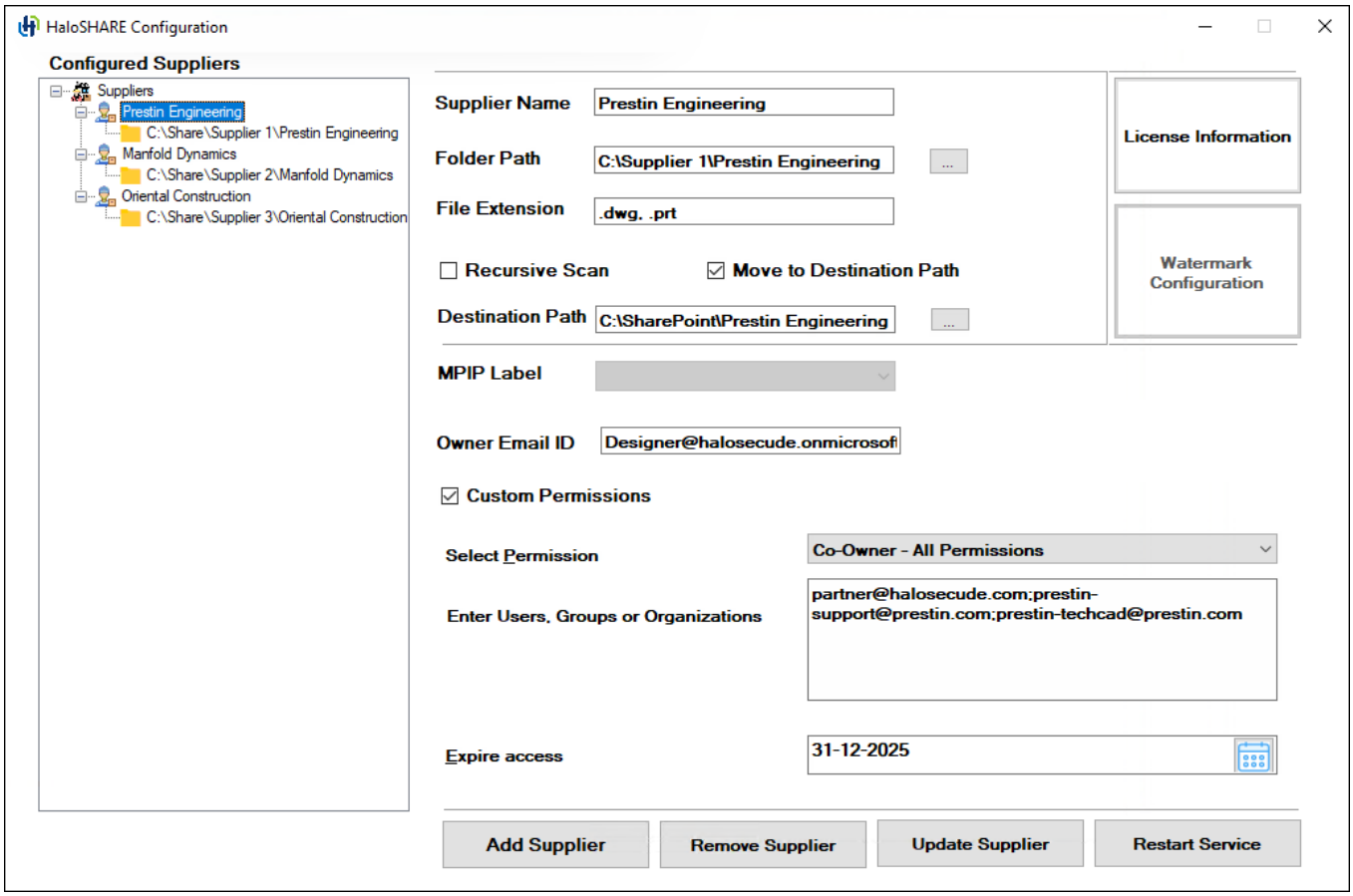
Supplier Configuration fields

2. Enter the supplier's name in the **Supplier Name** box, whose files must be protected. For example, `Prestin Engineering`
3. Click the **Browse** button next to the **Folder Path** to select the source folder that HaloSHARE should monitor. For example, `C:\Supplier 1\Prestin Engineering`
4. Enter the file extension in the **File Extension** box. Based on the file extension you configure, HaloSHARE applies either watermarking, protection, or both, with no impact on the other (unconfigured) files in the source folder. However, if **Move to Destination Path** is selected, both processed and unconfigured files will be moved to the destination folder. For example, `.dwg`, `.prt`.
   a. Note: You can add the asterisk symbol (*) or Creo file formats along with iteration. For example, `.prt.1`.
   b. Please refer to the supported file types under the section "System Requirements" for details on the files that will be included with the asterisk symbol (*).
5. Select **Recursive Scan** to scan all subfolders within the source folder and apply watermarking, protection, or both to the files. If this option is not selected, only files in the source folder are processed.

6. Select the **Move to Destination Path** option to transfer the files (which are either protected, watermarked, or both) from the source folder to the destination folder. The destination folder can be another shared folder where you store files for external access, such as those associated with a supplier, vendor, or external consultant. For example, the destination folder could be a SharePoint or OneDrive folder.
7. Click the **Browse** button next to the **Destination Path** to select the destination folder. HaloSHARE will copy the processed files (protected, watermarked, or both) to this destination folder, which is accessible to the specified supplier. For example, `C:\SharePoint\Prestin`. As a result, the files from **Folder Path** (`C:\Supplier 1\Prestin Engineering`) will be moved to **Destination Path** (`C:\SharePoint\Prestin`).

Configuring File Protection Attributes

Note: If you have only selected the Watermarking feature during installation, the label selection option will be disabled in the configuration screen.



MPIP configuration

1. Select a label from the **MPIP Label** list based on the level of authorization you want to provide the supplier. For example, `HCAD Confidential`. Alternatively, you can select a label with no encryption settings. In this case, you will receive a message "*The selected MPIP label has no encryption settings*

and can only be applied to MIP SDK-supported file types.". If you want to apply such a label, enter the file types that are supported, such as `.txt`, `.docx`, and `.pdf`.

Alternatively, you can use a custom permission label. Please skip to point 3.

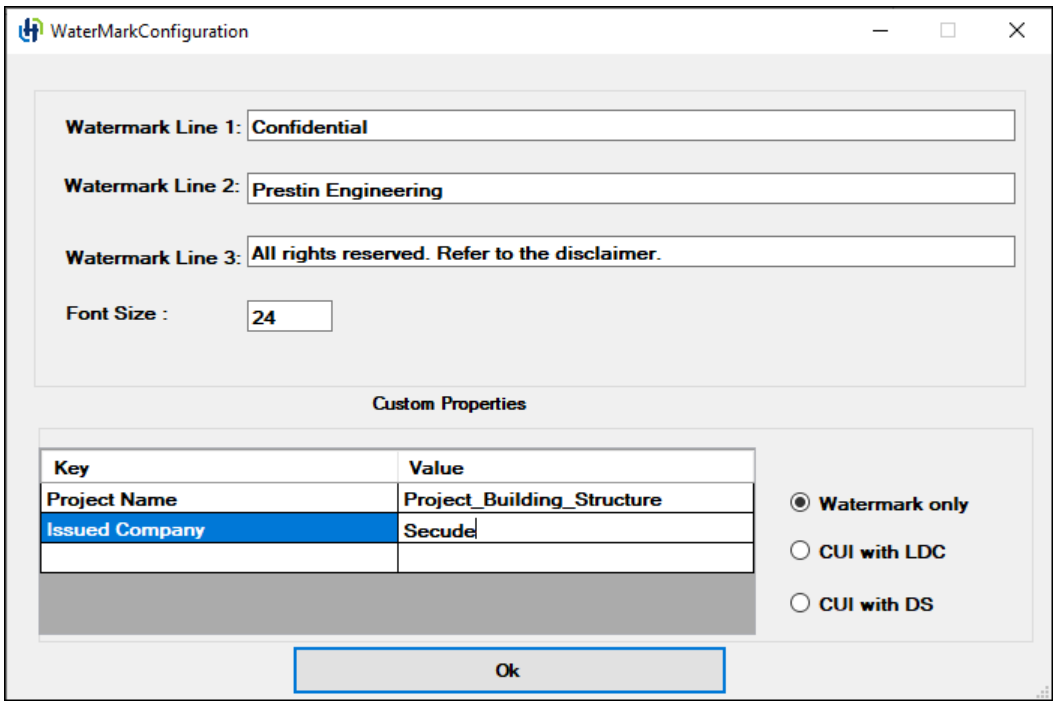
2. If you want to give a user full access to the file, i.e., make a user the owner of the file, enter a user email ID in the **Owner Email ID**. For example, `Designer@halosecude.onmicrosoft.com`
3. Select **Custom Permissions** if you want to set the permission now or if the MPIP label has not yet been defined. The author can assign permission to users, groups, or organizations based on the permission level.
   a. From the **Select Permissions** list, select the level of access you want the users to have when you protect the file (Viewer - View Only / Reviewer - View, Edit / Co-Author - View, Edit, Copy, Print / Co-Owner - All Permissions / Only for me). To know the usage rights of the permissions, please refer to the section "Permissions Level and Usage Rights".
   b. Specify the users who should have permission to access your file in **Enter Users, Groups or Organizations**. Type their full email address, a group email address, or a domain name from the organization for all users in that organization, separated by comma or space, or semicolon. For example `partner@halosecude.com;prestin-support@prestin.com;prestin-techcad@prestin.com`
   c. You can specify how long the labeled file can be accessed in the **Expire access** field. Use the **Never** option if you want the label to never expire and to have unlimited access to the file. It can be used for less sensitive content. Alternatively, for highly sensitive content, select a date on the calendar so that recipients other than the owner cannot access the file after the expiry date.
   d. Click **Add Supplier** and then click **Restart Service**. Repeat the previous steps to add more suppliers.

Configuring Watermarking Attributes

Note: If you have only selected the MPIP feature during installation, the Watermark Configuration option will be disabled in the configuration screen.

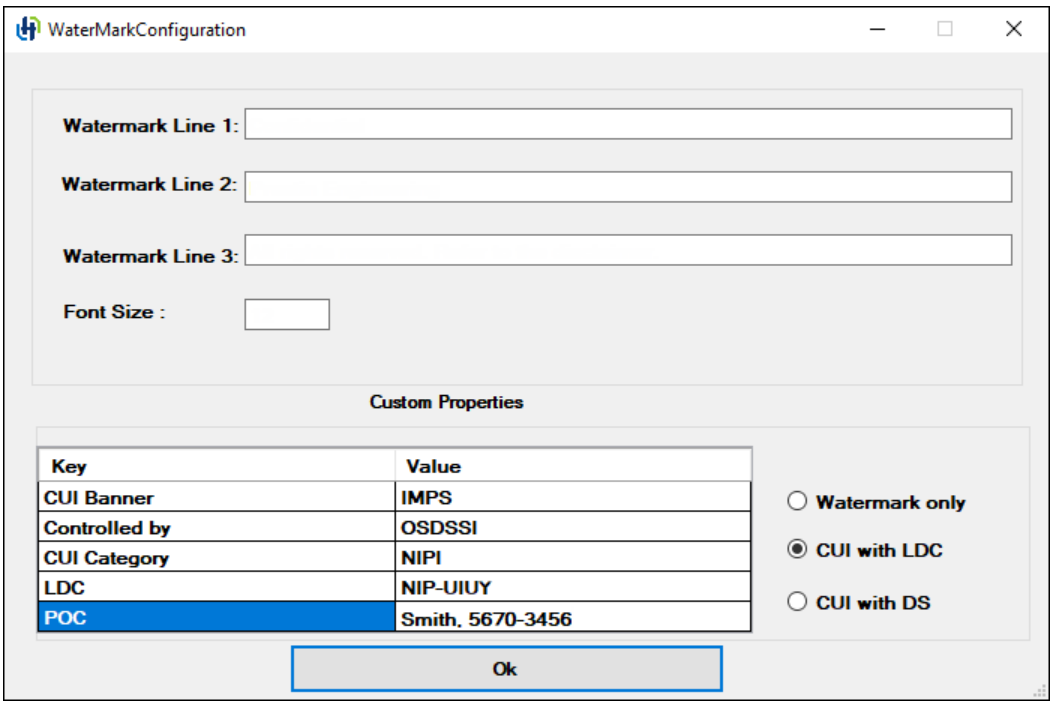
HaloSHARE supports Controlled Unclassified Information (CUI) Marking with the Limited Dissemination Control (LDC) or Distribution Statement options. However, both options cannot be applied simultaneously to the same file. The first page of the document displays the values for the CUI designation indicator block, which are taken from the configuration.

1. To configure watermark text, click **Watermark Configuration** on the *HaloSHARE Configuration* screen.
2. The *WaterMarkConfiguration* screen appears as shown below:



Watermark configuration screen

3. Enter the text to be embedded in the files. By default, the watermark will be applied diagonally. You can type any text suited for the sensitivity level of the document on watermark lines 1, 2, and 3. For example:
   a. **Watermark Line 1**: Confidential
   b. **Watermark Line 2**: Prestin Engineering
   c. **Watermark Line 3**: All rights reserved. Refer to the disclaimer.
   d. **Font Size**: Enter the font size. For example, 20. By default, the font used is Times New Roman.
4. In the **Custom Properties** section, add the elements (metadata) to the table, which will be included in the document's custom properties. You can customize the keys and values based on your business needs.
   a. In the **Key** column, provide key names and specific details about each key in the **Value** column.
   b. For example, in the figure above, key names such as **Project Name** and **Issued Company** are added, along with their corresponding values **Project_Building_Structure** and **Secude**.
   c. To apply only a watermark to the files, select **Watermark Only**.
   d. To apply only CUI, select either **CUI with LDC** or **CUI with DS**, and enter the required **CUI values** in the designated fields.
   e. Optionally, to apply both watermark text and CUI, select either **CUI with LDC** or **CUI with DS**, then enter the required **CUI values** along with the watermark details in the designated fields.



Sample: CUI with LDC configuration

f. To remove the added custom properties, select the row, right-click, and choose **Delete**.

5. Click **OK**.
6. Click **Add Supplier** and then click **Restart Service**. Repeat the previous steps to add more suppliers.

A quick way to create a new supplier

1. To effortlessly duplicate and create a new supplier from an existing supplier, simply select an existing supplier from the node, edit the Supplier Name, Folder Path, Destination Path, and any other variables as needed, and then click Add Supplier. The modifications you made and the current supplier configurations will be added to the new supplier.
2. Clicking the root node, Suppliers in the left pane, resets the configuration screen, allowing you to add new details and create new suppliers.

Results:

1. You will see a confirmation message after the supplier has been successfully added.
2. The name of the supplier will be added to the list on the left pane.
3. The supplier detail can be viewed in the right pane by clicking the supplier name node.
4. You will see a confirmation message after successfully restarting the service.

Related tasks:

1. To remove a supplier from the list, click **Remove Supplier**.
2. If you change the configuration, click **Update Supplier** to make the changes take effect.

3. After making changes, restart the HaloSHARE Service.
4. You can find license and service information in the log `C:\Users\UserName\AppData\Local\Secude\HaloSHARE\log`.

Adjusting the watermark display to the background

To display the watermark in the background instead of the foreground in Excel and PowerPoint, manually add the following registry key, `enable_legacy` with the value `true`. This makes it possible to add or edit content, just like in Microsoft Word, by enabling the watermark to appear in the background.

Name	Type	Data
enable_legacy	REG_SZ	true

Manual addition of the key

What happens to unconfigured file types?
Files that are not specified in the HaloSHARE configuration tool will not be moved to the destination folder. HaloSHARE identifies these unconfigured file types and leaves them untouched.

7.2.3. How to Relabel a File or Modify the Applied Label

A designer may need to relabel files in the supplier folder for various reasons, and in some cases, they may decide to remove protection. To accomplish this, HaloSHARE provides the option to remove protection and relabel features by setting the registry key `enable_relabeling=on`.

1. Files encrypted with MPIP label can be relabeled with Custom Permissions, and vice versa for files encrypted with Custom Permissions.
2. Files encrypted with Custom Permissions can be decrypted using the Remove Protection label.

Prerequisites:

1. Ensure you are the document owner, a user with superuser privileges, or a user with export permissions assigned to an already applied label.
2. Make sure that the API permission for relabeling has been configured in the application. For more information, refer to the section “Additional Permission (Only for Relabeling)”.
3. Enable the relabel feature by changing the registry key `enable_relabeling` from `off` to `on`. For more information, please refer to the section "Registry Settings".

Follow the procedure to relabel.

1. Double-click on the `HaloSHAREConfiguration.exe` file.
2. On the *HaloSHARE Configuration* screen, change the label as needed. Please note that applying the **Remove Protection** label will remove protection.

3. Click **Update Supplier** and then click **Restart Service**.

   Results:

   a. Relabeling: The files in the supplier folder will be updated with the new label.

   b. Removing protection: The files in the supplier folder will be successfully decrypted.

7.3. Service Configuration using Admin Tool

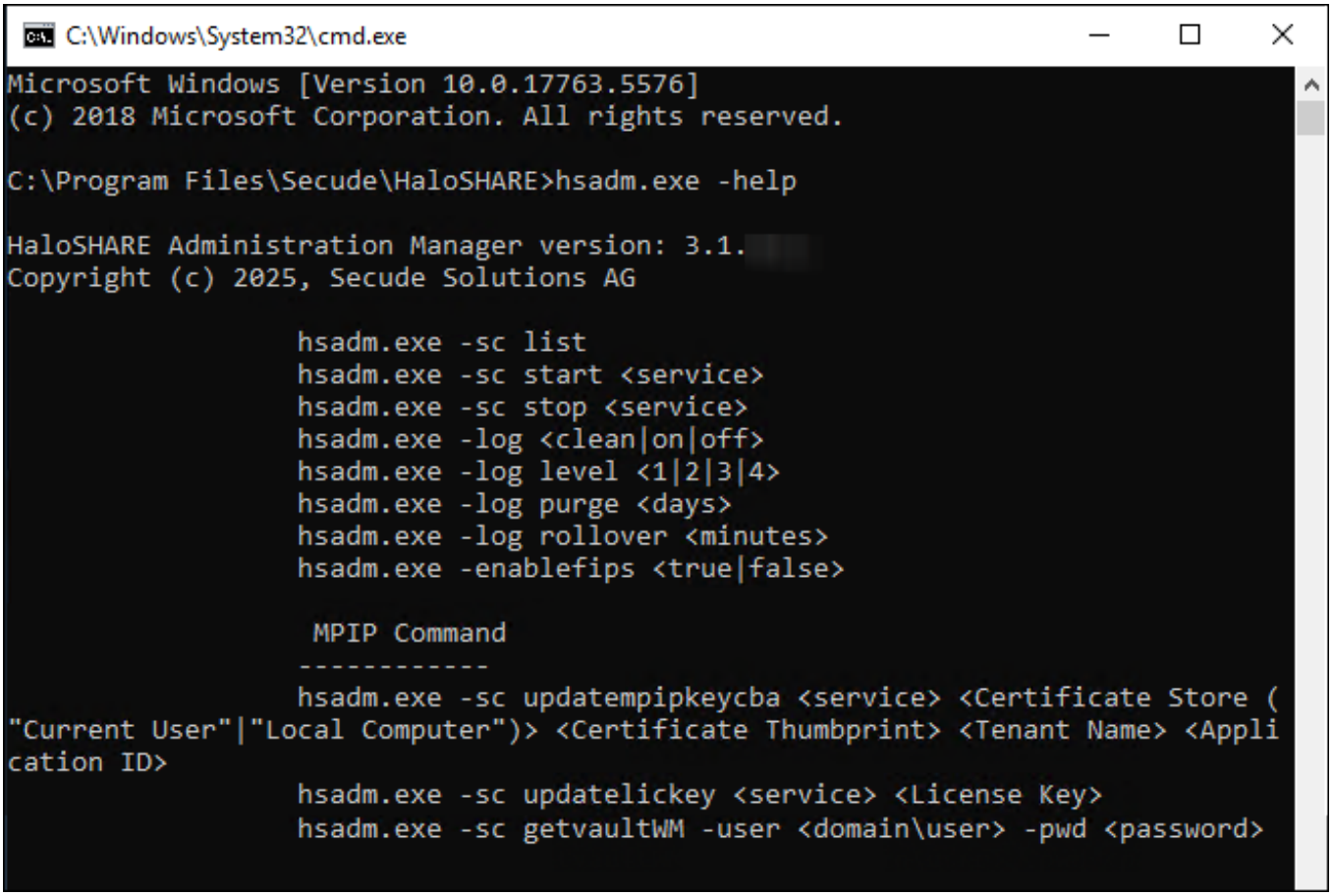
After installing HaloSHARE, you may want to change the configuration. To do so, run the tool `...\Secude\HaloSHARE\hsadm.exe` to view the commands. Please note that the admin tool does not support uppercase.

How to update MPIP labels in HaloSHARE?

If an MPIP label is added, removed, or updated in the Microsoft Purview portal, the administrator should restart the HaloSHARE Service so that the changes will take effect.

When is it necessary to restart the HaloSHARE service?

Whenever you modify the HaloSHARE registry settings, you need to restart the HaloSHARE Service.



hsadm.exe commands

Service Control Commands

`hsadm.exe -sc list`
 	
Use this command to view the service.
 	
Output
 	
For a Domain User
 	
`Display Name: Secude HaloSHARE`
`Service Name: HaloSHARE`
`Domain: HC.test`
`User Name: HC.test\administrator`
`Service Mode: MPIP`
 	
For a Non-Domain local user:
 	
`Display Name: Secude HaloSHARE`
`Service Name: HaloSHARE`
`Domain: .`
`User Name: .\superdocs`
`Service Mode: MPIP`

`hsadm.exe -sc start <service>`
 	
Use this command to start HaloSHARE. Note: This can be used only after setting user credentials to run HaloSHARE.
 	
For example,
 	
`hsadm.exe -sc start HaloSHARE`
 	
Output
 	
`Service Started successfully.`

`hsadm.exe -sc stop <service>`
 	
Use this command to stop the HaloSHARE.
 	
For example,
 	
`hsadm.exe -sc stop HaloSHARE`
 	
Output
 	
`Service Stopped successfully.`

Log Command

`hsadm.exe -log <clean|on|off>`
1. clean: removes all files from the logging directory.
2. on: enables the service logging.
3. off: disables the service logging.
For example,
`hsadm.exe -log on`
Output
`Current log enabled, level = 3.`
`INFO,Log already on.`
`C:\Users\Administrator\AppData\Local\Secude\HaloSHARE\log\`

`hsadm.exe -log level <1|2|3|4>`
1. Log level: 1: Error and Info
2. Log level: 2: Error, Warning, and Info
3. Log level: 3: Error, Warning, and Info
4. Log level: 4: Error, Warning, Info, and Debug
For example,
`hsadm.exe -log level 4`
Output
`Current log enabled, level = 3.`
`INFO,Logging enabled, level = 4.`

`hsadm.exe -log purge <days>`
Use this command to set a time for log purging, i.e., the no. of day(s) by which the logs will be deleted.
For example,
`hsadm.exe -log purge 2`
Output
`Current log enabled, level = 4.`
`INFO,Log files purge set to 2 day(s).`

```
hsadm.exe -log rollover <minutes>
```

Use this command to set a log rollover time, i.e., the minute(s) by which a new log file will be generated.

For example,

```
hsadm.exe -log rollover 60
```

Output

```
Current log enabled, level = 4.

INFO,Log files rollover set to 60 minute(s).
```

MPIP Commands

Update MPIP Certificate

```
hsadm.exe -sc updatempipkeycba <service> <Certificate Store ("Current User"|"Local Computer")> <Certificate Thumbprint> <Tenant Name> <Application ID>
```

Use this command to update the new MPIP CBA (Certificate-Based Authentication) Keys.

For example,

```
hsadm.exe -sc updatempipkeycba HaloSHARE "Current User" 6e9685132e2e86d1b0af75a848fcc7c0ec29839b halosecude.onmicrosoft.com u8352197-65e0-4fd2-9efb-b90027b801fb
```

Output

```
Policy XML file fetched successfully.

MPIP key updated successfully.
```

Update MPIP License Key

```
hsadm.exe -sc updatelickey <service> <License Key>
```

Use this command to update the License Key

For example,

```
hsadm.exe -sc updatelickey HaloSHARE B27N-CMTO-LWGH-AKEQ
```

Output

Spring License Key updated successfully

Display MPIP key

```
hsadm.exe -sc getvault -user <domain\user> -pwd <password>
```

Use this command to know your MPIP key information.

For example,

```
hsadm.exe -sc getvault -user .\administrator -pwd #9y->\"raQ8<
```

Output

```
Application ID: u8352197-65e0-4fd2-9efb-b90027b801fb

Tenant ID/Name: halosecude.onmicrosoft.com

Certificate Store: LocalComputer

Certificate Thumbprint: 6e9685132e2e86d1b0af75a848fcc7c0ec29839b

License Spring Key: B27N-CMTO-LWGH-AKEQ
```

```
hsadm.exe -enablefips <true|false>
```

Use this command to enable/disable the FIPS mode.

For example,

```
hsadm.exe -enablefips true
```

Output

```
Enabling FIPS module started.

Service Stopped successfully.

Extracting fips module files done.

Trying to Install fips modules for this pc.

fips modules configuration generated for this pc successfully.

Service Started successfully.
```

Watermark details

Display Watermark key

```
hsadm.exe -sc getvaultWM -user <domain\user> -pwd <password>
```

Use this command to get your watermark licensing key information.

For example,

```
hsadm.exe -sc getvaultWM -user .\administrator -pwd #9y->\"raQ8<
```

Output

```
Certificate Store: LocalComputer

Certificate Thumbprint: 6e9685132e2e86d1b0af75a848fcc7c0ec29839b

License Spring Key: B37N-CSUO-LWIJ-AKBS
```

Help Commands

7.4. Registry Settings

The following section explains how the registry is used to store service settings. To modify the registry value, open Registry Editor, navigate to this path `Registry Root Directory = HKEY_LOCAL_MACHINE\SOFTWARE\Secude\HaloSHARE`, and modify the Reg Key as you want. Any changes to the registry will require a restart of HaloSHARE to take effect.

Name	Default value	Type	Description
dir_common	`common`	REG_SZ	The path to the directory where all the dependent DLL files are stored for the execution of HaloSHARE.
dir_log	`log`	REG_SZ	Log files are generated in the service running user's local profile, i.e., in the following location `%LOCALAPPDATA%\Secude\HaloSHARE\log`.
dir_tmp	`tmp`	REG_SZ	It stores the temporary files located at `%LOCALAPPDATA%\Secude\HaloSHARE\tmp`.
dir_vendor	`C:\Program Files\Secude\`	REG_SZ	This is Secude's vendor directory under which Secude's components will get installed. For example, `HaloSHARE`.
enable_fips	`false`	REG_SZ	1. true: By selecting this option, MPIP only uses FIPS-compliant encryption algorithms. 2. false: MPIP uses standard encryption algorithms.
enable_relabeling	`off`	REG_SZ	Defines the status of the relabeling. • on = Relabel feature is enabled to change the applied label or remove the label to decrypt the file. • off = Relabel feature is disabled.
haloshare_config_file	`haloshare_config.enc`	REG_SZ	Name of the configuration file that includes information about the folders and other essential parameters.
log_enable	`on`	REG_SZ	Defines the status of the log. • On = A Log file will be generated in the default location • Off = Log file will not be generated

Name	Default value	Type	Description
			• Clean = Log files will be deleted. This parameter deletes only the logs and does not modify the log_enable to "Clean" from "on/off".
log_level	3	REG_SZ	• Log level: 1: Error and Info • Log level: 2: Error, Warning, and Info • Log level: 3: Error, Warning, and Info • Log level: 4: Error, Warning, Info, and Debug
log_purge	7	REG_SZ	It indicates removing files older than a defined time frame. By default, the log files older than 7 days will be deleted.
log_rollover	100	REG_SZ	Defines the log rollover time, i.e., a new log file will be generated based on the specified minute(s). By default, a new log file will be generated every 100 minutes.
ls_proxy		REG_SZ	Allows you to use a proxy server to access Secude's License Manager. This is an optional feature that must be utilized only if your firewall is blocking License Manager. Enter proxy server settings in the format `<URL>:<PORT>`. For example, `http://10.41.0.130:808`. Please make sure to restart the service.
scan_wait_time	5	REG_SZ	It indicates the service's waiting time and begins scanning after 5 seconds if the folder has not been modified.
version		REG_SZ	The version number of the installed service.

Configuration in the Registry

7.5. Configuring Endpoint

`Registry path of endpoint = HKEY_LOCAL_MACHINE\SOFTWARE\Secude\HaloSHARE\ep\HaloSHARE`

Name	Default value	Type	Description
block_pii	`false`	REG_SZ	Enable or disable the visibility of Personally Identifiable Information (PII) in the MIP SDK logs. The MIP SDK logs are located at`%LOCALAPPDATA%\Secude\HaloSHARE Service\log\mip_cache_storage\mip\logs\mip_sdk.miplog`. • 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	1	REG_SZ	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.
cacheuserlicense	1	REG_SZ	• 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.
cloudtype		REG_SZ	User's Azure Cloud Type. For example: Commercial.
credential		REG_SZ	Domain or computer name, name of the user under which the HaloSHARE service runs
databoundary	Default	REG_SZ	Audit and telemetry events are sent to the nearest collector, where these events are stored and processed. Other options:

Name	Default value	Type	Description
			1. Asia 2. Europe_MiddleEast_Africa 3. European_Union 4. North_America For example, if your AIP administrator sets North_America, the HaloSHARE service forces all telemetry and audit data to go directly to North America.
domain		REG_SZ	Name of the domain.
enabledke	0	REG_SZ	Double Key Encryption • 0—(default value) - disables the DKE functionality in the HaloSHARE service. • 1—(On) - Enables the DKE functionality in the HaloSHARE service. Please be aware that DKE labels are only visible when DKE functionality is enabled.
enablefile tracking	0	REG_SZ	Obtain the protected file's content ID to track the file. • 0 (default value)—the content ID does not get extracted for the use of File Tracking. • 1—the content ID will be extracted for the use of File Tracking.
IterationLimit	10	REG_SZ	Iteration limit for Creo file types. The default value is 10, however, you can modify and set your limit. Example: `test.prt.1`, `test.asm.2`
MIPAuthType		REG_SZ	Type of authentication method. MSALCBA for MPIP mode.
mode		REG_SZ	Type of HaloSHARE features. MPIP, Watermarking, or Combined.
policycloudurl		REG_SZ	Policy Cloud URL. For example: `https://dataservice.protection.outlook.com`
protection cloudurl		REG_SZ	Protection Cloud URL. For example: `https://api.aadrm.com`

Name	Default value	Type	Description
service	`HaloSHARE`	REG_SZ	Name of the service. By default, it is HaloSHARE.
streambuffersize	`10`	REG_SZ	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 10 MB.

Configuring Endpoint

Proxy Configuration

Many enterprises enforce a **Group Policy Objects** (GPO) that requires all outbound internet traffic routed through a proxy server. These proxy settings need to be used by both the MIP SDK and the MSAL library for MPIP authentication and functionalities. To use proxy settings for the MSAL library, we need to set the `msal_proxy_address` in `HKEY_LOCAL_MACHINE\SOFTWARE\Secude\HaloSHARE`.

Name	Type	Data
msal_proxy_address	REG_SZ	`<http://IP Address>`

Configuring MSAL proxy

If the above does not work for service-running users, in such cases, set the registry keys `ProxyServer` and `ProxyEnable` in `HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Internet Settings`.

Name	Type	Data
ProxyServer	REG_SZ	`<http://IP Address>`
ProxyEnable	REG_SZ	• 1 to enable. • 0 to disable.

Configuring proxy

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 190.160.166.191:168`

In this case, the proxy server that has been set up with 190.160.166.191:168. Once this command is executed successfully, the registry is updated with the proxy server URL, and the HaloSHARE Service ensures that the configured proxy settings are applied.

7.6. How to Access Protected Files

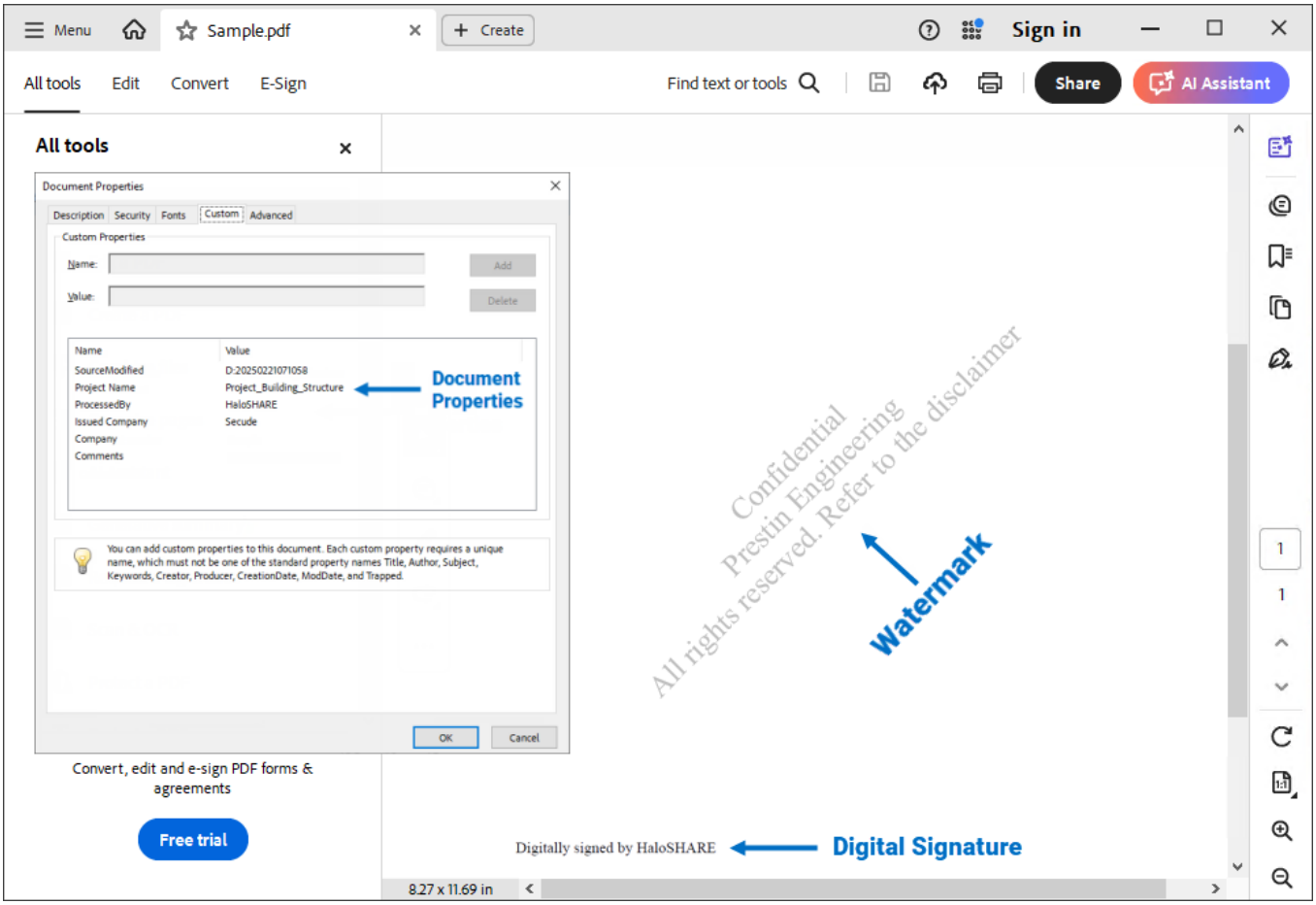
After setting HaloSHARE in your environment, you may start sharing business files in folders. Once the files have been protected, you should know how to open MPIP-protected files with HaloCAD Add-ons. For information on how to open a protected file, refer to the corresponding HaloCAD Add-on documentation.

7.7. Opening a HaloSHARE-watermarked Files

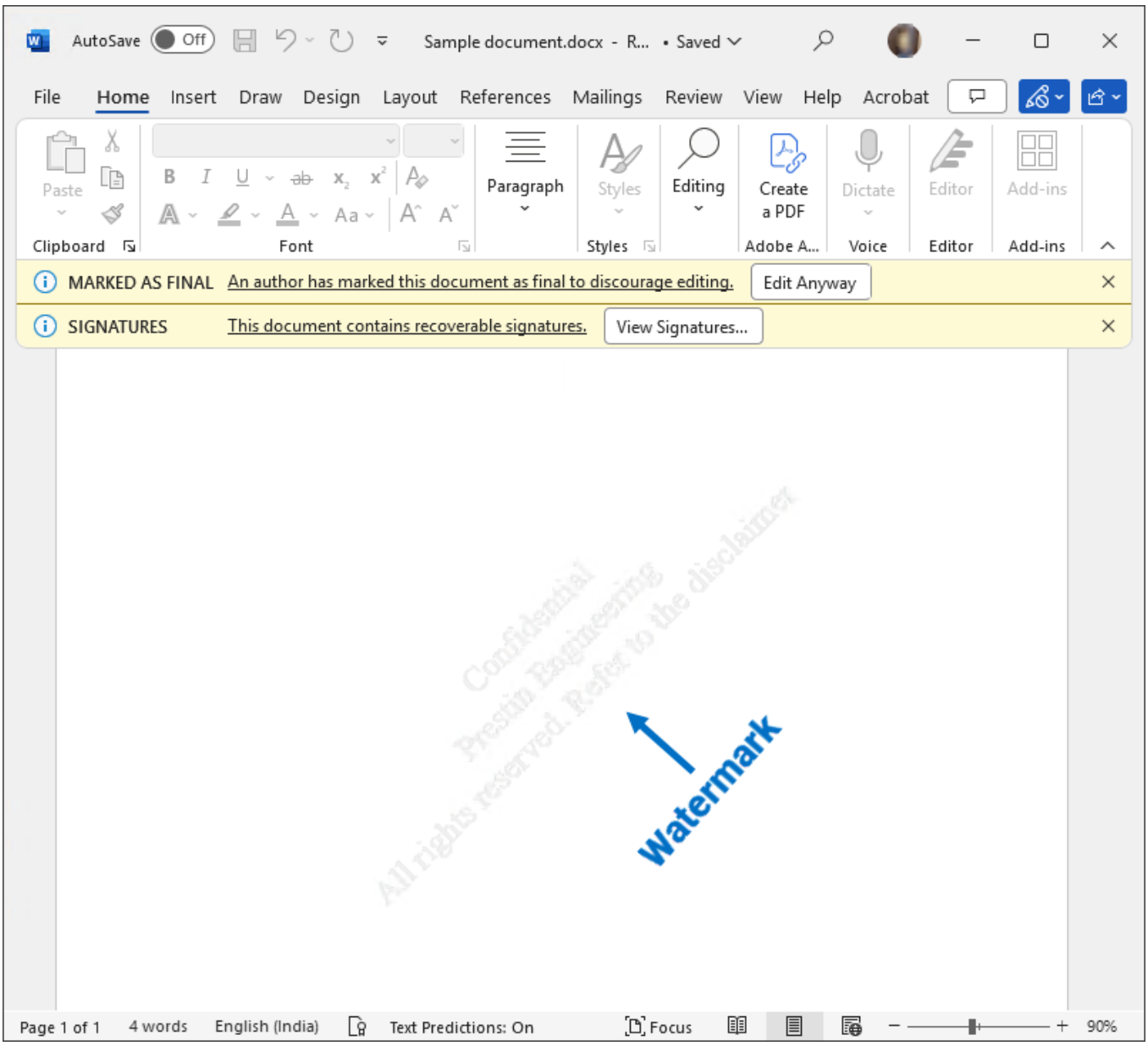
To view the HaloSHARE watermarked CAD files, the HaloCAD Add-on for the CAD application is required. For information on how to view a HaloSHARE watermarked CAD file, refer to the HaloCAD Add-on documentation.

Viewing Watermark metadata in CAD files:

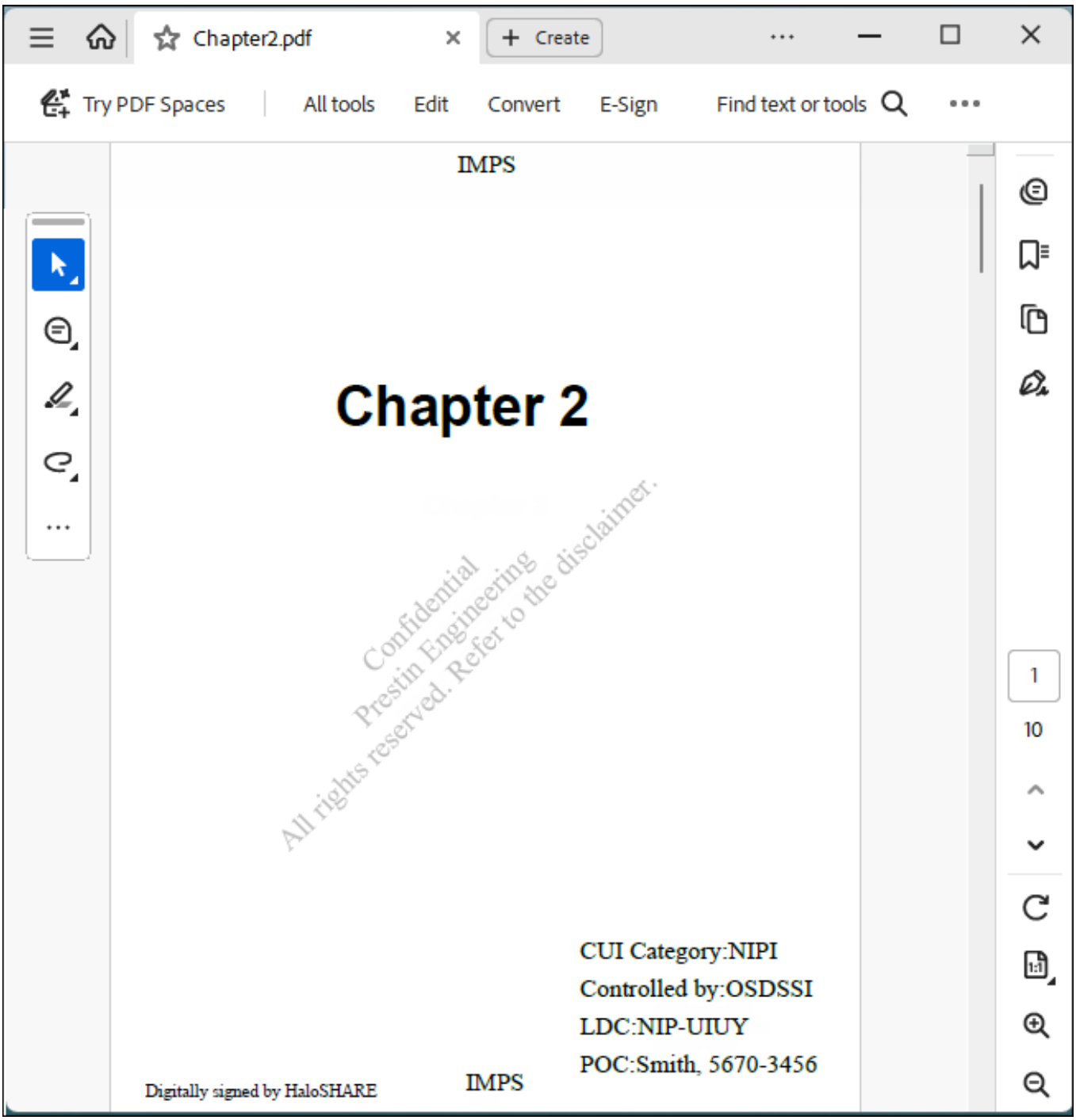
1. **RVT:** Install the **RevitLookup** tool to view the metadata. For more details, please refer to "Watermark in RevitLookup".
2. **DWG:** Go to the file's Custom Properties to view the metadata.
3. **IFC:** Open the file in any text editor, and scroll to the end to view the metadata.



HaloSHARE-watermarked PDF file



HaloSHARE-watermarked Word file



HaloSHARE-watermarked PDF file with CUI marking

8. Troubleshooting

This page will help you overcome the most common problems that may occur during the installation and configuration of the HaloSHARE, as listed below.

8.1. Installation Interrupted due to Improper Configuration

Symptom

Error message: "*Failed to get thumbprint. Please check whether correct certificate file or correct password is given.*"

Background

The error message given above appears while installing the HaloSHARE.

Probable Cause

The Root CA Signed Certificate password that you are attempting to import into the Certificate Store is incorrect.

Recommended Action

Verify and enter the correct certificate password.

8.2. Installation Interrupted due to Certificate

Symptom

Error message: "*Please check the certificate details and verify the certificate is installed properly.*"

Background

HaloSHARE installation in MPIP results in the error message shown above.

Probable Cause

The certificate that you installed in the Certificate Store (Current User or Local Computer) has expired.

Recommended Action

1. Verify the certificate using the Microsoft Management Console (MMC) snap-in.
   a. If the certificate is invalid, add a new certificate.
   b. If you proceed to install HaloSHARE at this point, you will receive the following message "*Please check the certificate validity and details, Verify the certificate is installed properly and configured in the Azure portal.*"
2. Make sure that the same certificate is updated on the Azure portal (under the **Certificate** section > click **Upload certificate**).
3. Continue with the installation now.

8.3. HaloSHARE Service fails to Start

Symptom

The error appears as "*Process finished with error. Please check logs for more details*."

The HaloSHARE Service log shows the following error.

```
Cannot establish access to the shared memory [Global\0150B81D-A6E6-4EFD-B1FA-97172AD05C44HCS].

(hr = 0x80070005)

Access is denied.
```

Background

The error messages mentioned above appear while initializing the HaloSHARE Service.

Recommended Action

Add the following registry key `ipc_enable_file` in `HKEY_LOCAL_MACHINE\SOFTWARE\Secude\HaloSHARE` and reinitialize the service.

Name	Type	Data
ipc_enable_file	REG_SZ	on

Configuring registry entry

9. Customer Support and Feedback

Please be ready with the below-listed information before contacting our team to help you with the issue you are experiencing. The data that you provide will help us to serve you better.

1. Full contact details.
2. HaloSHARE build version.
3. Date, time, and description of the error (if possible, provide screenshots).
4. What (if any) third-party products (software or other) were used in conjunction with our product?
5. Any other information necessary to reproduce the error.

Secude offers help and support through

1. Technical support email: support@secude.com
   If you choose the email option to contact us, please provide your company details with a detailed description of the issue and attach the log file (if any). Our representative will respond to your email inquiry.
2. Phone support: Call +41 41 510 70 70 to talk to our representative to diagnose and resolve the technical problem.

Other resources

Please visit https://secude.com to know about upcoming events, press releases, and to download whitepapers.

9.1. Documentation Feedback

Secude understands the importance of technical content when attempting to gain product knowledge and strives to continuously improve product documentation to ensure that users receive the information they want. To provide feedback on the documentation, please send an email to documentation@secude.com. Please include the following details in your feedback:

1. Product name and version
2. Documentation topic
3. Details of the suggestion or error

The technical documentation team will consider your feedback and address it in future documentation updates.

10. Appendix

This section provides supplemental information.

10.1. 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 HaloSHARE are shown in the table below.

Library	Version	Source Code	License Link
Boost Library	1.85.0	https://archives.boost.io/release/1.85.0/source/	https://www.boost.org/LICENSE_1_0.txt
Protobuf Library	5.26.1	https://github.com/protocolbuffers/protobuf/releases/tag/v21.2	https://github.com/protocolbuffers/protobuf/blob/master/LICENSE
WTL	9.0	https://github.com/wxWidgets/wxWidgets	https://en.wikipedia.org/wiki/Common_Public_License
Rapidxml	1.13	https://sourceforge.net/projects/rapidxml/files/latest/download	http://rapidxml.sourceforge.net/license.txt
MIP SDK	1.17.158	https://learn.microsoft.com/en-us/information-protection/develop/version-release-history	https://docs.microsoft.com/en-us/information-protection/develop/
Licensespring	7.40	-	-
OpenSSL	3.2	https://github.com/openssl	https://github.com/openssl/openssl/blob/master/LICENSE.txt
MSAL	4.73.1	https://github.com/AzureAD/microsoft-authentication-library-for-dotnet	https://github.com/AzureAD/microsoft-authentication-library-for-dotnet/blob/master/LICENSE
PDFSharp	6.2.0	https://github.com/empira/PDFsharp	https://github.com/empira/PDFsharp?tab=License-1-ov-file#readme

Library	Version	Source Code	License Link
Closed XML	0.105.0	https://github.com/ClosedXML/ClosedXML	https://github.com/ClosedXML/ClosedXML?tab=MIT-1-ov-file#readme
Open XML SDK	3.2.0, 3.1.1	https://github.com/dotnet/Open-XML-SDK	https://github.com/dotnet/Open-XML-SDK?tab=MIT-1-ov-file#readme
ShapeCrawler	0.59.0 all MIT license	https://github.com/ShapeCrawler/ShapeCrawler	https://github.com/ShapeCrawler/ShapeCrawler?tab=MIT-1-ov-file#readme

Third-party libraries

10.2. Permissions Level and Usage Rights

10.2.1. Basic Permissions

The following table lists the basic permissions and the usage rights that they contain:

S.No	Permission Level	Usage Rights (Allowed Recipient Actions)
1	View	Open and read the data (also known as “Read-only”). It includes Zoom and view from different angles (for CAD file types).
2	Edit	Edit the file and save it
3	Copy	Extract data (including screen captures) from the file into the same or another file.
4	Print	Print the content
5	Export	Save the content to a different filename (Save As). Also includes “Export to PDF”.
6	Change Rights	Changing the label that is applied to a file includes removing protection and saving it as an unprotected file.
7	Owner (Full Control rights)	Grants all rights to the file and all available actions can be performed. And includes the permissions below: 1. Remove protection 2. Relabel a file

Basic Permissions

Author (creator) of a file

The author of a file has all the rights and actions mentioned in the above table. Also includes the following permissions:

1. Open file after the expiry date
2. Revoke access

10.2.2. Custom Permissions

The following table lists the custom permissions and the usage rights that they contain:

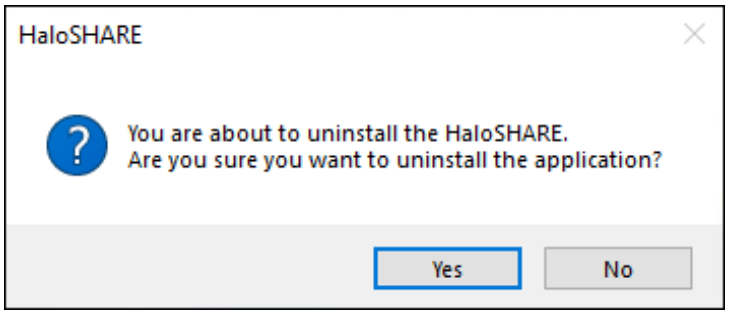
S.No	Permission Level	Usage Rights (Allowed Recipient Actions)
1	Viewer	Open and read the data (also known as “Read-only”). It includes Zoom and view from different angles.
2	Reviewer	Viewer’s allowed permissions plus: 1. Edit 2. Save the file
3	Co-Author	Reviewer’s allowed permissions plus: 1. Print 2. Extract data (including screen captures) from the file into the same or another file.
4	Co-Owner	Co-Author’s allowed permissions plus: 1. Export 2. Change Rights
5	Only for me	Grants all rights to the file and all available actions can be performed only by the author of the file.

Custom Permissions

10.3. Uninstallation

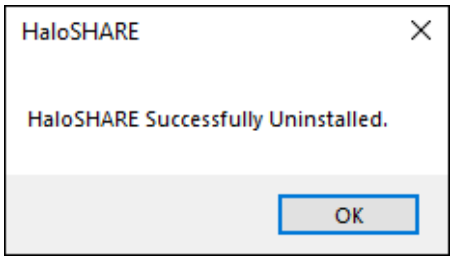
When you no longer use the service, you may uninstall the application. Uninstalling removes all files and registry settings that were added to your computer during the initial installation.

1. Click **Start** menu > go to **Control Panel** > **Programs** > **Programs and Features** > **Uninstall a Program** > select **HaloSHARE** from the list > right-click and select **Uninstall** option.
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 you get this security warning, click the **Yes** button to confirm that you want to uninstall the application.
3. The following confirmation message appears.



Uninstall message #1

4. Click **Yes** to confirm that you want to remove it from the computer.
5. The service is uninstalled successfully. Click **OK** to close the dialog.



Uninstall message #2

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Secude

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About Secude

Secude, a trusted Microsoft and Siemens Digital Industries Software partner, is a global leader in Zero Trust data protection and data governance.

Our solutions extend Microsoft Purview Information Protection (MPIP) to secure sensitive files—including CAD and PLM assets—from the moment of creation. By embedding persistent protection and access controls directly into design and engineering data, we help enterprises prevent Intellectual Property (IP) theft, data leakage, reputational damage, and compliance risks. With operations in Europe, North America, and Asia, Secude supports global manufacturers, defense contractors, and AEC firms in implementing robust IT security strategies across the product lifecycle and digital supply chain.