Plant Applications Universal Client Installation Guide

Version 7.0 SP5.

Contents

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Chapter

1

Installation Overview

Topics:

Installation Overview

The following table outlines the steps that you must perform to install and configure Plant Applications Universal Client for the first time. You must complete these tasks in the order in which they are listed.

Note: To upgrade your Plant Applications Universal Client, you can skip these tasks and refer to the topic Upgrade the Plant Applications Universal Client on page 33.

Step	Task	Notes
1	Review preinstallation requirements.	This step is required to verify whether your computer supports the minimum hardware and software specifications necessary to install the Plant Applications Universal Client.
2	Install the Plant Applications Universal Client.	This step is required to install the Plant Applications Universal Client.
3	Perform post-installation tasks.	This step is required to perform post-installation tasks based on your requirements.

To troubleshoot any issues during the installation or upgrade process, refer to the Troubleshooting section in this guide.

Chapter

2

Preinstallation Requirements

Topics:

-

About Preinstallation Requirements

Review the following preinstallation requirements before you run the Plant Applications Universal Client installer:

- System requirements
- Port requirements
- Software requirements
- GE Proficy Historian Server security settings requirements
- Plant Applications Server Requirements
- Plant Applications Message Bridge Requirements

System Requirements

Ensure that your computer meets the system requirements as described in the following table. For more information, refer to the System Requirements section in the *Plant Applications Important Product Information* document for the latest Plant Applications release.

Item	Version
Historian	GE Proficy Historian 7.0 SP5 or SP6
Web browsers	Chrome 65.0 or later
Operating system	64-bit Windows 7, Windows 10, Windows Server 2012, Windows Server 2016
Framework	Microsoft® .NET Framework 4.5 or later
SQL server	SQL server 2012, 2014, or 2016 (64-bit)
	Note: Ensure that you have configured the SQL server database as the Plant Applications database. For more information, refer to the *Plant Applications Getting Started Guide* for the latest release.
Hard drive	80 GB (minimum)
Processor	2.4 GHz clock-speed Intel Core i3, i5, or i7 CPU or equivalent AMD Phenom CPU with 16 GB RAM
Memory	16 GB (recommended)

Port Requirements

Ensure that the ports described in the following table are opened before you install Plant Applications Universal Client.

Port	Description
5672	The default port for the RabbitMQ Message bridge required to communicate with the Plant Applications server for retrieving data updates.
8443	The default port for the GE Proficy Historian Server used as the User Account and Authentication (UAA) server.
8444	The default port for the Tomcat server.
5433	The default port for the PostgreSQL server.
1433	The default port for the Microsoft SQL server.

Software Requirements

The installer identifies all available and missing software packages required before installing the Plant Applications Universal Client.

You must install the following software packages before you run the installer:

- Java (JRE) version update 92 or later
- Microsoft OLE DB Driver 18 for SQL Server

    Note: You can download the Microsoft OLE DB Driver 18 for SQL Server from the following URL: https://www.microsoft.com/en-us/download/details.aspx?id=56730

If any of the following required software packages are not already installed on your computer, the installer installs them automatically:

- Apache Tomcat version 8.0.30
- PostgreSQL 9.5.6-1
- ThingWorx version 7.1.2
- Ruby 2.3.3
- Ruby DevKit version 4.65.0.0

    Note:

    Ruby is required because the UAA Command Line Interface (UAAC) is dependent on Ruby.

GE Proficy Historian Server Security Settings Requirements

Ensure that you complete the following requirements for GE Proficy Historian Server security settings:

1. Install the GE Proficy Historian Server version 7.0 SP5 or later and ensure that the server is installed on the same computer where you want to install the Plant Applications Universal Client.
2. Configure the GE Proficy Historian Server security settings.

Plant Applications Server Requirements

Ensure that the matching hotfixes for the Plant Applications Server SP4 and Plant Applications Client SP4 are installed. These hotfixes are available in the Plant Applications 7.0 SP4 section in the Plant Applications Universal Client installation menu. For more information, refer to the *Plant Applications Getting Started Guide* for the latest release.

Plant Applications Message Bridge Requirements

GE recommends that you configure the RabbitMQ Message Bridge in the Plant Applications server before installing the Plant Applications Universal Client. For more information, refer to the Installing the Plant Applications Message Bridge section in the *Plant Applications Getting Started Guide.*

Chapter

3

Installation

Topics:

Install the Plant Applications Universal Client
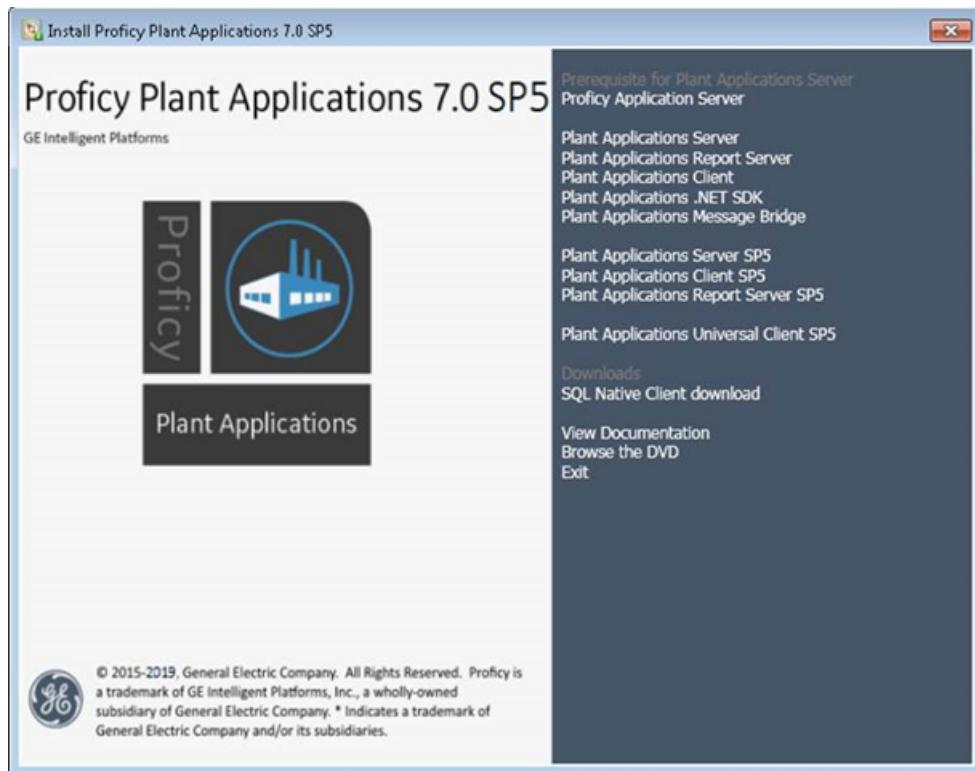
About This Task

Before you begin the installation of the Plant Applications Universal Client, ensure that you have completed all preinstallation tasks.

Procedure

1. Mount the ISO file for the Plant Applications Universal Client or load the DVD if you created one from the ISO file on the application server for Plant Applications.
2. Run the `installfrontend.exe` file as an Administrator.
   The installation menu appears, displaying the **Install Proficy Plant Applications 7.0** screen.
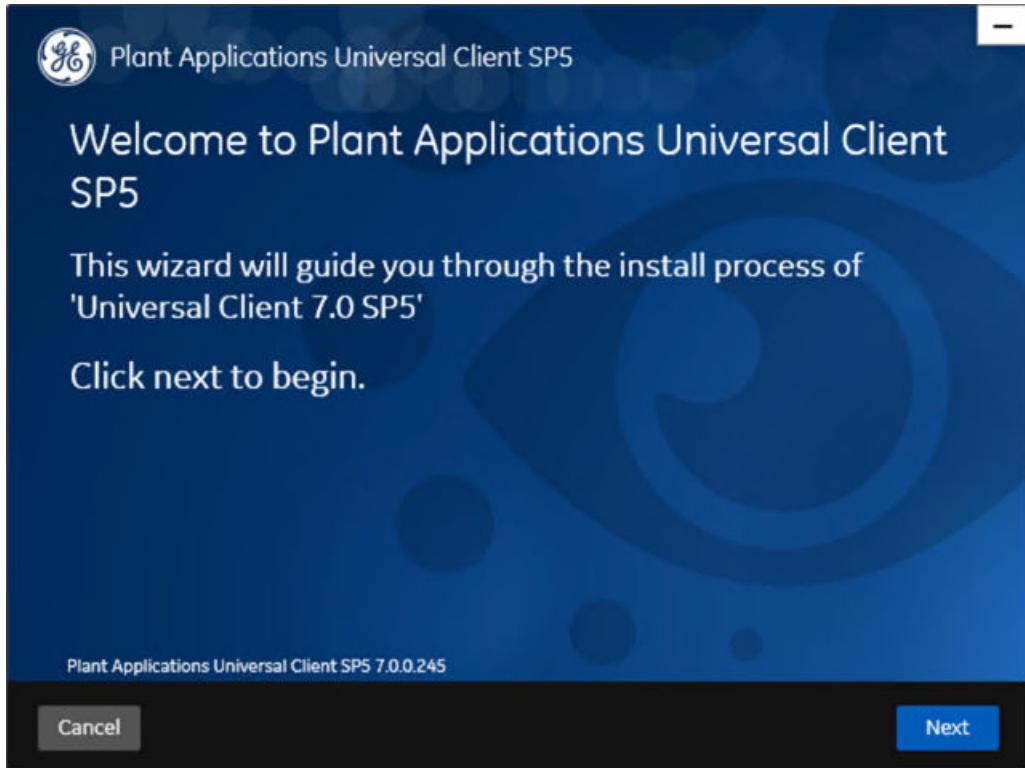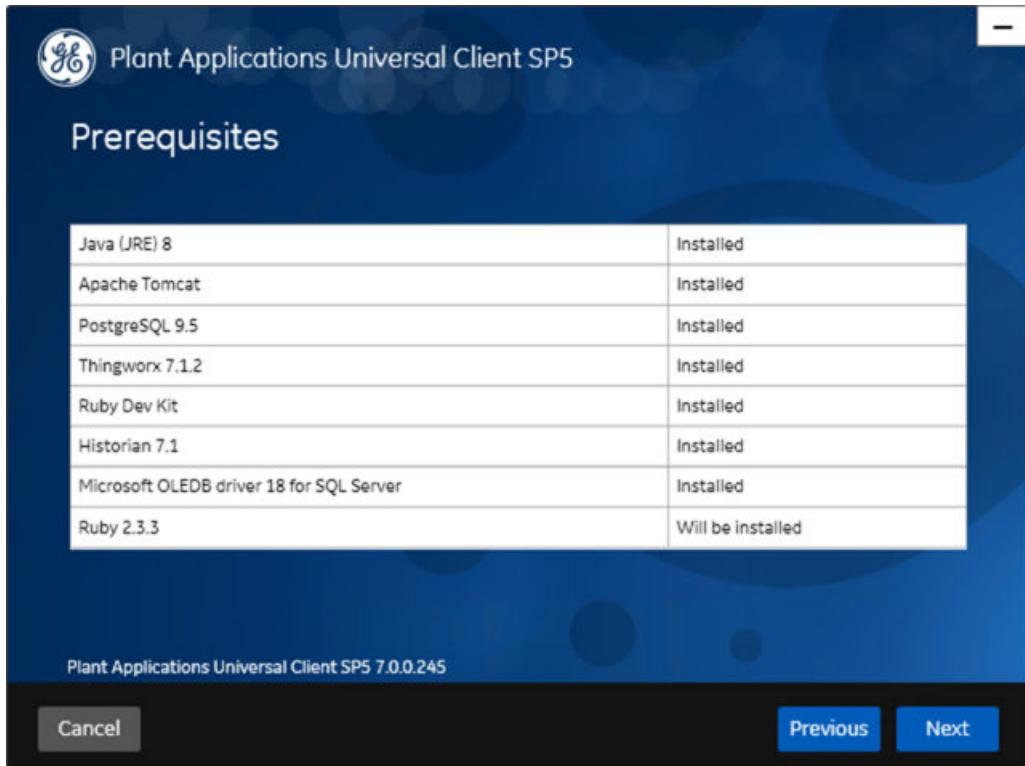
> **Tip:** You can hover over each task that appears in the installation menu to refer to the tooltip associated with that task.

3. Select **Plant Applications Universal Client SP5**.
   The Plant Applications Universal Client installation wizard appears, displaying the **Welcome to Plant Applications Universal Client SP5** screen.

4. In the **Welcome to Plant Applications Universal Client SP5** screen, select **Next**. The **Prerequisites** screen appears.
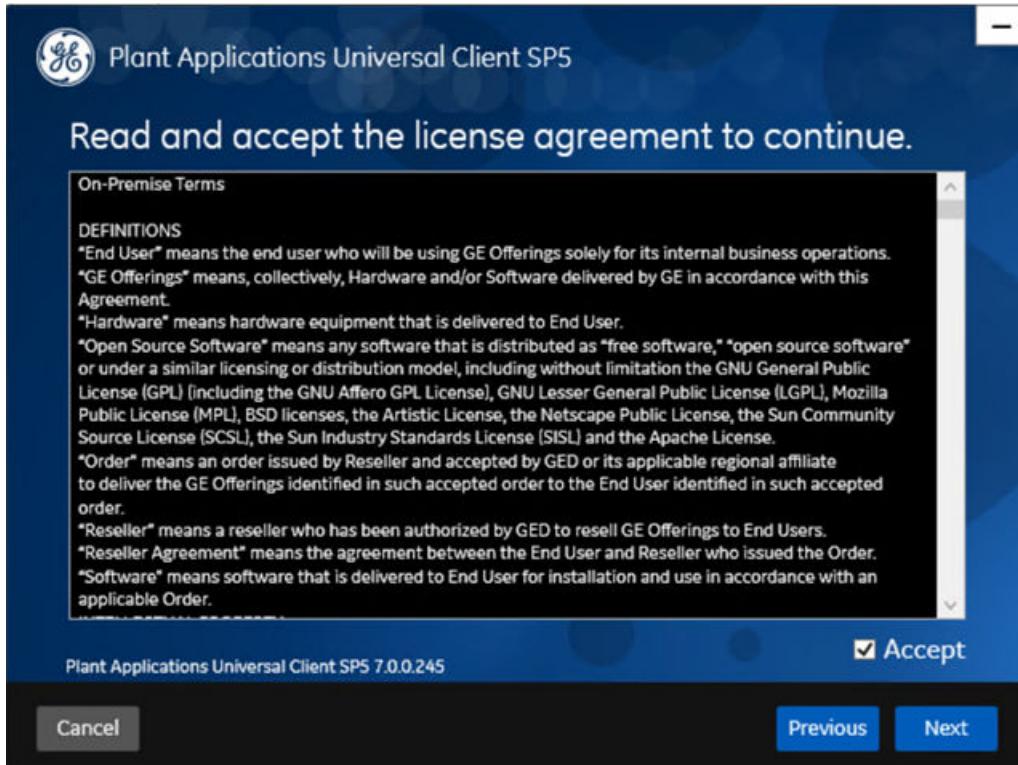
Note: If Microsoft OLE DB Driver 18 for SQL Server or Java (JRE) version 8 update 92 (or a later version) is not installed, the **Missing Prerequisites** screen appears informing you to install the
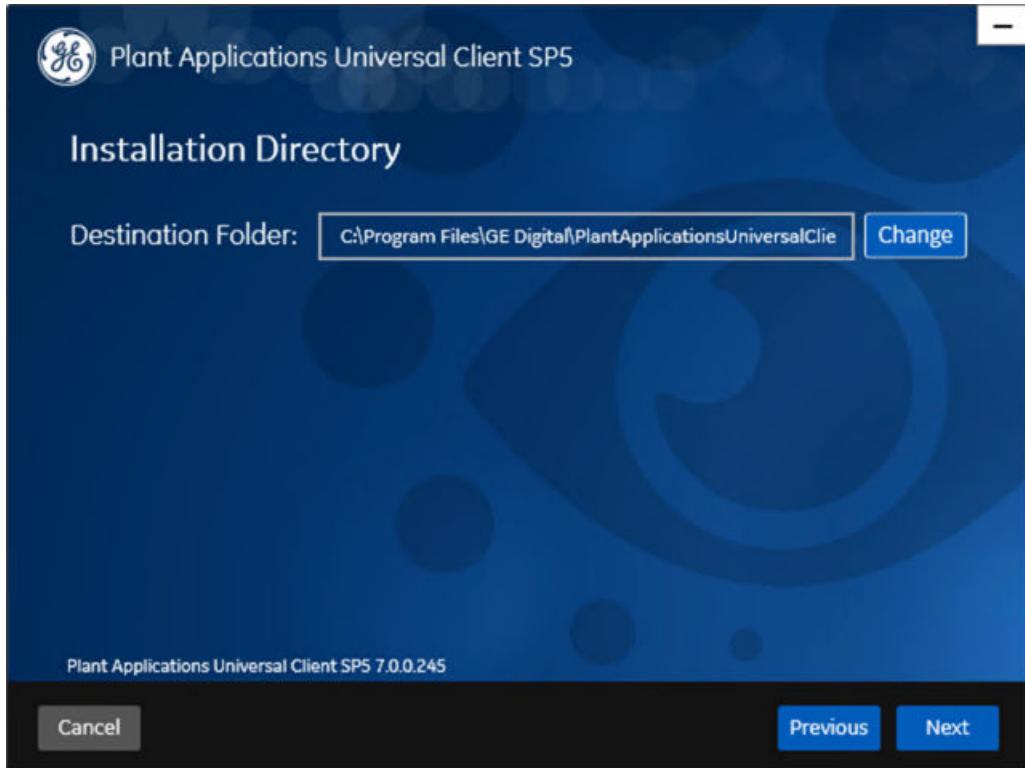
required version of the missing software before you run the installer. You must exit the installation, and first install the required software.
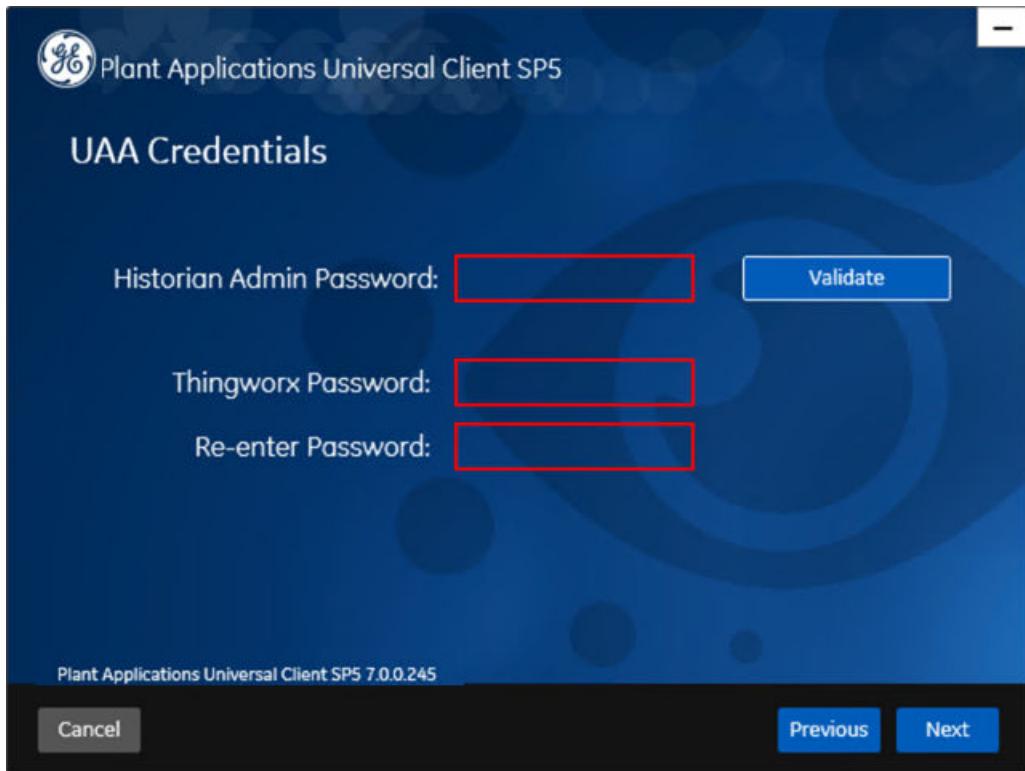
5. In the **Prerequisites** screen, select **Next** to view all installed prerequisites and install any missing prerequisites.
The **Read and accept the license agreement to continue** screen appears.

6. Read the license agreement, select **Accept**, and then select **Next** to continue the installation.
The **Installation Directory** screen appears with the default installation directory selected as `C:\Program Files\GE Digital\PlantApplicationsUniversalClient`.

7. **Optional:** In the **Destination Folder** box, select **Change** to browse and select the directory where you want to install the Plant Applications Universal Client.
8. In the **Installation Directory** screen, select **Next**.
   The **UAA Credentials** screen appears.
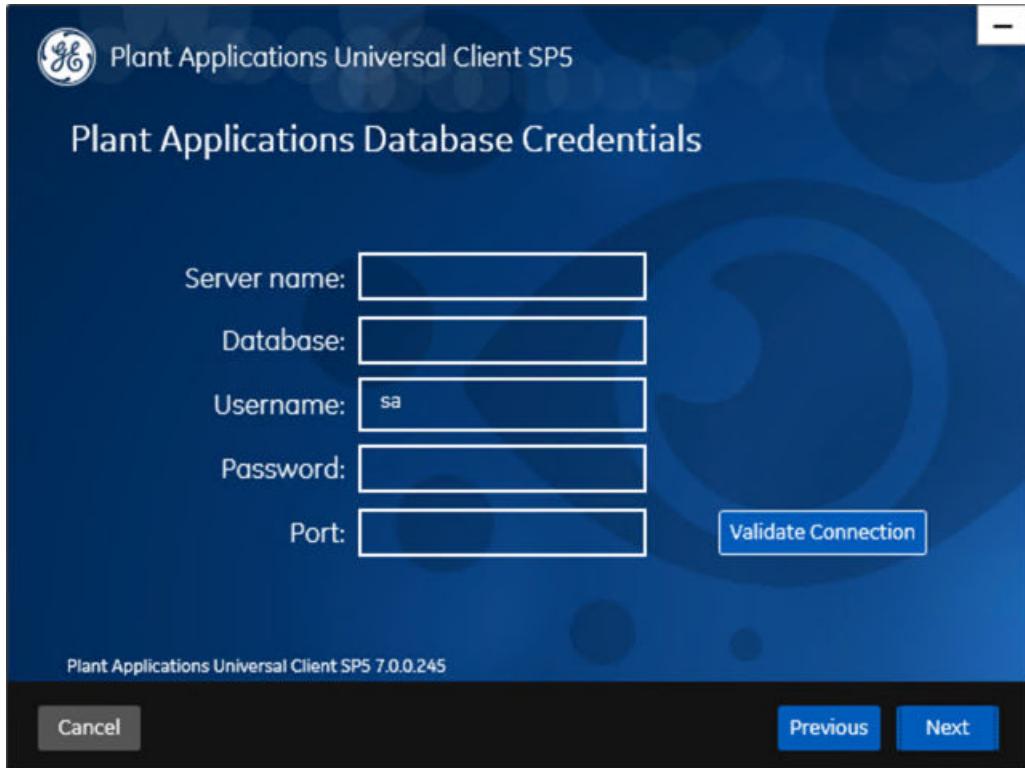
9. In the **UAA Credentials** screen, enter the credentials to access the UAA server as described in the following table.

Credential	Description
Historian Admin Password	Enter the GE Proficy Historian Administrator password, and then select **Validate** to validate the password.
	Note:
	The following table describes each icon indicating a validation status that might appear during the validation process.
	<table><tr><td>**Icon**</td><td>**Description**</td></tr><tr><td>⚙</td><td>Indicates that the validation is in progress.</td></tr><tr><td>✅</td><td>Indicates that the validation was successful.</td></tr><tr><td>❌</td><td>Indicates that the validation was unsuccessful. In this case, make sure you enter the correct password.</td></tr></table>
Thingworx Password	Enter the ThingWorx administrator password.
Re-enter Password	Renter the ThingWorx administrator password.

If all the options are entered correctly, the **Next** button is enabled.

10. Select **Next**.

The **Plant Applications Database Credentials** screen appears.

11. In the **Plant Applications Database Credentials** screen, enter the Plant Applications database credentials as described in the following table.

Credential	Description
Server name	Enter the server name where the Plant Applications database is installed in the format `HOST_NAME\INSTANCE`. Where `HOST_NAME` is the host name (either a fully qualified domain name or IP address, of the server) and `INSTANCE` is the instance of the server used by the database. **Note:** If there is no instance for the server, you can enter `HOSTNAME` as the server name. `Localhost` is not an acceptable value for `HOSTNAME`.
Database	Enter the name of the Plant Applications database that you want to connect with the Plant Applications Universal Client.
Username	Enter the user name that has permissions to access the database you entered in the **Database** box. By default, the user name appears as `sa`.
Password	Enter the password for the user name you entered in the **Username** box.
Port	Optional: Enter the number of the port that the instance uses to listen for client connections. **Note:** The default port is 1433.

12. Select **Validate Connection** to validate the database connection.

   Note: The validation process takes some time to check whether a compatible version of the Plant Applications server is installed.
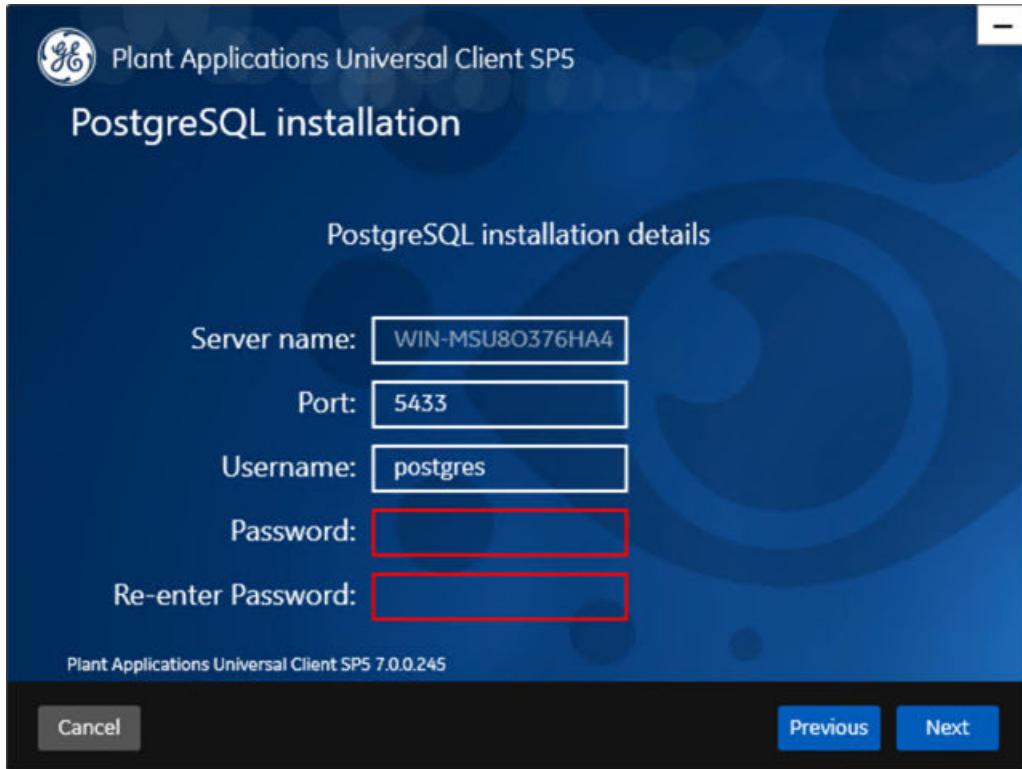
   The following table describes each icon indicating a validation status that might appear during the validation process.

Icon	Description
⚙	Indicates that the validation is in progress.
✔	Indicates that the validation was successful.
✖	Indicates that the validation was unsuccessful. In this case, make sure you enter the correct password.

If the database connection is successfully validated, the **Next** button is enabled.

13. Select **Next**.

The **PostgreSQL installation** screen appears.
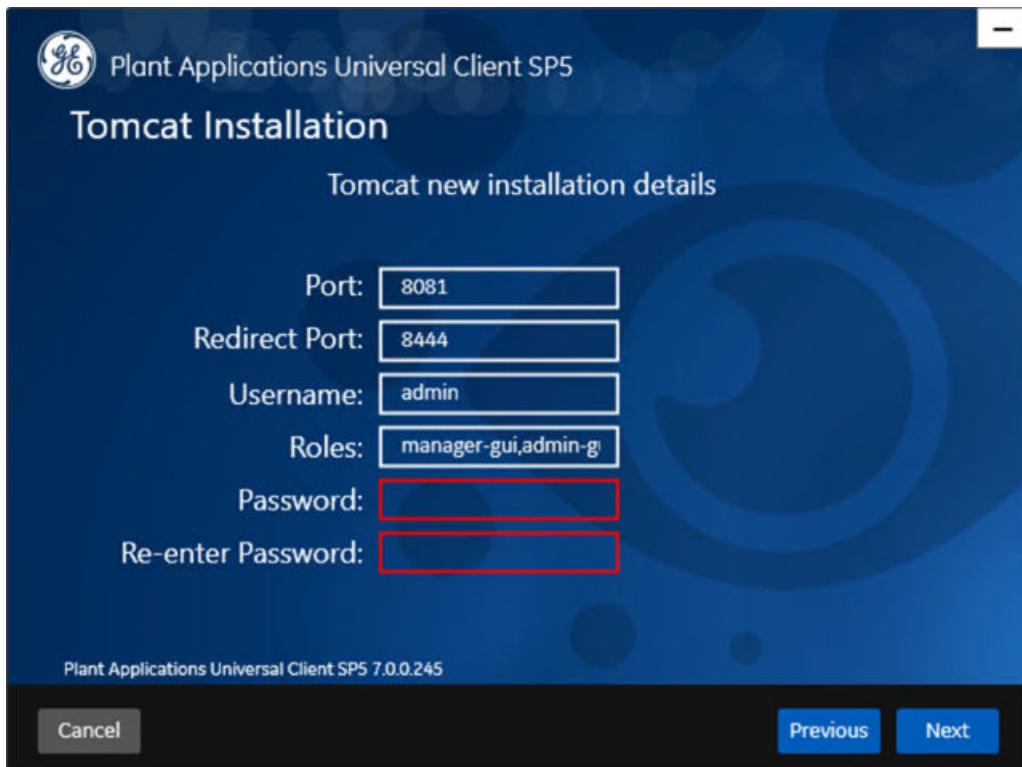
14. In the **PostgreSQL installation** screen, enter the PostgreSQL server installation details as described in the following table. The installer prompts you to enter details for an existing PostgreSQL server if the PostgreSQL installation details are available in the registry settings for the Plant Applications Universal Client on your computer. Else, the installer prompts you to enter details for a new installation of the PostgreSQL server.

Detail	Description
Server name	Skip this box as it is automatically populated with your computer name.
Port	Enter the port that the instance will use to listen for client connections.
	Note: The default port is 5433.
Username	Enter the user name to access the PostgreSQL server instance.
	Note: The default user name is `postgres`.
Password	Enter the password for the user name you entered in the **Username** box.

Detail	Description
Re-enter Password	Reenter the password for the user name entered in the **Username** box. **Note:** This box appears only when a new installation of the PostgresSQL server is initiated by the installer.

15. Select **Next**.
The **Tomcat Installation** screen appears.
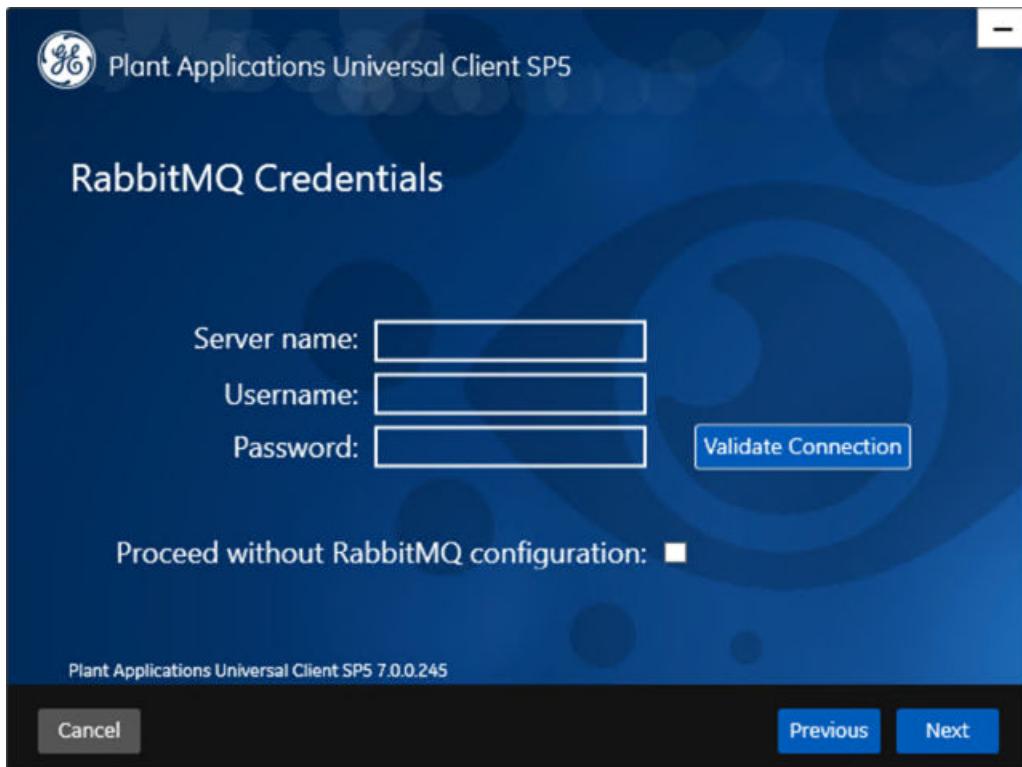
16. In the **Tomcat Installation** screen, enter the Tomcat installation details for a new or existing installation as described in the following table. The installer prompts you to enter details for an existing Tomcat if the Tomcat installation details are available in the registry settings for the Plant Applications Universal Client on your computer. Else, the installer prompts you to enter details for a new installation of Tomcat.

Installation Detail	Description
Port	Enter the HTTP port that Tomcat uses to listen for client connections. **Note:** The default port is 8081.
Redirect Port	Enter the HTTPS port that Tomcat uses to redirect all HTTP requests to this port. **Note:** The default redirect port is 8444.
Username	Enter the user name to access Tomcat. **Note:** The default user name is `admin`.
Roles	Skip this box because it is automatically populated.
Password	Enter the password for the user name you entered in the **Username** box.

Installation Detail	Description
Re-enter Password	Reenter the password for the user name entered in the **Username** box.
	Note: This box appears only when a new installation of Tomcat is initiated by the installer.

17. Select **Next**.
The **RabbitMQ Credentials** screen appears.

18. In the **RabbitMQ Credentials** screen, perform one of the following steps:

- Enter the RabbitMQ credentials for the machine that hosts your Plant Applications message bridge as described in the following table, and then select **Validate Connection**.

Credential	Description
Server name	Enter the computer name or IP address that hosts your Plant Applications Message Bridge.
Username	Enter the Administrator's user name that you set during Plant Applications Message Bridge installation.
Password	Enter the password for the Administrator's user name you entered in the **Username** box.
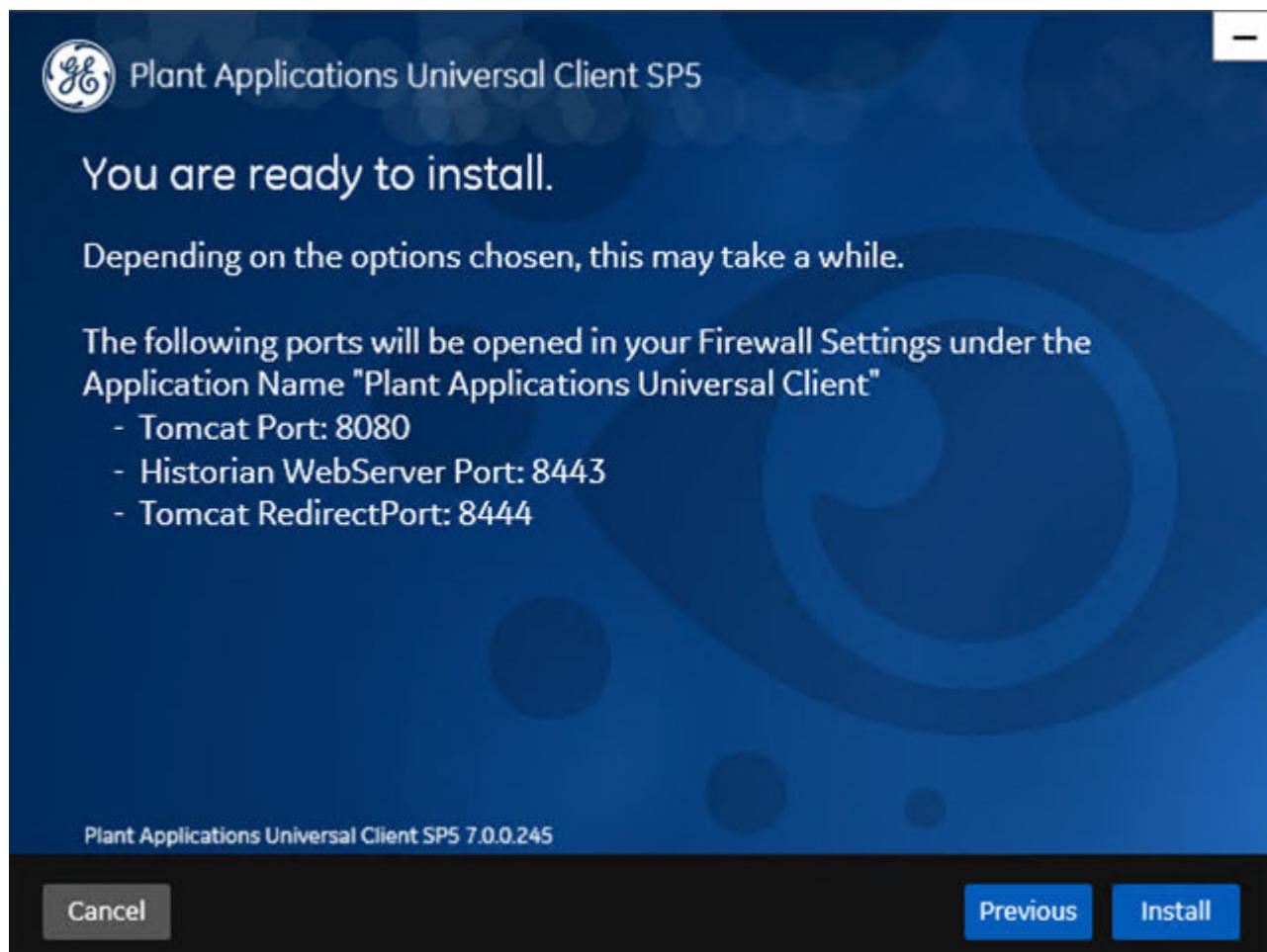
The following table describes each icon indicating a validation status that might appear during the validation process.

Icon	Description
⚙	Indicates that the validation is in progress.
✔	Indicates that the validation was successful.
✖	Indicates that the validation was unsuccessful. In this case, make sure you enter the correct password.

- Select the **Proceed without RabbitMQ configuration** check box to continue the installation process without configuring the RabbitMQ server as a message bridge for the Plant Applications Universal Client.
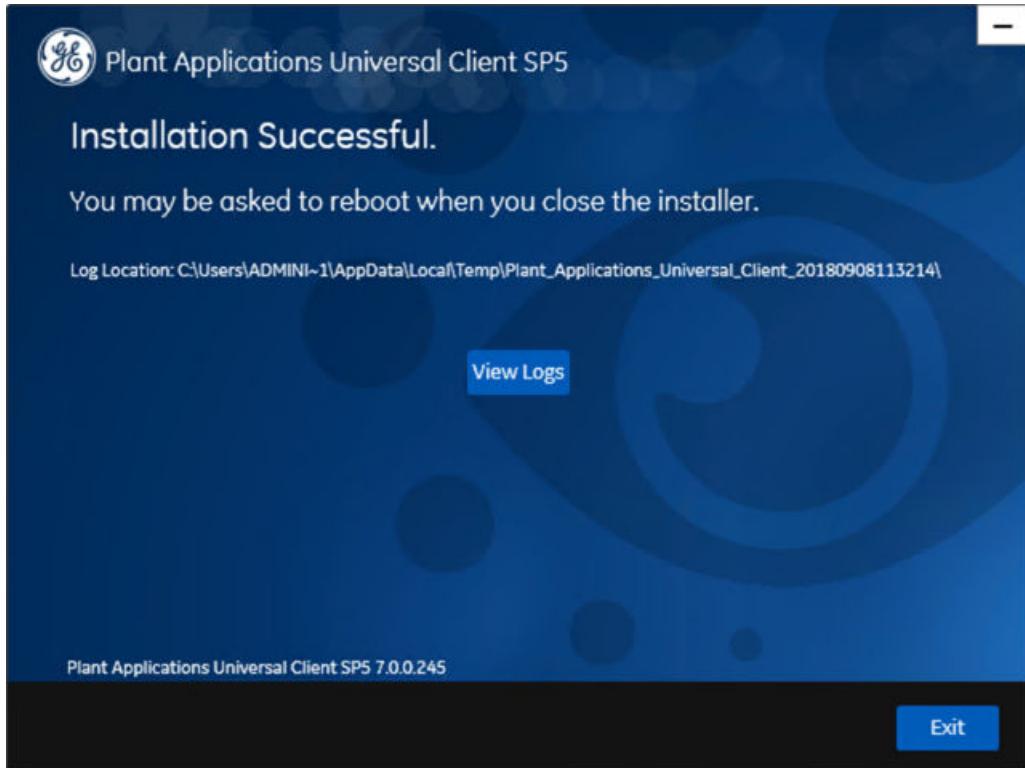
19. Select **Next**.

The **You are ready to install** screen appears.

20. Select **Install**, and then wait for the installation to complete.

Depending on the options selected, the installation process may take some time. On successful installation, the **Installation Successful** screen appears.

21. **Optional:** Select **View Logs** to see the installation details.
22. In the **Installation Successful** screen, select **Exit** to close the wizard.

Results

The Plant Applications Universal Client is successfully installed on your computer.

Remember: If you upgrade JAVA later, it might create some issues in using the Plant Applications Universal Client. To resolve this issue, refer to the Community article 000020691 in the support site http://support.ge-ip.com.

Chapter
4

Post-Installation Tasks

Topics:

About Post-Installation Tasks

Based on your requirements, perform the following post-installation tasks:

- Add a UAA user.
- Configure a GE Proficy Historian Server for the Analysis application.
- Configure the cache settings for the Historian tags used in the Analysis application.
- Configure the Plant Applications Universal Client for the Active Directory (AD) users.

Add a UAA User

About This Task

You must add User Authentication Service (UAA) users to access the Plant Applications Universal Client.

Before You begin

Ensure that you modify the `uaac-create-clients-and-users.bat` file to add the user details.

Procedure

1. Log in to the computer where you installed the GE Proficy Historian Server.
2. Select **Start**, and then search for the Command Prompt application.
3. In the search results, right-click **Command Prompt**, and then select **Run as administrator**.
4. In the command prompt, modify the directory path to the path where the `uaac-create-clients-and-users.bat` file is located.

   Note: By default, the `uaac-create-clients-and-users.bat` file is located in the Plant Applications Universal Client installation directory.
5. In the command prompt, enter `uaac-create-clients-and-users.bat` *historian_password*, where *historian_password* is the password that you set during GE Proficy Historian Server installation.
6. Press Enter to run the `uaac-create-clients-and-users.bat` file.

Results

The user is added as a UAA user to the GE Proficy Historian Server with an access level you set for the user in the `uaac-create-clients-and-users.bat` file.

Modify the Batch File to Add the User Details

About This Task

You can use the `uaac-create-clients-and-users.bat` file located in the Plant Applications Universal Client installation directory to add a Universal Client user as a User Authentication Service (UAA) user and set the access level as `bm-line-leader` or `bm-operator`. The access levels `bm-line-leader` and `bm-operator` are defined in the Plant Applications Administrator. The `uaac-create-clients-and-users.bat` file associates a default user for the access levels as described in the following table.

Access Levels	Default User
bm-operator	bm_operator_1
bm-line-leader	bm_lineleader_1

Procedure

1. In the Plant Applications Universal Client installation directory, open the `uaac-create-clients-and-users.bat` file using a text editor.
2. Depending on the access level, identify each instance of the default user, and then replace the default user with the required user name.

   For example, if the user name is `john` and you want to define `bm_operator` as the access level, replace the instances of `bm_operator_1` with `john` as shown in the following table.

Original Code Snippet	Modified Code Snippet
`call uaac user add bm_operator_1 -p test --emails bm_operator_1@xx.com`	`call uaac user add john -p test --emails john@xx.com`
`call uaac member add trend_client.read bm_operator_1`	`call uaac member add trend_client.read john`
`call uaac member add trend_client.write bm_operator_1`	`call uaac member add trend_client.write john`
`call uaac member add bm-operator bm_operator_1`	`call uaac member add bm-operator john`
`call uaac member add historian_rest_api.read bm_operator_1`	`call uaac member add historian_rest_api.read john`
`call uaac member add historian_rest_api.write bm_operator_1`	`call uaac member add historian_rest_api.write john`

Similarly, if the user name is `lisa` and you want to define `bm_lineleader` as the access level, replace the instances of `bm_lineleader_1` with `lisa` as shown in the following table.

Original Code Snippet	Modified Code Snippet
`call uaac user add bm_lineleader_1 -p test --emails bm_lineleader_1@xx.com`	`call uaac user add lisa -p test --emails lisa@xx.com`
`call uaac member add bm-line-leader bm_lineleader_1`	`call uaac member add bm-line-leader lisa`

3. Save your changes to the `uaac-create-clients-and-users.bat` file.

Results

The `uaac-create-clients-and-users.bat` file is modified with the required user details.

Configure a GE Proficy Historian Server for the Analysis Application

About This Task

The Analysis application supports plotting of Historian tags from a GE Proficy Historian Server SP5 or later versions only. You can configure a maximum of 10 remote or native GE Proficy Historian Servers in the `application.properties` file for the Analysis application.

To configure one or more GE Proficy Historian Servers for the Analysis application, follow these steps:

Procedure

1. In the directory *<tomcat_home>*`/Apache Software Foundation/Tomcat 8.0/webapps/ mes-dataservice-impl-`*<version>*`/WEB-INF/classes`, access the `application. properties` file by using a text editor. Where:
   - *<tomcat_home>*: Is the directory where you installed Apache Tomcat. For example, `C:/Program Files`.
   - *<version>*: Is the version of the `mes-dataservice-impl` microservice created during the installation of the Plant Applications Universal Client. For example, `0.6.2`.
2. Enter the properties and their details for each GE Proficy Historian Server as described in the following table.

Property	Description
hist<*n*>.service.origin	Enter the IP address of the GE Proficy Historian Server. For example, `10.181.213.204`.
hist<*n*>.service.port	Enter the port number on which the GE Proficy Historian Server is installed. **Tip:** You can leave this property blank if the GE Proficy Historian Server is installed on the default port 8443.
hist<*n*>.service.hostname	Enter the host name of the GE Proficy Historian Server as configured in the Plant Applications Administrator. For example, `GESERVER`.
hist<*n*>.service.client_secret	Enter the client secret of the Historian Administrator.

   Note: In the **Property** column, in each entered property, *<n>* represents a numeric value between 1 and 10 indicating the count of the Historian Server configured in the file. For example, `hist1.service.origin`, `hist2.service.origin`, and so on.
3. Save changes to the `application.properties` file.
4. Restart Tomcat to apply the changes.

Results

The configured GE Proficy Historian Servers appear in the Analysis application.

Configure the Cache Settings for the Historian Tags

About This Task

The Analysis application supports the caching and refreshing of the cached Historian tags after certain time interval. You configure the duration of the saved cached Historian tags in the `application.properties` file of the `mes-dataservice-impl` and `processanalyzer-service-impl` microservices for the Analysis application. After the set duration, the Historian tags are cached again.

Procedure

1. In the directory *<tomcat_home>*`/Apache Software Foundation/Tomcat 8.0/webapps/mes-dataservice-impl-`*<version>*`/WEB-INF/classes`, access the `application.properties` file by using a text editor. Where:

   - *<tomcat_home>*: Is the directory where you installed Apache Tomcat. For example, `C:/Program Files`.
   - *<version>*: Is the version of the `mes-dataservice-impl` microservice created during the installation of the Plant Applications Universal Client. For example, `0.6.2`.

2. Enter the properties and their details as described in the following table.

Property	Description
`historianTagMaxCacheSize`	Enter the maximum cache size in KB. The default value is `50000`.
	Example: `historianTagMaxCacheSize=50000`
`historianTagCacheTimeOut`	Enter the duration in the format `duration<timeformat>` after which the cached Historian tags are cleared by the `mes-dataservice-impl` microservice. Where: `<timeformat>` is h, m, or s to indicate time in hours, minutes, or seconds, respectively. The default value is `6h`.
	Example: `historianTagCacheTimeOut=6h`
`scheduler.tagcaching.seconds`	Enter the duration in seconds after which the Historian tags are cached again by the `mes-dataservice-impl` microservice. The default value is `21600`.
	Example: `scheduler.tagcaching.seconds=21600`

   Note: The value you enter for the `historianTagCacheTimeOut` and `scheduler.tagcaching.seconds` properties must of the same duration you enter for the `tagVariableCacheTimeOut` property in the `processanalyzer-service-impl` microservice.

3. Save the changes to your file.
4. In the directory *<tomcat_home>*`/Apache Software Foundation/Tomcat 8.0/webapps/processanalyzer-service-impl-`*<version>*`/WEB-INF/classes`, access the `application.properties` file by using a text editor. Where:

   - *<tomcat_home>*: Is the directory where you installed Apache Tomcat. For example, `C:/Program Files`.

- *<version>*: Is the version of the `processanalyzer-service-impl` microservice created during the installation of the Plant Applications Universal Client. For example, `0.6.2`.

5. For the `tagVariableCacheTimeOut` property, enter the duration in the format `duration<timeformat>` after which the tags are cached again. Where: `<timeformat>` is h, m, or s to indicate time in hours, minutes, or seconds, respectively. The default value is `6h`. Example: `tagVariableCacheTimeOut=6h`

   Note: The value you enter for the `tagVariableCacheTimeOut` property must be of the same duration you enter for the `historianTagCacheTimeOut` and `scheduler.tagcaching.seconds` properties in the `mes-dataservice-impl` microservice.

6. Save the changes to your file.
7. Restart Tomcat to apply the changes.

Results

The cached tags are refreshed after the duration you set in the `application.properties` file of the `mes-dataservice-impl` and `processanalyzer-service-impl` microservices for the Analysis application.

Configure the Plant Applications Universal Client for the AD Users

About This Task

For the identification and authorization of the logged-in users, the Plant Applications Universal Client composer (also known as UCC) is integrated with the User Account and Authentication (UAA) service of the GE Proficy Historian Server. As an administrator, you can create a user database for the Plant Applications Universal Client. However, this database will be local to the UAA and independent of the Plant Applications users database.

Plant Applications enables domain-based authentication for its users. The integration of the UAA service with Active Directory Domain Services (AD DS) saves the duplication efforts of creating and managing Plant Applications domain users in the UAA server.

The following figure displays the Windows domain environment created with two Windows-2016 Servers and the deployment topology.
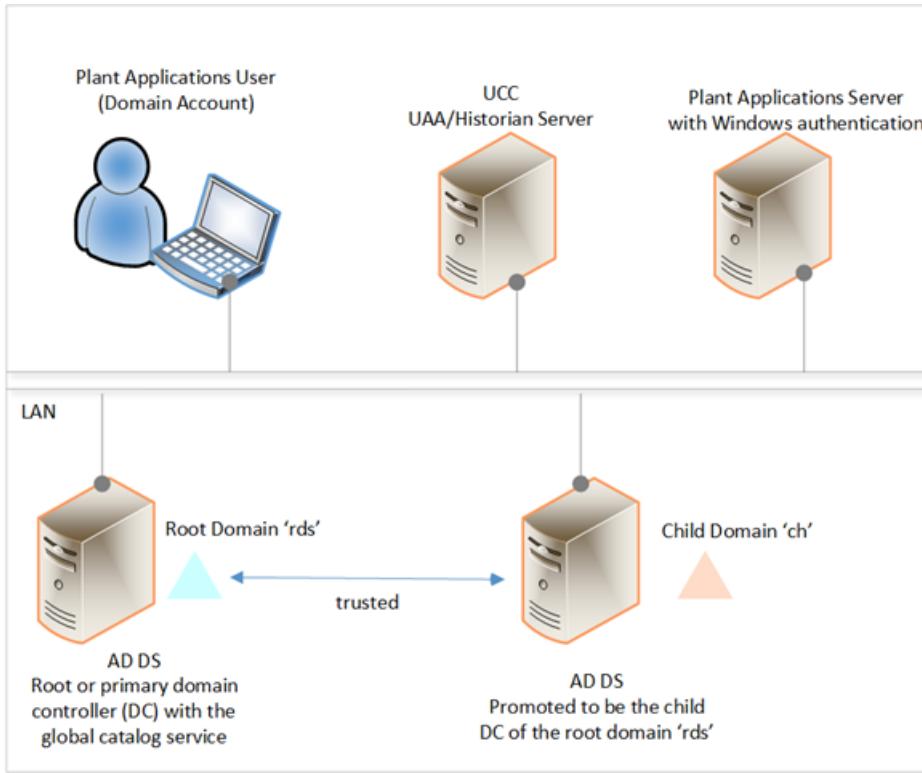
Figure 1: Windows Domain Environment

The following figure displays the domain information tree and the user groups used in this procedure.
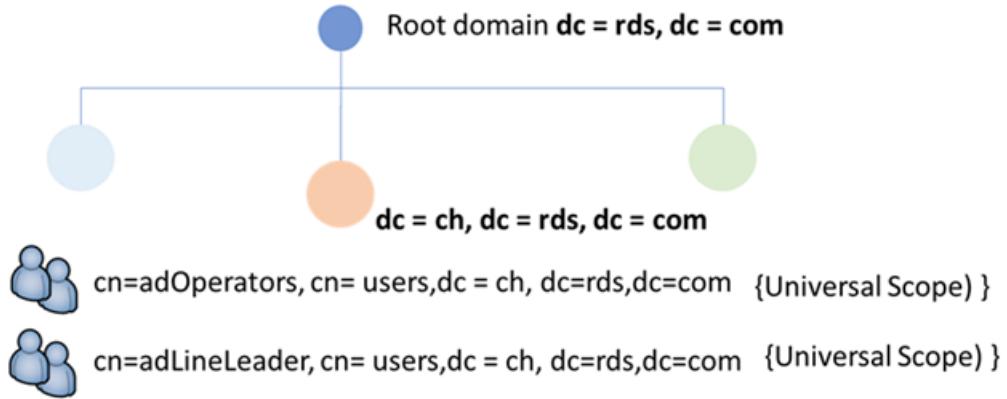
Figure 2: Domain Information Tree

Before You begin
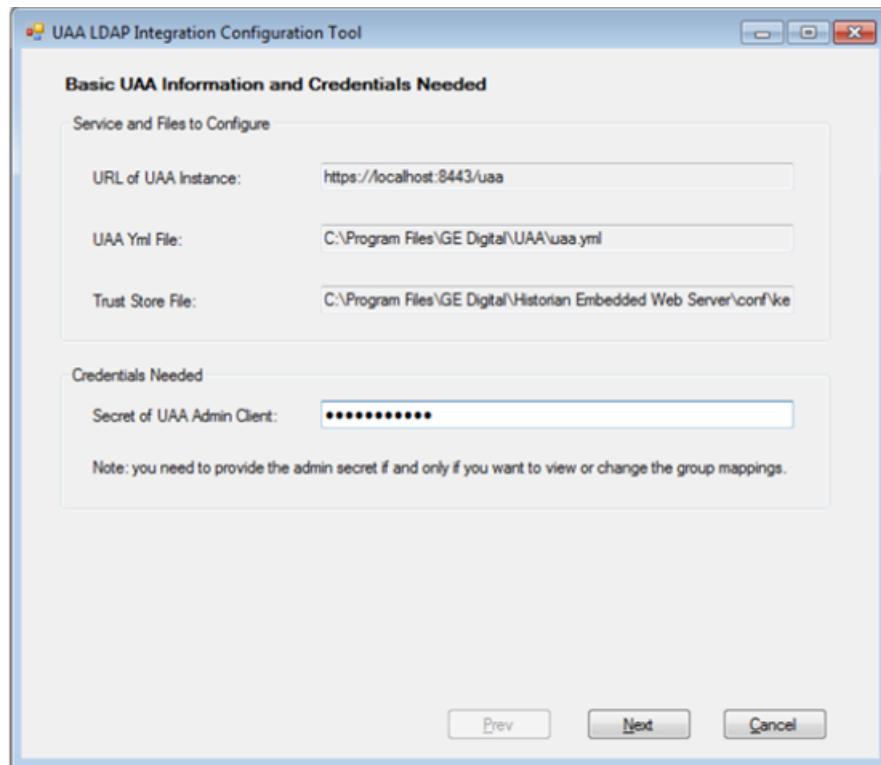
Install the following prerequisites:

- Plant Applications 7.0 or later
- GE Proficy Historian Server 7.0 SP5 or later

Procedure

1. Log in to the computer where you installed the Plant Applications Universal Client.
2. Select **Start**, and then search for `Command Prompt`.
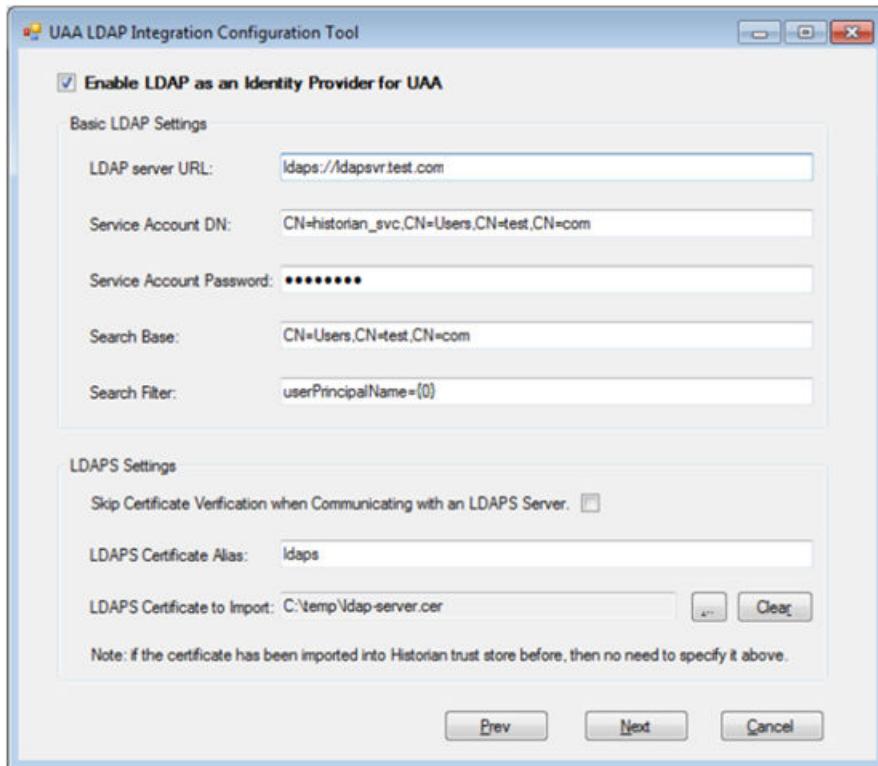
3. In the search result, right-click **Command Prompt**, and then select **Run as administrator**.
4. At the command prompt, change the directory path to the path where the `uaa-ldap-config-tool.exe` file is placed in the GE Proficy Historian Server installation directory. By default, the file is located in the directory: `C:\Program Files\GE Digital\UAA`.

   Note: The `uaa-ldap-config-tool.exe` file is automatically created when you install the GE Proficy Historian Server 7.0 SP5.0 or later version.

5. Configure the LDAP configurations for the UAA service.

   a) At the command prompt, enter `uaa-ldap-config-tool.exe`.
      The **UAA LDAP Integration Configuration Tool** window appears.

   Note:

   The following read-only options appear in the **UAA LDAP Integration Configuration Tool** window:

   - **URL of UAA Instance**: Specifies the URL of the UAA instance of the GE Proficy Historian Server.
   - **UAA Yml File**: Specifies the .yml file that the UAA instance uses as the primary configuration file and is modified by the tool.
   - **Trust Store File**: Specifies the server certificate file when you select the Lightweight Directory Application Protocol and Secure (LDAPS) protocol and provide a certificate file.

   b) Enter the password of the Historian Administrator in the **Secret of UAA Admin Client** box, and then select **Next**.
      The options to enter LDAP settings appear in the **UAA LDAP Integration Configuration Tool** window.

c) Select the **Enable LDAP as an Identity Provider for UAA** check box.
The LDAP configuration options are now modifiable.

d) Enter or modify the configuration options in the **LDAP Group Membership Search** section as described in the following table.

Option	Description	Example

LDAP Server URL	The URL of the LDAP server, starting with `ldap://` or `ldaps://`.
	
	Note: If you use a non-standard port, you must specify the port number
		To connect to an Active Directory (AD) server, use the following examples:
		• `ldap://`
		`192.168.1.16:386`
		• `ldaps://`
		`192.168.1.16:636`
		
		To connect to a Global Catalog server, use the following examples:
		• `ldap://`
		`192.168.1.16:3268`
		• `ldaps://`
		`192.168.1.16:3269`

Service Account DN	The distinguished name of the domain of a service account used for searching users and retrieving users' group information.	`CN=historian_svc,CN=U` `sers,CN=test,CN=om`
Service Account Password	The password of the account specified in the **Service Account DN** option. Leave this box blank, if you don't want to change or reset the default value.	
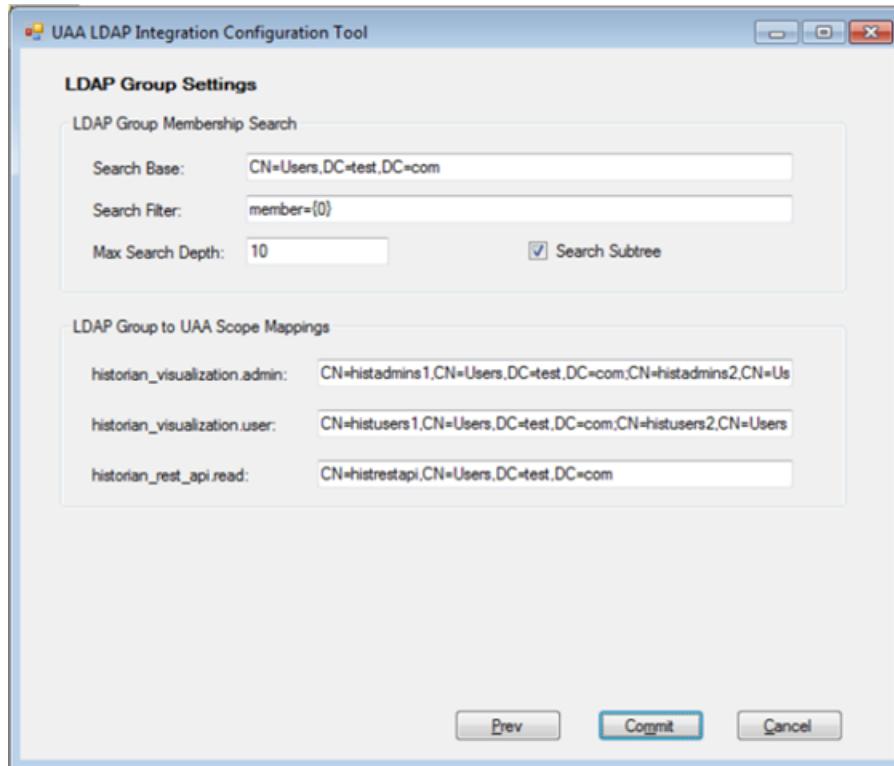
Option	Description	Example
Search Base	LDAP directory from where the search begins.	`CN=Users,CN=test,CN=c om`
Search Filter	The matching criterion used for the user identification. The filter must match the user's input, indicated as `{0}`, for an LDAP attribute.	• `userPrincipalName={ 0}` • `sAMAccountName={0}`

e) Skip this step if you do not use LDAPS. Enter or modify the options in the **LDAPS Settings** section as described in the following table.

Option	Description
Skip LDAP server's certificate verification	Select this check box to disable the verification of the identity of the LDAP server by UAA. However, all communications between UAA and the LDAP server are still encrypted. This is a less secure option and is vulnerable to identity-spoof attacks. If you select this option, you can skip the step to provide the LDAP server's certification. **Tip:** Select this check box during the initial provisioning or troubleshooting.
LDAPS Certificate Alias	Specify a certificate alias used for uniquely identifying the certificate in the truststore file used by the UAA service. **Note:** This option is disabled if you select the **Skip LDAP server's certificate verification** check box.
LDAPS Certificate to Import	Specify the LDAP server's certificate in either binary or base 64-encoded form. For example, in a file with an extension `.cer`, `.crt`, `.der`, or `.pem`. You must select **…** to access the window to select the certificate file. Later, the tool imports the certificate into the truststore file used by UAA and configures the UAA to use this certificate to protect LDAP communications. This option is disabled if you select the **Skip LDAP server's certificate verification** check box.

Important:

- You can select and import the certificate only once. When you run the tool again to reconfigure, you can skip the steps to specify the **LDAPS Certificate Alias** and **LDAPS Certificate to Import** options.
- You can select **Clear** for the **LDAPS Certificate to Import** option to cancel the import of the specified certificate file.

f) Select **Next**.
The options to enter **LDAP Group Settings** appear in the **UAA LDAP Integration Configuration Tool** window.

g) In the **LDAP Group Membership Search** section, enter the modifiable options as described in the following table.

Option	Description
Search Base	Specifies the part of the directory tree under which group searches should be performed.
Search Filter	Specifies the matching criterion for group membership search for user.
Max Search Depth	Specifies the levels of the nesting for the LDAP groups that should be searched to determine the user's group membership.
Search Subtree	Specifies whether the subtree of the search base in the LDAP directory should also be included in the search.

h) In the **LDAP Group to UAA Scope Mappings** section, modify the group mappings from the LDAP or AD groups to each of the predefined GE Proficy Historian Server scopes in the UAA instance. Each option in this section requires the distinguished names of the LDAP groups mapped to the scope. Use semicolons to separate multiple distinguished names.

i) Select **Commit**.
    After few seconds, a subsequent window appears that displays all the group mappings. If you are satisfied with the mappings, you can close the application.

6. Map the Plant Applications Universal Client scopes with the AD user groups.

    a) Access the Command Prompt window as an administrator.

    b) At the command prompt, change the directory to the installation folder of Ruby.

    c) At the command prompt, enter `uaac token client get client1`.
        The **Client secret** prompt appears

        Tip: At the command prompt, enter `UAAC` to refer to the help displaying list of all UAAC commands.

d) Enter client secret of the Plant Applications Universal Client.

e) At the command prompt, enter commands as described in the following table.

> **Note:** In the following commands, `bm-line-leader`, `bm-operator`, and `bm-administrator` are Plant Applications Universal Client scopes and `adOperators` and `adLineLeaders` are AD user groups with distinguished domain names as `'cn=adOperators,cn=users,dc=ch,dc=rds,dc=com'` and `'cn=adLineLeaders,cn=users,dc=ch,dc=rds,dc=com'`, where `dc.com` is the parent domain. You can repeat the same commands for mapping other AD user groups, if any.

Command	Description
`uaac group map --name bm-line-leader cn=adOperators,cn=users,dc=ch,dc=rds,dc=com`	Maps the `bm-line-leader` scope in the Plant Applications Universal Client with the `adOperators` AD user group.
`uaac group map --name bm-operator cn=adOperators,cn=users,dc=ch,dc=rds,dc=com`	Maps the `bm-operator` scope in the Plant Applications Universal Client with the `adOperators` AD user group.
`uaac group map --name bm-administrator cn=adOperators,cn=users,dc=ch,dc=rds,dc=com`	Maps the `bm-administrator` scope in the Plant Applications Universal Client with the `adOperators` AD user group.
`uaac group map --name bm-line-leader cn=adLineLeaders,cn=users,dc=ch,dc=rds,dc=com`	Maps the `bm-line-leader` scope in the Plant Applications Universal Client with the `adLineLeaders` AD user group.
`uaac group map --name bm-operator cn=adLineLeaders,cn=users,dc=ch,dc=rds,dc=com`	Maps the `bm-operator` scope in the Plant Applications Universal Client with the `adLineLeaders` AD user group.
`uaac group map --name bm-administrator cn=adLineLeaders,cn=users,dc=ch,dc=rds,dc=com`	Maps the `bm-administrator` scope in the Plant Applications Universal Client with the `adLineLeaders` AD user group.

Tip: To unmap a mapped user group, at the command prompt, enter the following command:

```
uaac group unmap --name bm-operator
cn=adLineLeaders,cn=users,dc=ch,dc=rds,dc=com
```

In the command, the AD user group `cn=adLineLeaders,cn=users,dc=ch,dc=rds,dc=com` is unmapped from the `bm-operator` scope.

7. Restart Tomcat.
8. From any computer in the domain, access the Google Chrome browser, and then enter the URL to access the Plant Applications Universal Client.

   For example: `https://ucccomputernameorip:xxxx/Thingworx`, where `uccmachinenameorip` is the actual computer name or IP of the server where the Plant Applications Universal Client is installed and `xxxx` is the port chosen for the Plant Applications Universal Client.

   The **Historian Login** page appears.
9. Log in to the **Historian Login** page by using appropriate domain user credentials.

   Note: The user must be the Plant Applications user, the domain associated with the user account must be configured in the UAA service, and the user group associated with the user account must be mapped to the scopes of the Plant Applications Universal Client and GE Proficy Historian Server.

Results

After the successful login, you can access the Plant Applications Universal Client applications.

Chapter
5

Upgrade

Topics:

Upgrade the Plant Applications Universal Client

Before You begin

Before you upgrade to the Plant Applications Universal Client 7.0 SP5:

- Ensure that you complete the following procedure specific to the Plant Applications Message Bridge:

    1. Uninstall the earlier version of the Plant Applications Message Bridge.
       The Proficy Server Message Bridge service is disabled.
    2. Restart your computer.
    3. Install the version of the Plant Applications Message Bridge included in the Plant Applications 7.0 SP5 installer.
    4. Restart the Proficy Server Manager service.
       The Proficy Server Message Bridge service is automatically restarted.

- Ensure that you create a backup copy of the text file that includes the user-specific settings. The file is created in the directory `<tomcat_home>/Apache Software Foundation/Tomcat 8.0/users/<user>`, where:

    ◦ *<tomcat_home>* is the directory where you installed Apache Tomcat. For example, `C:/Program Files`.
    ◦ *<user>* is the name of a logged-in user.

    After you upgrade, you can copy-paste the file to the same location to replicate the user-specific settings. For more information, refer to the Plant Applications Universal Client Help.

About This Task

You can upgrade any earlier service pack (SP) version of Plant Applications Universal Client 7.0 to 7.0 SP5.

Note: The Plant Applications 7.0 SP5 installer is the base installer for all upgrade requirements. The base installer Plant Applications 7.0 SP1 is discontinued.

Procedure
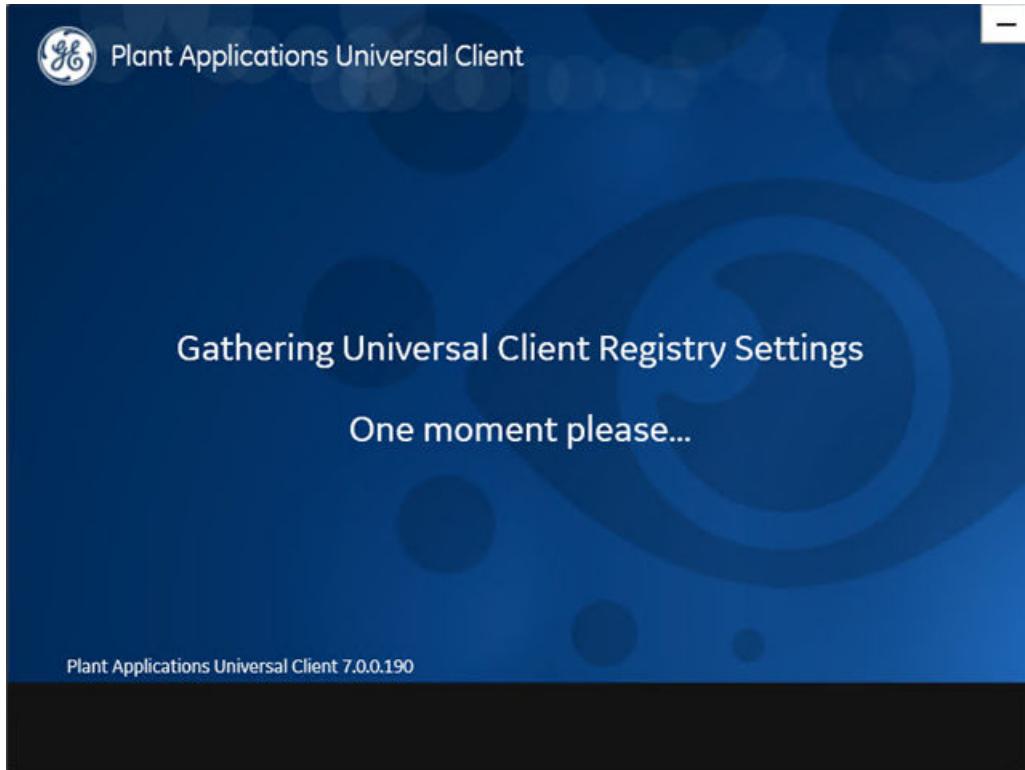
1. Run the `installfrontend.exe` file as an Administrator.
   The installation menu appears, displaying the **Install Proficy Plant Applications 7.0** screen.
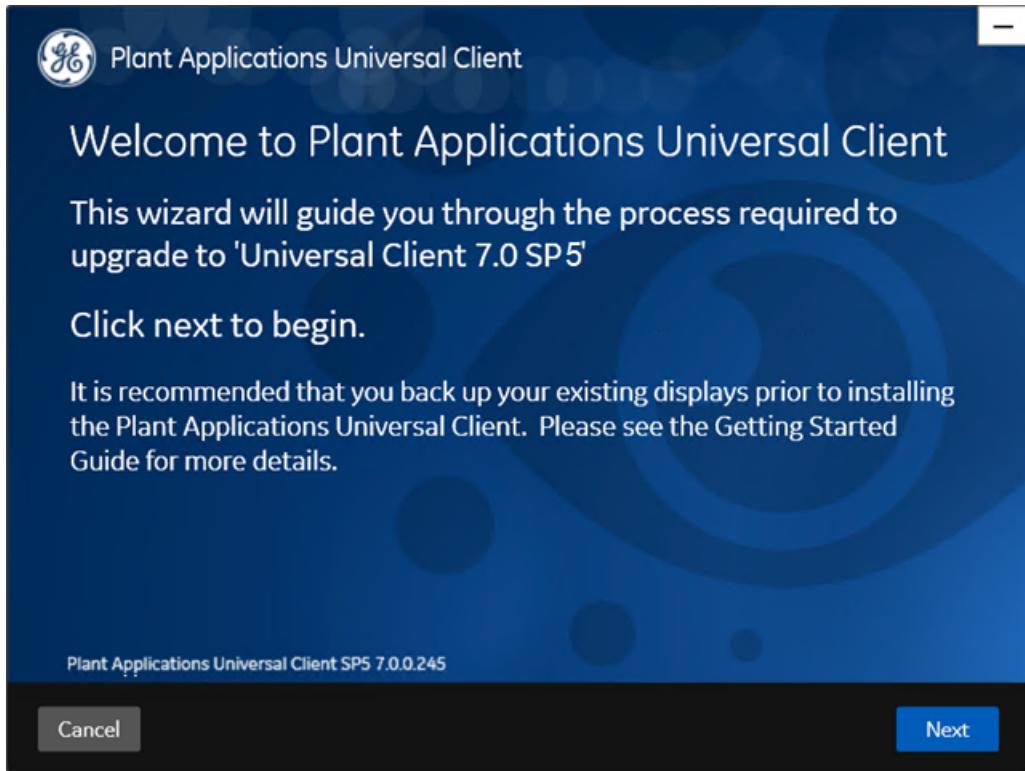
Tip: You can hover over each task that appears in the installation menu to refer to the tooltip associated with that task.

2. Select **Plant Applications Universal Client SP5**.
   The installer gathers the current configuration and determines the required configurations that need to be updated.
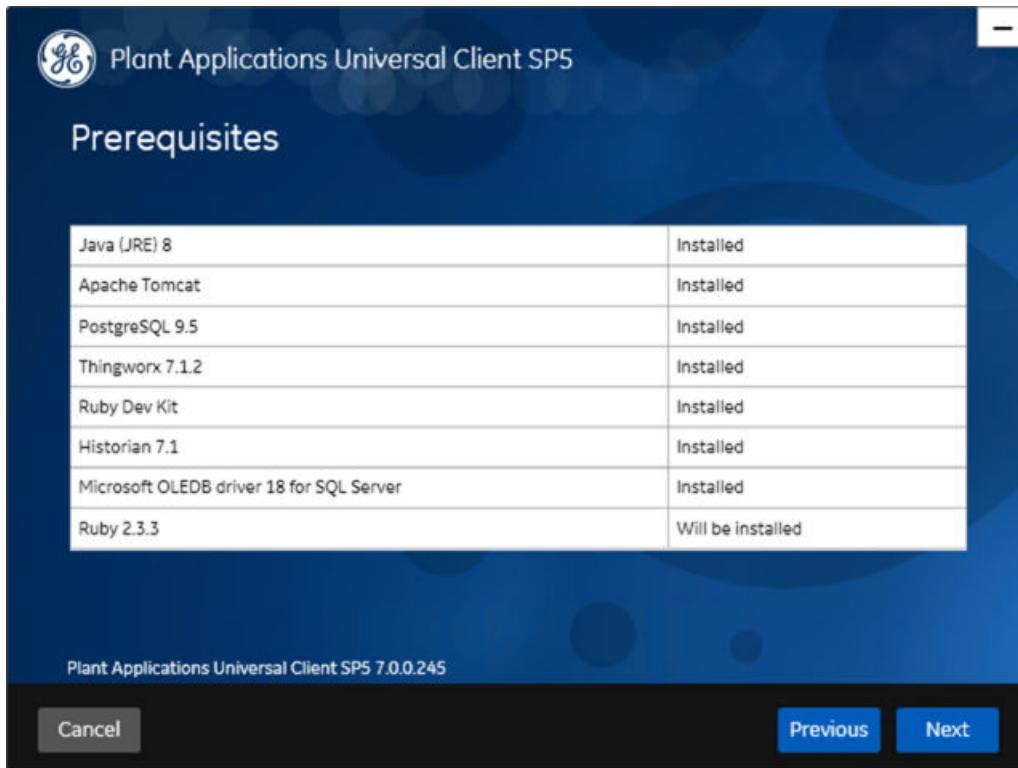
Then the upgrade wizard appears, displaying the **Welcome to Plant Applications Universal Client** screen.
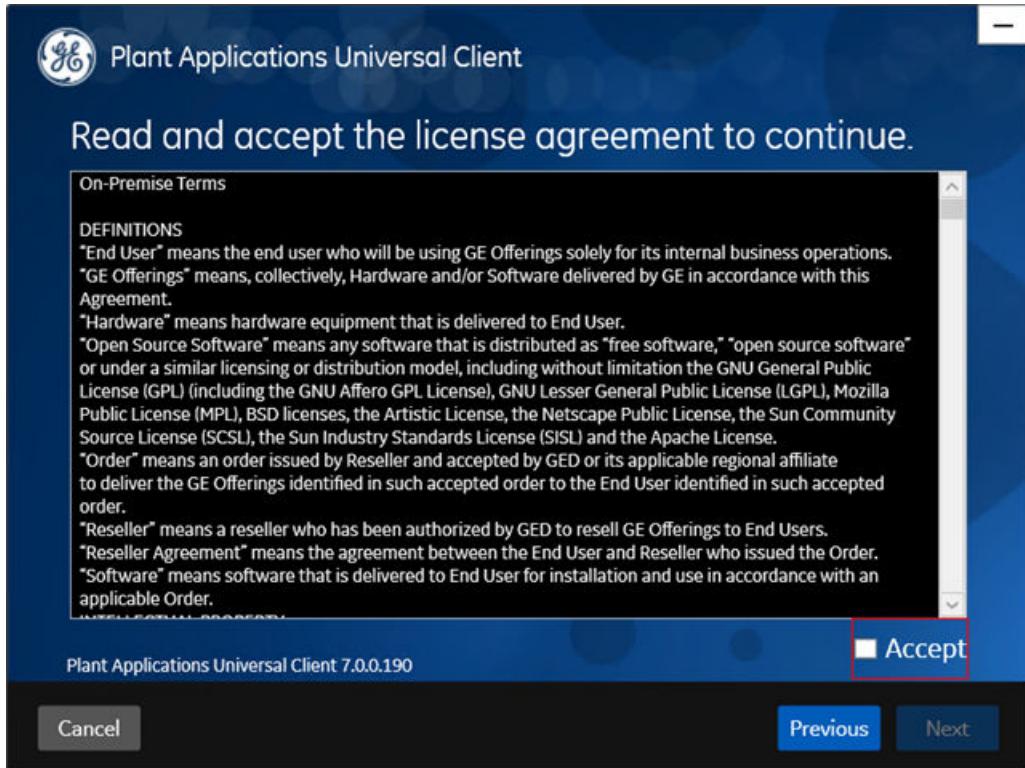

3. In the **Welcome to Plant Applications Universal Client** screen, select **Next**.
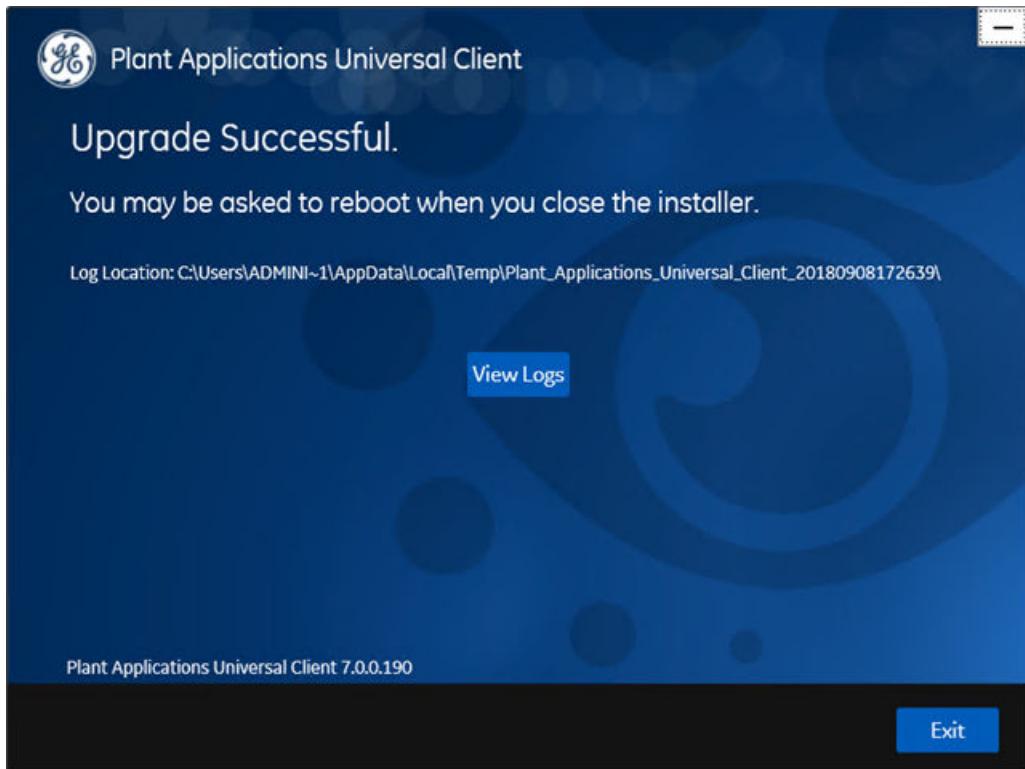
If any of the required software is missing, the **Prerequisites** screen appears. In the **Prerequisites** screen, select **Next** to view all installed prerequisites and install any missing prerequisites.

If all the required software is installed, then the **Read and accept the license agreement to continue** screen appears.

4. Read the license agreement, select **Accept**, and then select **Next** to continue the upgrade. Depending on the contents to be upgraded, the upgrade process might take some time. A message appears in the wizard, indicating whether the upgrade was successful or not.

5. **Optional:** Select **View Logs** to see the upgrade details.

6. In the **Upgrade Successful** screen, select **Exit** to close the upgrade wizard.

Results

The earlier service pack version of Plant Applications Universal Client 7.0 is successfully upgraded to the Plant Applications Universal Client 7.0 SP5.

Chapter

6

Troubleshooting

Topics:

Frequently Asked Questions

- Can I access the log files created after the Plant Applications Universal Client installation or upgrade process?

  Yes. You can access the log files created during the installation process from the following directory: `%USERPROFILE%\APPDATA\Local\Temp`. The log files are available in the format `Plant_Applications_Universal_Client_yyddmmhhmmss`.

- What happens if I do not remember the credentials of an existing installation of a software package such as PostgreSQL, ThingWorx, or GE Proficy Historian Server?
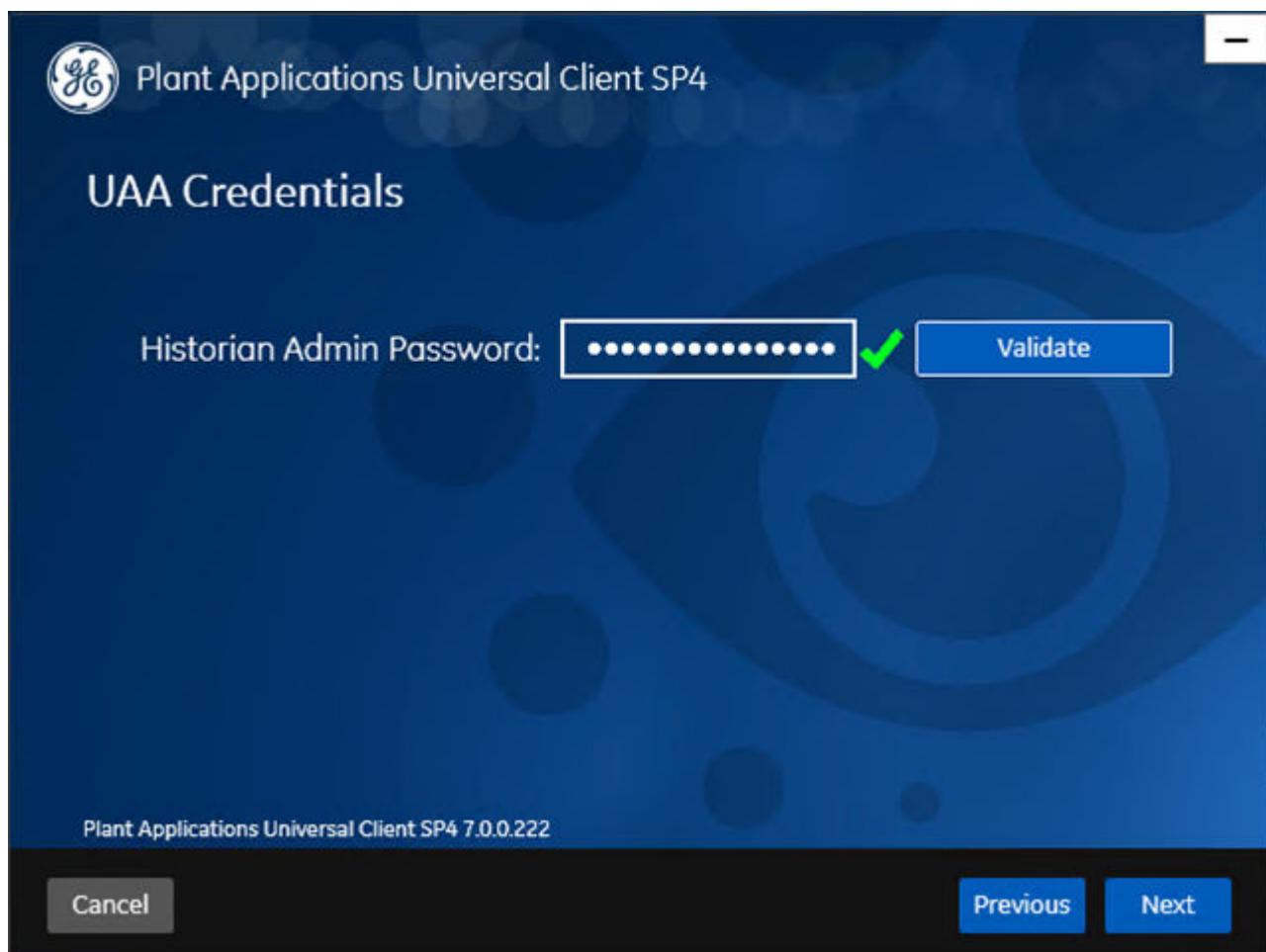
  You must reinstall the required software package.

- What happens if I upgrade JAVA after installing the Plant Applications Universal Client?

  If you upgrade JAVA later, it might create some issues in using the Plant Applications Universal Client, and Tomcat might stop. To resolve this issue, refer to the Community article 000020691 in the support site http://support.ge-ip.com.

- What happens if I uninstall, and then install again the Plant Applications Universal Client?

  If you install the Plant Applications Universal Client again, the installer automatically uses the password for the ThingWorx administrator you entered during the first-time installation. Therefore, in the **UAA Credentials** screen, you can only validate the GE Proficy Historian Administrator password as shown in the following image.

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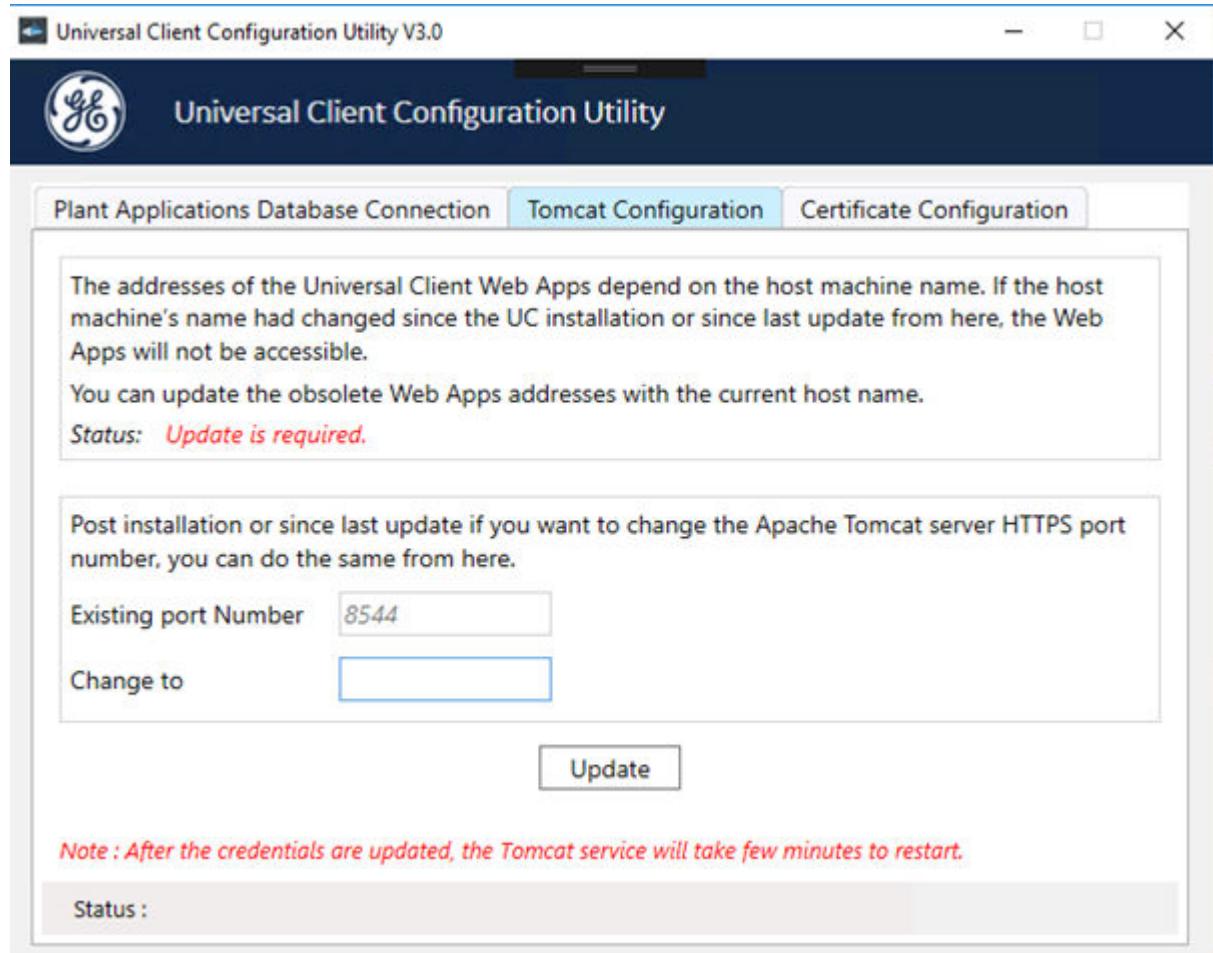
- What should I do if the host machine name, Tomcat port number, or both have been modified after the installation of the Plant Applications Universal Client?

  You must use the Universal Client Configuration Utility to update the new host machine name and the new Tomcat port number, if applicable, in all the Plant Applications Universal Client components using the following procedure:

  1. Run the Universal Client Configuration Utility installed with Plant Applications Universal Client.

     The **Universal Client Configuration Utility** window appears.

  2. Select the **Tomcat Configuration** tab.

     The **Tomcat Configuration** section appears.

  Note: If the host machine name or Tomcat port number was modified, in the Status field, a message appears indicating that an update is required.

  3. In the **Change to** box, enter the new port number.

     Note: This step is applicable only when the Tomcat port number is modified.

  4. Select **Update**.

  The new host machine name and Tomcat port number are updated in all the Plant Applications Universal Client components.

- What should I do if a blank screen appears after I log in to the Plant Applications Universal Client?

  A blank screen appears when the Historian certificate is not added to the Java KeyStore. The GE Proficy Historian Server KeyStore is located at `C:\Program Files\GE Digital\Historian`

`Embedded Web Server\Conf`. The Java KeyStore is located at `C:\Program Files\Java \jr1.8.0_162\lib\security`.

To resolve this issue, you must import the Historian certificate from the GE Proficy Historian Server KeyStore to the Java KeyStore as described in the following procedure:
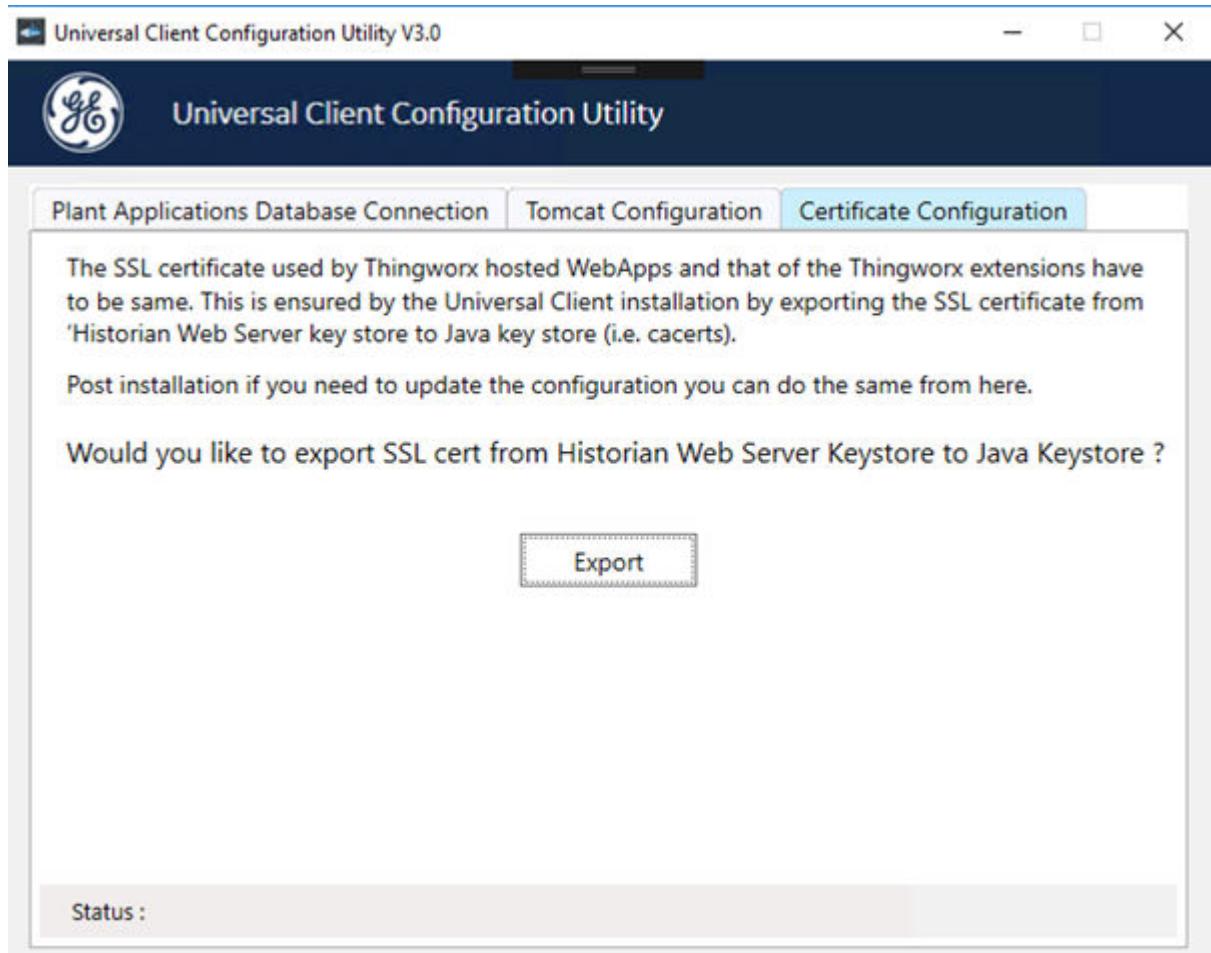
1. Run the Universal Client Configuration Utility installed with Plant Applications Universal Client.

   Tip: After the successful installation of the Plant Applications Universal Client, the installer creates a shortcut for the utility with the name Utility for Universal Client V3.0 on the desktop of your computer.

   The **Universal Client Configuration Utility** window appears.
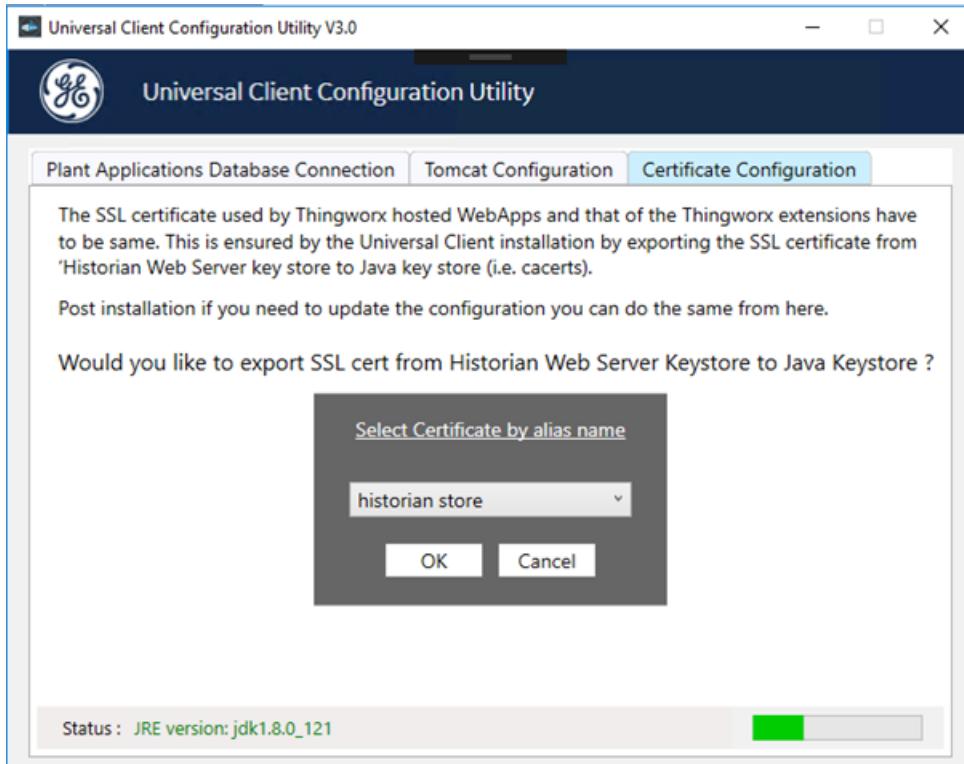
2. Select the **Certificate Configuration** tab.
   The **Certificate Configuration** section appears.

3. Select **Export**.
   The **Select Certificate by alias name** window appears.

4. Select the alias name of the GE Proficy Historian Server KeyStore, and then select **OK**.
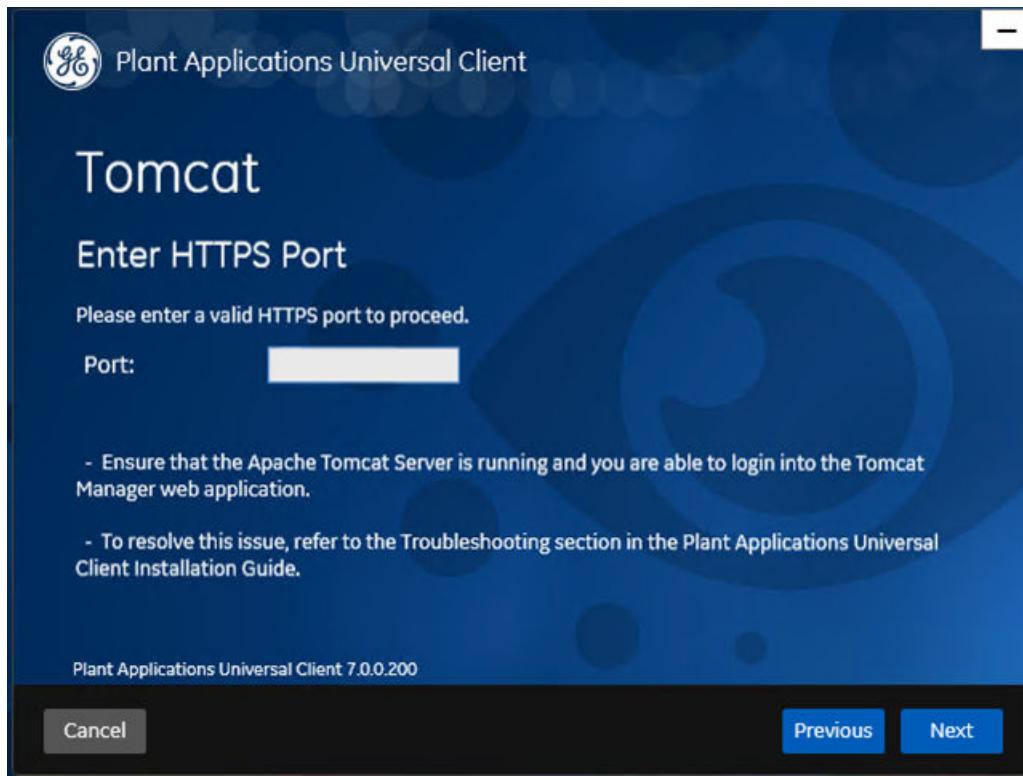
   The Historian certificate from the GE Proficy Historian Server KeyStore is imported to the Java KeyStore. You can now log in to the Plant Applications Universal Client.

• What should I do if the installation of GE Proficy Historian Server fails?

   If Transport Layer Security (TLS) 1.1 or 1.2, or the security policy for using the FIPS compliant algorithms is enabled, the Historian installation process fails. To install Historian successfully, you must temporarily disable the required feature, and then after successful Historian installation enable the feature again.

Troubleshoot the Tomcat Error

About This Task

The following **Tomcat** screen appears when you try to upgrade the Plant Applications Universal Client and there is an issue with the Tomcat service.

To troubleshoot the Tomcat service error, perform the following steps:
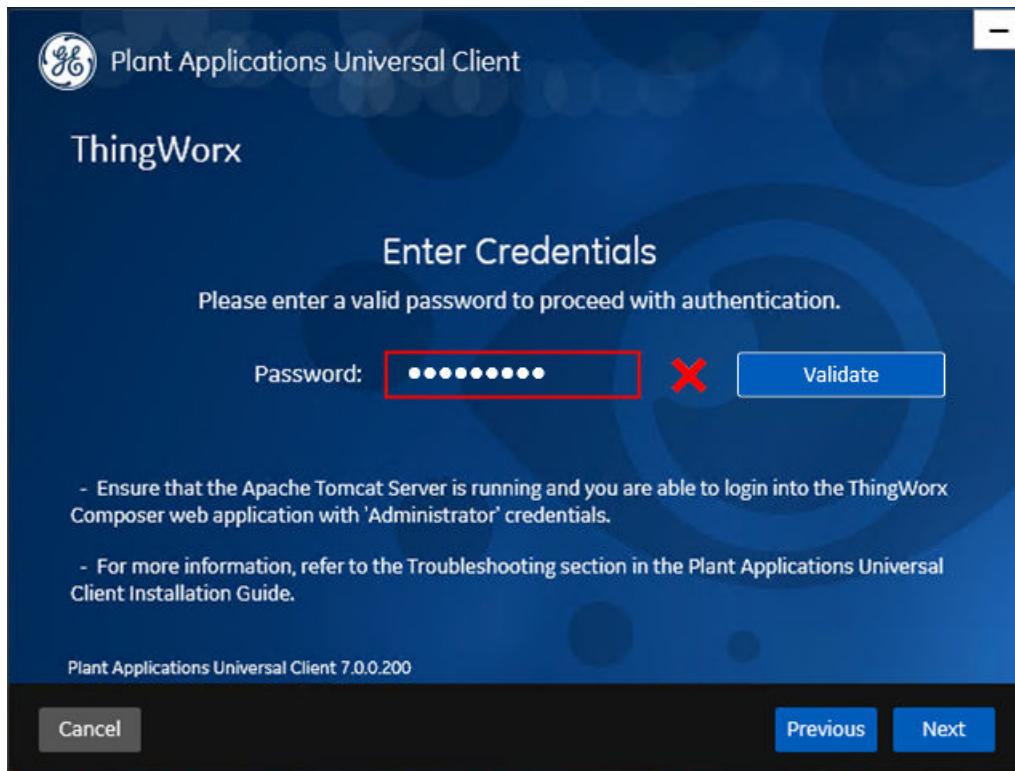
Procedure

1. In the **Tomcat** window, ensure that you have entered the correct **HTTPS** port to continue with the installation.
2. Ensure that the Tomcat service is running.

    a. Log in to the computer where you installed the Plant Applications Universal Client.
    b. Select **Start**, and then search for the Services application.
    c. In the command prompt, enter `services.msc`.
       The **User Account Control** window appears.
    d. Select **Yes**.
       The **Services** window appears.
    e. Verify that the **Status** of the Tomcat service configured during the Plant Applications Universal Client installation appears as **Running**. If not, start the service.

Troubleshoot the ThingWorx Composer Error

About This Task

The following **ThingWorx** screen appears when you try to upgrade the Plant Applications Universal Client and there is an issue with the ThingWorx Composer.

To troubleshoot the ThingWorx Composer error, perform the following steps:
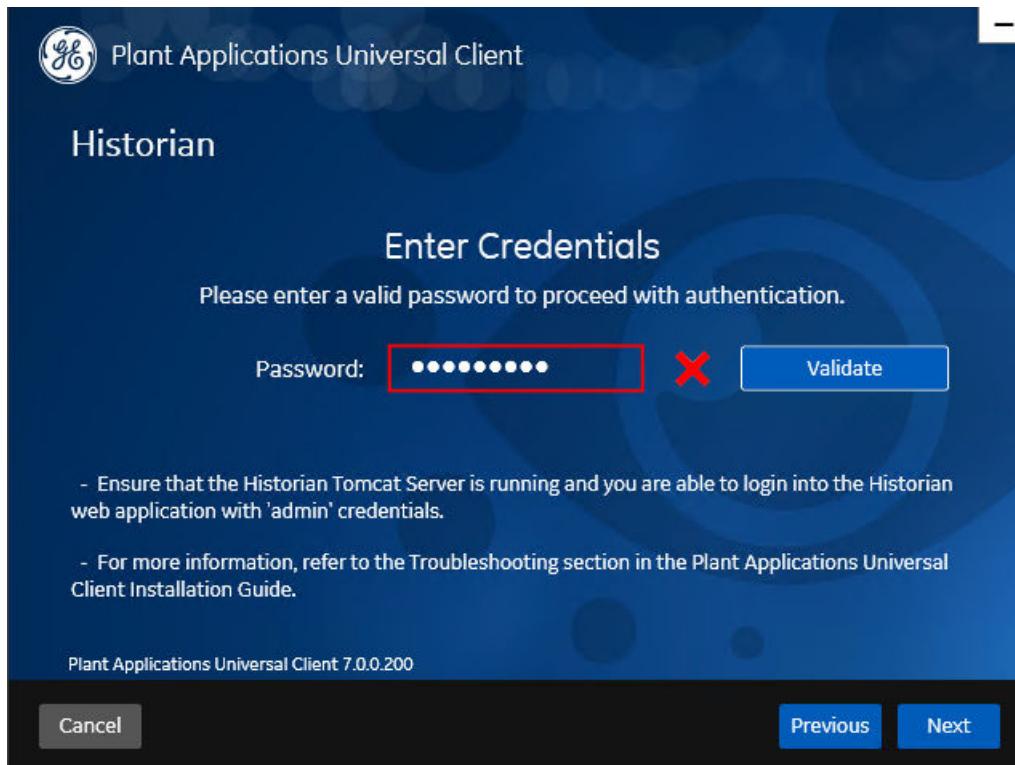
Procedure

1. Ensure that the Tomcat service is running.

   a. Log in to the computer where you installed the Plant Applications Universal Client.
   b. Select **Start**, and then search for the Services application.
   c. In the command prompt, enter `services.msc`.
      The **User Account Control** window appears.
   d. Select **Yes**.
      The **Services** window appears.
   e. Verify that the **Status** of the Tomcat service configured during the Plant Applications Universal Client installation appears as **Running**. If not, start the service.
2. Ensure that you are logged in to the ThingWorx Composer as an administrator.

Troubleshoot the Historian Error

About This Task

The following **Historian** screen appears when you try to upgrade the Plant Applications Universal Client and there is an issue with the GE Proficy Historian Server that acts as the User Authentication Service (UAA) server.

To troubleshoot the GE Proficy Historian Server error, perform the following steps:

Procedure

1. Ensure that the Historian Embedded Tomcat Container service is running.

   a. Log in to the computer where you installed the Plant Applications Universal Client.
   b. Select **Start**, and then search for the Services application.
   c. In the command prompt, enter `services.msc`.
      The **User Account Control** window appears.
   d. Select **Yes**.
      The **Services** window appears.
   e. Verify that the Status of the Historian Embedded Tomcat Container appears as Running. If not, start the service.

2. Ensure that you logged in to the UAA server as an Historian administrator.

Chapter

7

Reference

Topics:

- Configure the GE Proficy Historian Server Security Settings

Configure the GE Proficy Historian Server Security Settings

About This Task

Configure the security settings in the GE Proficy Historian Server to enable the Plant Applications Universal Client to use the GE Proficy Historian Server as the User Account and Authentication (UAA) server.

Procedure

1. Log in to the Proficy Historian Administrator.
2. Select **DataStores**.
3. Select the **Security** tab.
4. In the **Enforce Strict Client Authentication** row, select **Disabled**.
5. In the **Enforce Strict Collector Authentication** row, select **Disabled**.
6. Select **Update**.
   The GE Proficy Historian Server is now configured for the Plant Applications Universal Client. You can now install the Plant Applications Universal Client on the same computer as the GE Proficy Historian Server.