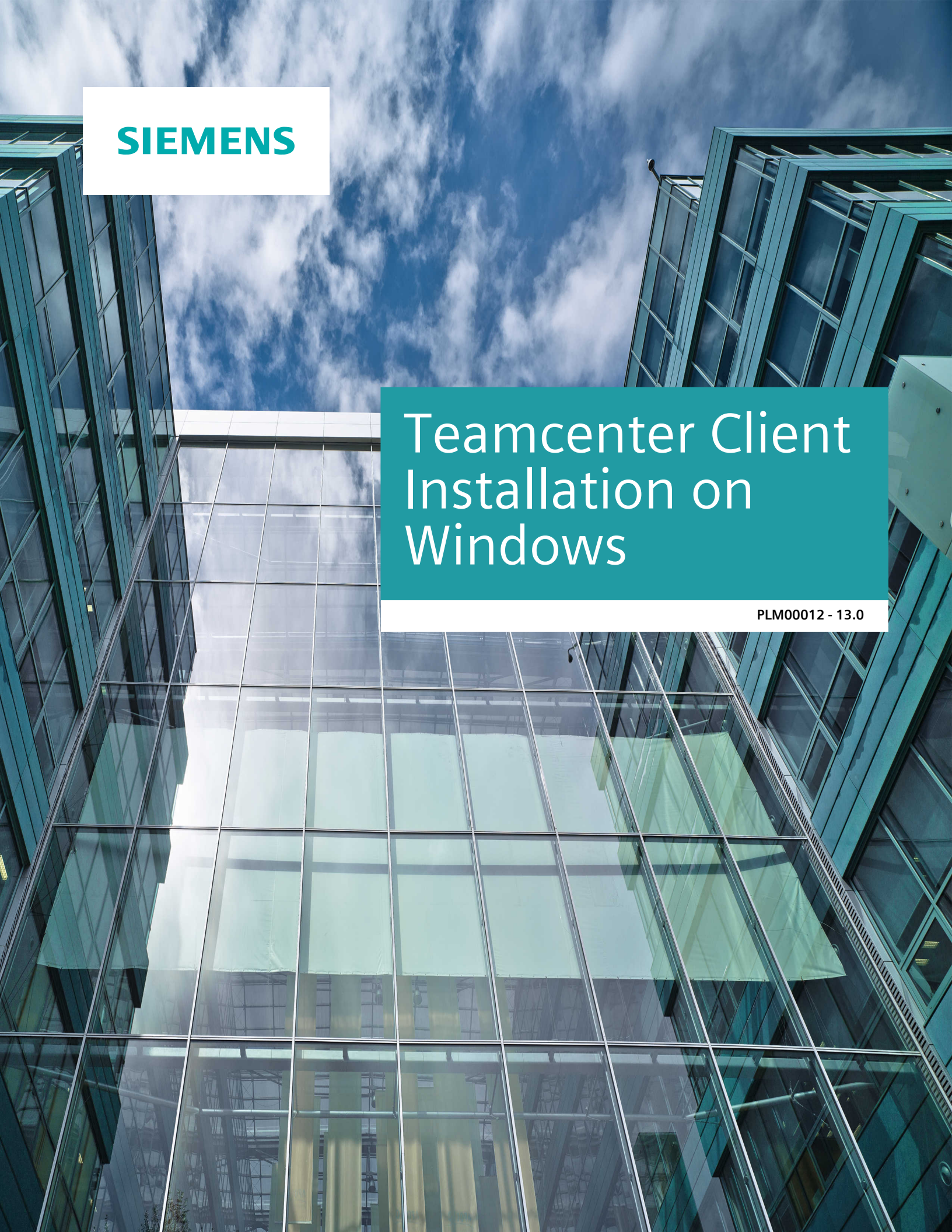


SIEMENS

Teamcenter Client Installation on Windows

PLM00012 - 13.0

Contents

1. Getting started with Teamcenter client installation

Introduction to Teamcenter client installation

This guide describes how to install Teamcenter 13.0 on Microsoft Windows clients. This includes installation of Teamcenter two-tier and four-tier rich clients using Teamcenter Environment Manager.

This guide assumes you have a thorough working knowledge of your operating system and general knowledge of Teamcenter use.

System requirements

Where to find system requirements

For versions of system software and hardware certified for running Teamcenter on your platform, see the Hardware and Software Certifications knowledge base article on Support Center:

https://support.sw.siemens.com

This article describes where to find certified software versions for:

- Operating systems
- Databases
- C++ compilers
- Web servers
- Java
- Other third-party software

> Note:
>
> Some software requirements differ for non-English locales. When viewing the certification database, make sure you note any exceptions for your locale.

Platforms

Determine from the following table which Teamcenter 13.0 servers and clients are supported on your operating system. Bullet characters (•) denote supported servers and clients.

Platform support for Teamcenter servers and clients

Operating system	Corporate server	Web tier	Rich client	Business Modeler IDE client	TCCS[1]
Microsoft Windows (desktop platforms)[2]			•	•	•
Microsoft Windows (server platforms)[3]	•	•		•	
SUSE Linux	•	•	•	•	•
Red Hat Linux[4]	•	•	•	•	•
CentOS Linux[5]	•	•	•	•	•

Notes about platform support

General notes

- For supported operating systems, see the Hardware and Software Certifications knowledge base article on Support Center.
- For information about tuning operating system performance for Teamcenter 13.0, see the *Teamcenter Deployment Guide* on Support Center.
- If your workstation is running Data Share Manager, close Data Share Manager (stopping its Java process) before upgrading.

Microsoft Windows

- On Windows platforms, disable Windows User Account Control (UAC) before you install Teamcenter. This option is available in the **Control Panel→User Accounts** dialog box. Windows UAC can interfere with Teamcenter installation programs. Siemens Digital Industries Software recommends turning off UAC for administrative users only. For more information, see Microsoft Windows documentation.
- Disable the Windows TCP scaling feature. Open a command prompt and enter the following command:

```
netsh interface tcp set global autotuninglevel=disabled
```

1 Teamcenter client communication system (TCCS) is installed with the rich client. This column refers to the stand-alone TCCS application.
2 Microsoft Windows desktop platforms include Windows 10.
3 Microsoft Windows server platforms include Windows Server 2012 and Windows Server 2016.
4 Only 64-bit Red Hat Linux is supported.
5 Only 64-bit CentOS Linux is supported.

Siemens Digital Industries Software recommends setting this parameter before installing Teamcenter because most client network infrastructures use one or more switches or routers. By default, Windows enables TCP window scaling, but some routers do not support this feature. This can cause installation failures that are difficult to diagnose and correct.
For more information, see Microsoft Windows documentation.

- If you use a nonnative language operating system version of Windows, you must install and enable the Multilingual User Interface (MUI) pack to ensure the language font is displayed properly.

  1. Download and install the MUI pack for Windows from Microsoft.
  2. Open the **Regional and Language Options** dialog box in the Windows Control Panel.
  3. In the **Languages** tab, set the required language for the menus and dialogs.
  4. In the **Advanced** tab and the **Regional Options** tab, set the required language.

  If you use Teamcenter Client for Microsoft Office on a non-English version of Windows, install the Multilingual User Interface (MUI) Pack for your version of Microsoft Office. This is required because .NET add-ins require English support.

System hardware

Hardware requirements for a Teamcenter deployment vary depending on several considerations, such as whether your deployment contains:

- A single host or multiple hosts
- Rich client, Active Workspace, or both
- Additional components such as Dispatcher Server on separate hosts

The *Teamcenter Server Hardware Overview* available on the documentation site on **Support Center** contains hardware recommendations based on these and other variables.

Web browser

A web browser is required if you use the following:

- Teamcenter online help
- Active Workspace
- Deployment Center

For these products, Teamcenter supports the following web browsers:

- Windows systems: Microsoft Internet Explorer, Mozilla Firefox, and Google Chrome
- Linux systems: Mozilla Firefox and Google Chrome

> Note:
>
> Teamcenter online help is also supported on Google Chrome on all supported platforms.

For supported browser versions, see the Hardware and Software Certifications knowledge base article on Support Center.

Java Runtime Environment

Teamcenter Environment Manager (TEM) requires a supported 64-bit Java Runtime Environment (JRE). If a certified JRE is not available on the host, TEM cancels installation.

Before you launch TEM to install Teamcenter:

1. Download and install a certified 64-bit JRE.

   For certified JRE versions, see the Hardware and Software Certifications knowledge base article on Support Center.

2. Set the **JRE_HOME** environment variable to the location of the supported JRE. After installation is complete, TEM no longer requires this variable.

   Alternatively, you can launch TEM in a command prompt and specify the JRE location using the **-jre** argument:

   ```
   tem -jre JRE-path
   ```

   For example:

   ```
   tem -jre c:\apps\jre1.8
   ```

Software integrations

If you use Teamcenter integrations to other Siemens Digital Industries Software products or third-party software, install those products *before* you install Teamcenter.

Some Siemens Digital Industries Software products require separate licenses from your Siemens Digital Industries Software representative. Siemens Digital Industries Software products are licensed using the Siemens Digital Industries Software Common Licensing Server.[6]

6 Installation of the Siemens Digital Industries Software Common Licensing Server is described in the server installation guides for Windows and Linux.

If you use any of the following integrations with the rich client, make sure you install these applications in locations specified by the Teamcenter administrator.

- Teamcenter Integration for NX or NX Integration
  Obtain the NX software kit and install a supported version of NX on your workstation according to the installation guide distributed with NX. You must install the optional Teamcenter Integration for NX executables.
  If your corporate server contains the **NX Foundation** feature, *all* servers and *all* two-tier rich clients in your environment must contain the **NX Rich Client Integration** feature.

  > Note:
  >
  > When you upgrade to a new version of NX, uninstall the **NX Rich Client Integration** feature in TEM, then reinstall this feature, specifying the path to the new NX installation in the **NX Install Location** box in TEM.

- Lifecycle Visualization
  Obtain the Lifecycle Visualization software kit and install a supported version of Lifecycle Visualization on your workstation.
  For installation information, see the installation guide distributed with Lifecycle Visualization.

- SCM Integration – ClearCase
  Obtain the IBM Rational ClearCase client software kit and install a supported version on your workstation.

> Note:
>
> Teamcenter Microsoft Office interfaces require **additional prerequisite software**.

Prepare Teamcenter software kits

Download Teamcenter software

From the download page on **Support Center**, download the Teamcenter software kit files for Windows:

Tc13.0_wntx64_1_of_2.zip
Tc13.0_wntx64_2_of_2.zip

Expand software kits

Expand both Teamcenter software kit ZIP files to a common directory to assemble the full software kit.

Use a commercial unzip utility such as **7-Zip** to expand files.

> Note:
>
> Contents of Teamcenter software kits are described in the server installation guides for Windows and Linux.

Locate all required software kits

Using kits on a non-local drive

Teamcenter cannot be installed from UNC paths, for example, **\\mediaserver\tcmedia**. If the software kit is located on a remote host, map a drive to the software location using the **net use** command:

1. Open an administrator command prompt using one of the following methods:

   - From the Windows **Start** menu, right-click **All Programs→Accessories→Command Prompt** and choose **Run as administrator**.
   - In the Windows **Start Search** box, type **cmd**, and then press Ctrl+Shift+Enter. If Windows displays the **User Account Control** dialog box, click **Yes** to continue.

2. Type the **net use** command:

   ```
   net use drive-letter: UNC-path
   ```

   For example:

   ```
   net use z: \\mediaserver\tcmedia
   ```

Choose an online help source

You can access Teamcenter online help from two sources.

Online help source:	Support Center	Siemens Documentation Server
Access required	Internet access	Local network access
Benefits	• Eliminates the need to install and maintain documentation on user desktops or intranet. • Provides secure access through a generated API key specific to your site.	• Local access to help for all products and versions you use, in multiple languages. • No Internet access required.

Online help source:	Support Center	Siemens Documentation Server
	• Requires no log on.	
Software to install	Secure Documentation Proxy	1. Siemens Documentation Server To enable access for multiple hosts in your network, configure multiuser mode. 2. Product documentation

To configure client access to online help:

1. Choose how you want to access online help.

2. Download and install the appropriate software from Support Center.

3. Supply the appropriate online help URL to the rich client:

   http://*domain***/en-US/product/282219420/doc/PL20200109161601697.xid1899404/html/xid1899405**

   Replace *domain* with the source from which you access online help:

   - Support Center: **docs.sw.siemens.com**
   - Siemens Documentation Server: *doc-server-host*:*doc-server-port*

Basic concepts about Teamcenter installation

Teamcenter clients

Teamcenter provides clients suited to different uses and network configurations. These include the rich client and Active Workspace, plus integrations like Teamcenter Client for Microsoft Office and Teamcenter Extensions for Microsoft Office.

- **Rich client**

  The *rich client* is a platform-independent client implementation (Java application) for users who interact with Teamcenter frequently. It is extendable to run standard Teamcenter and customized applications.
  The rich client application is deployed on each user workstation using Teamcenter Environment Manager. The rich client is supported in both the **two-tier architecture** and **four-tier architecture**.

- **Active Workspace**

Active Workspace is a web client that features a simplified interface highly configurable to an industry, group, role, or individual user. It provides a broad set of Teamcenter functionality with enhanced search capability and mobile device support.
Installation and configuration of Active Workspace is described in the Active Workspace help, not in the Teamcenter help.

Teamcenter clients can be installed on Windows or Linux

Teamcenter network architectures

Two-tier architecture

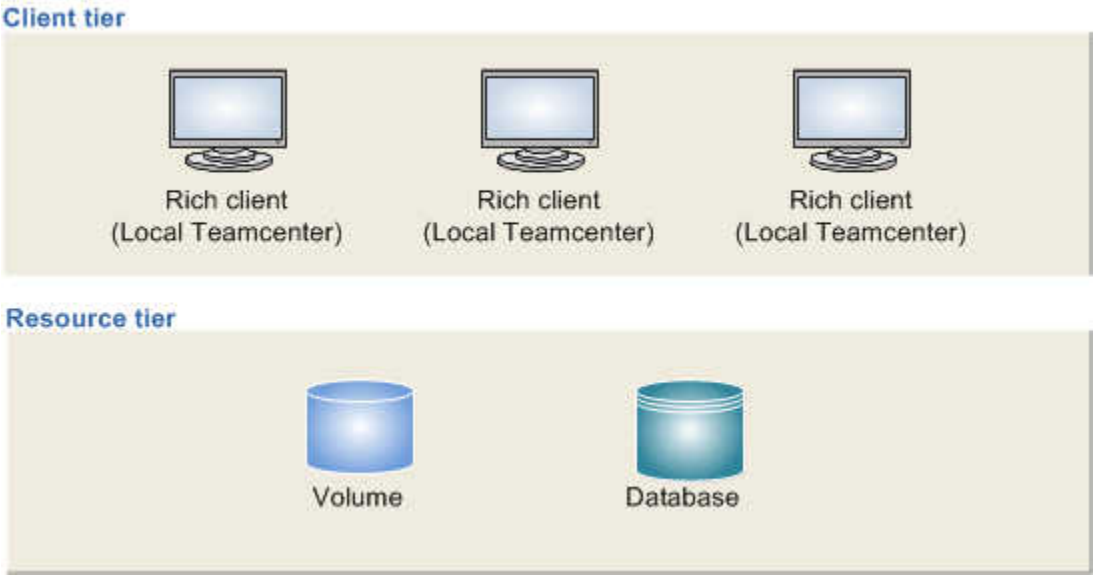
The two-tier architectural model comprises the following tiers:

- Client tier
  The client tier comprises the Teamcenter rich clients.
  In a deployment of the two-tier architecture, the Teamcenter server runs on the client workstation.

  > Note:
  >
  > The two-tier rich client is installed through TEM.
  >
  > Some Teamcenter client features, such as Teamcenter Integration for NX, Lifecycle Visualization, and Teamcenter Client for Microsoft Office, require the web tier, a component of the four-tier architecture. To enable these features for a two-tier rich client, you can connect the two-tier rich client to a deployment of the web tier on a Windows host or on a Linux host.

- Resource tier
  The resource tier comprises a database server, database, volumes, and file servers.

Two-tier architecture

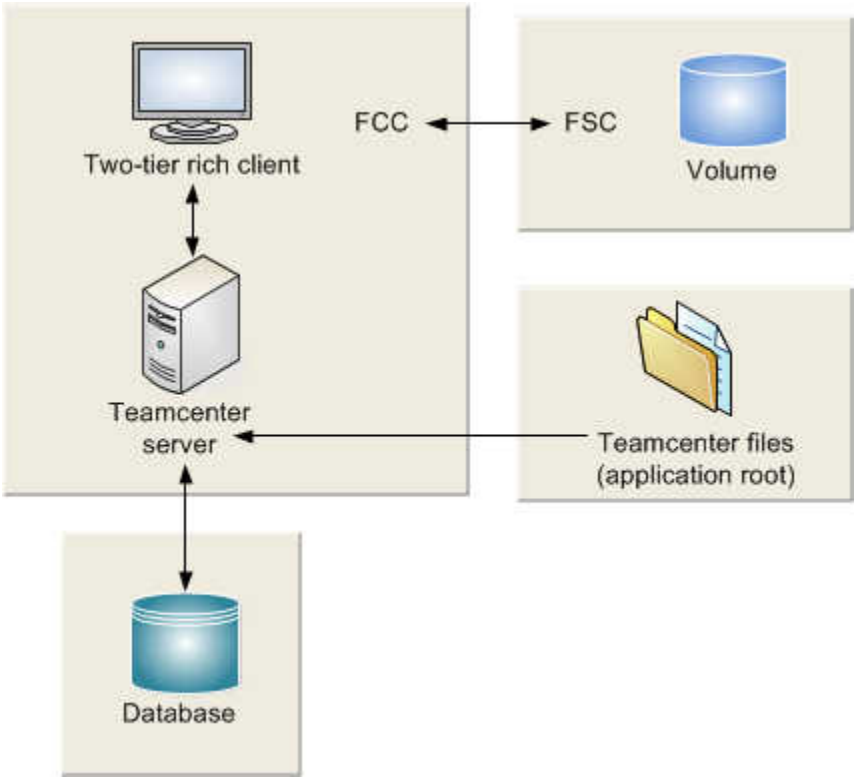


In the two-tier model, you deploy the Teamcenter rich client, which includes the local server, and the optional applications that integrate with the rich client on the client workstation. Typically, the database server, volumes, and file servers are installed on one or more separate hosts.

Teamcenter File Management System (FMS) manages the rich client access to volumes:

- The FMS server cache (FSC) process run on the server hosting the volume.
- The FMS client cache (FCC) process runs on the rich client host.

Two-tier deployment



Four-tier architecture

The four-tier architecture model comprises the following tiers:

- Client tier
  The client tier comprises the Teamcenter rich client, and other clients such as Teamcenter Client for Microsoft Office.

  > Note:
  >
  > The rich client can be deployed with additional functionality, such as Lifecycle Visualization, Teamcenter Client for Microsoft Office, and Teamcenter Integration for NX or NX Integration 4.0.1. (Teamcenter Integration for NX/NX Integration 3 is not supported.)

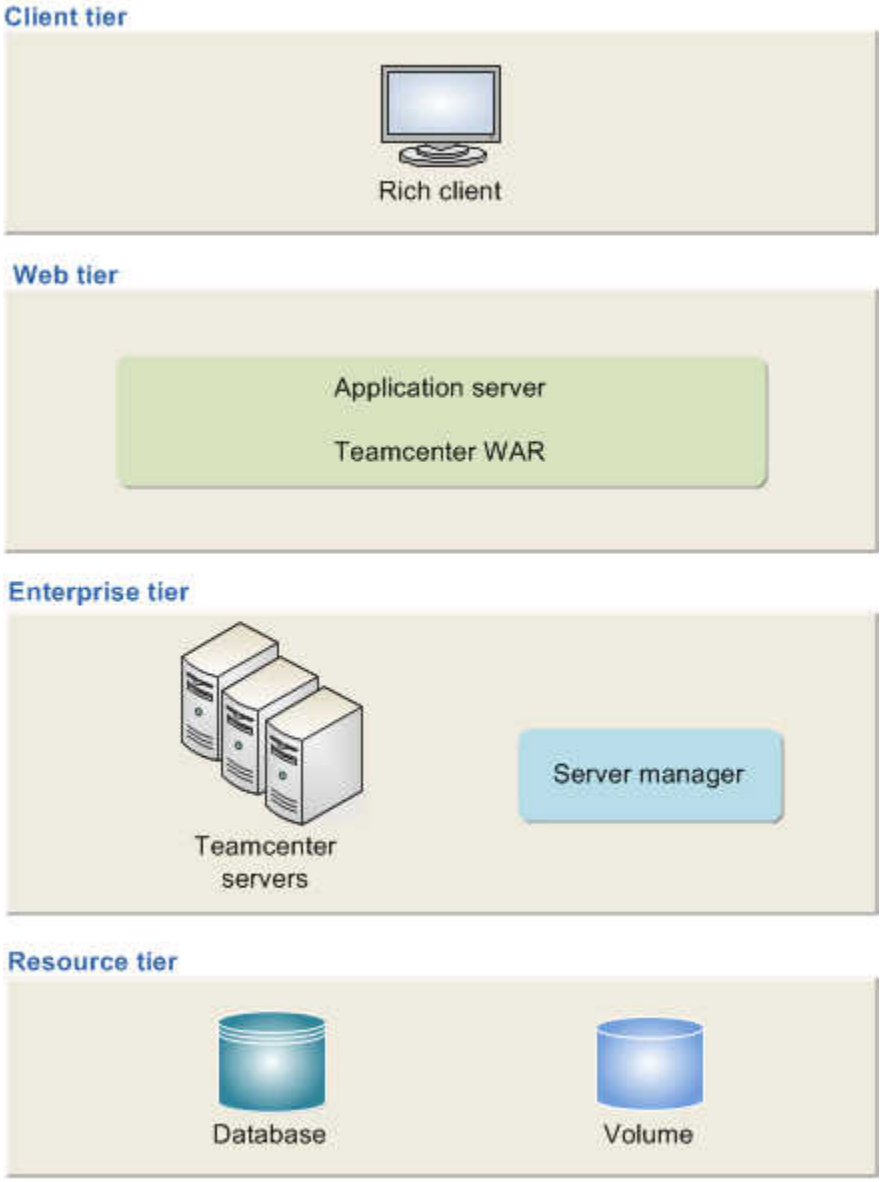
- Java EE web tier
  The Java EE web tier is a Java application that runs in a Java Enterprise Edition (Java EE) application server, such as Oracle WebLogic, and is responsible for communication between the client tier and enterprise tier. For information about supported application servers, the Hardware and Software Certifications knowledge base article on Support Center.

- Enterprise tier
  The enterprise tier comprises a configurable pool of Teamcenter C++ server processes and a server manager. The enterprise tier retrieves data from and stores data in the database.

A server manager manages a pool of Teamcenter server processes. You must install a server manager whenever you deploy the web tier.

- Resource tier
  The resource tier comprises a database server, database, volumes, and file servers.

Four-tier architecture



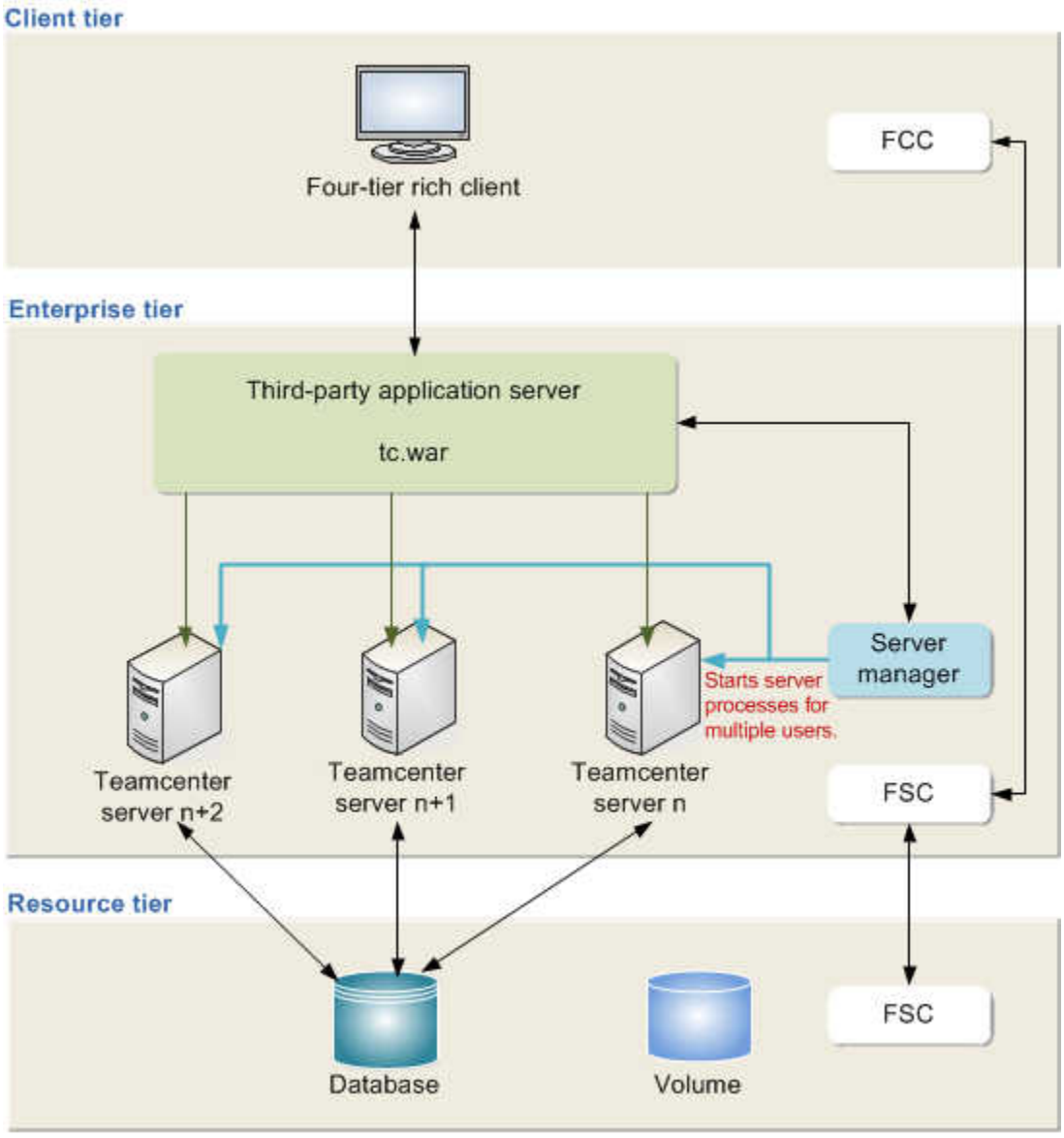
You can design deployments that host the web tier, resource tier, and enterprise tiers on the same computer or on separate computers:

- Smaller sites can run the pool of servers and the server manager on the same host as the web tier.
- Larger sites can distribute the pool of server processes across multiple hosts and optionally include an HTTP server to serve static files or multiple HTTP servers to support load balancing.
  For a multihost configuration, the server pool consists of multiple subpools, one or more for each host. Each subpool is managed by one server manager process. The web tier balances the load across the server pools.

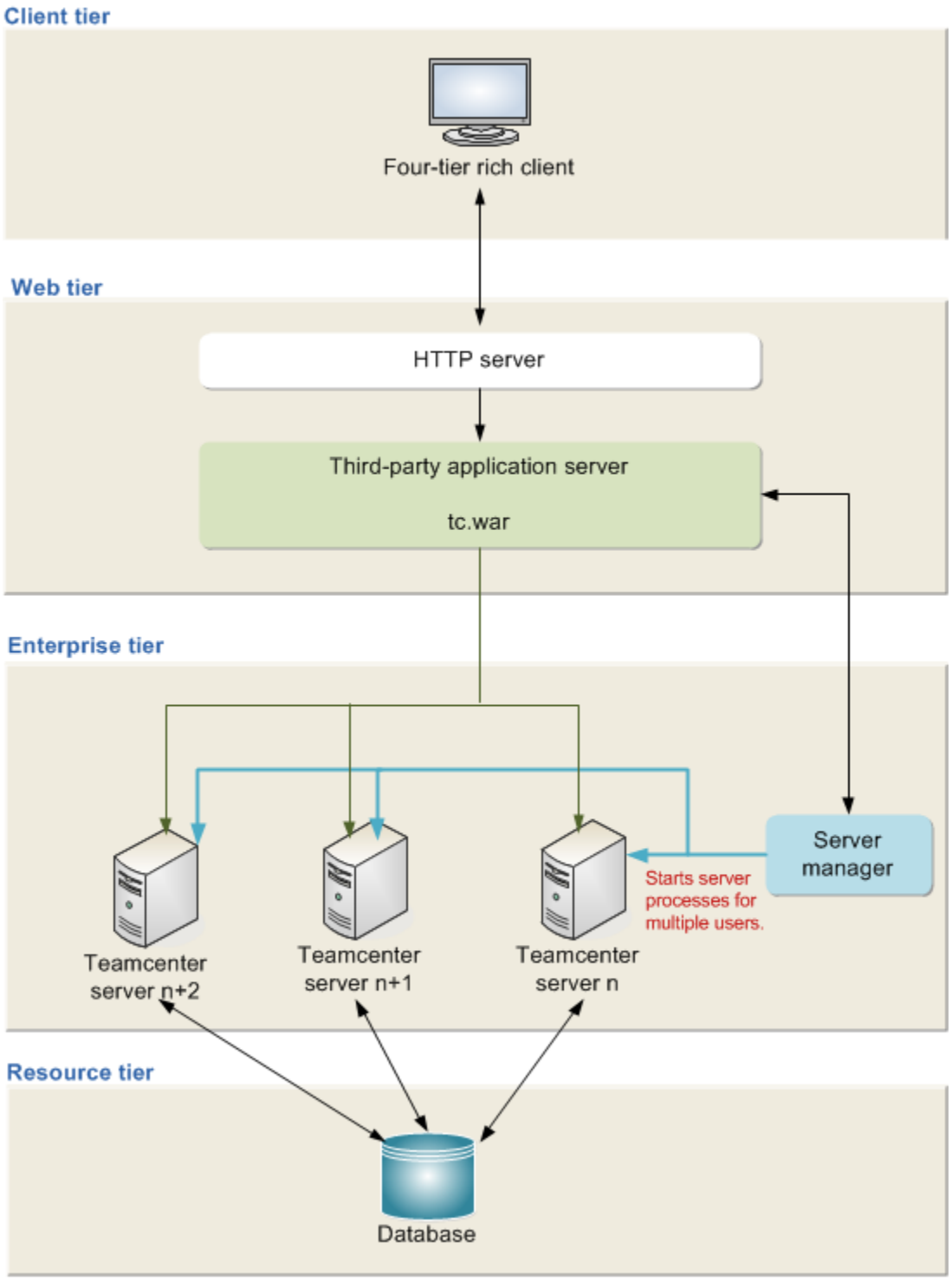
To ensure communication between the web tier and the server manager, you must coordinate the values you specify for each component. For some values, you must provide the identical value when configuring the web tier application.

For more information about four-tier rich client architecture, see the appropriate Teamcenter server installation manual (for Windows or Linux).

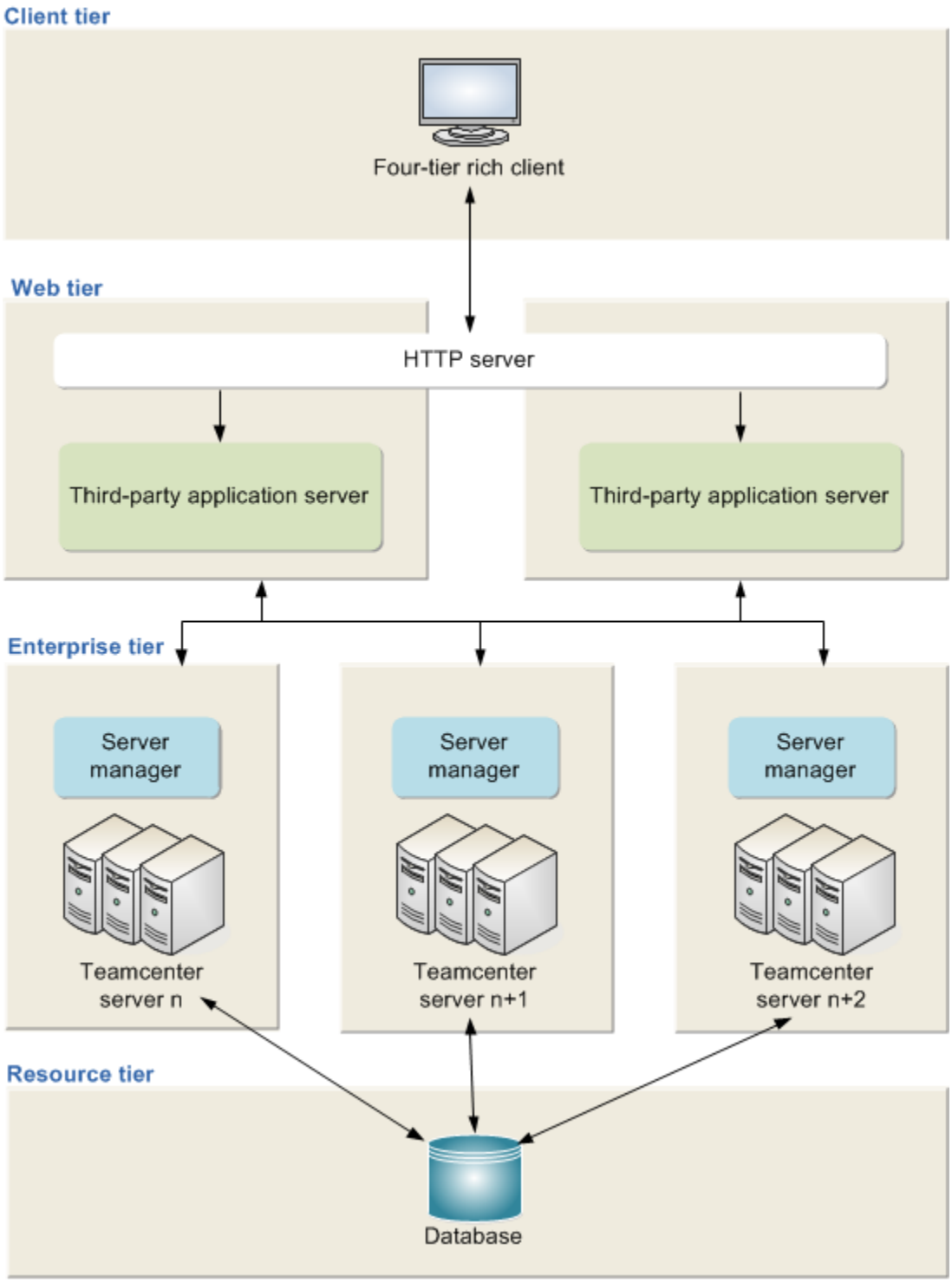
Four-tier deployment (enterprise and web tiers on same host)



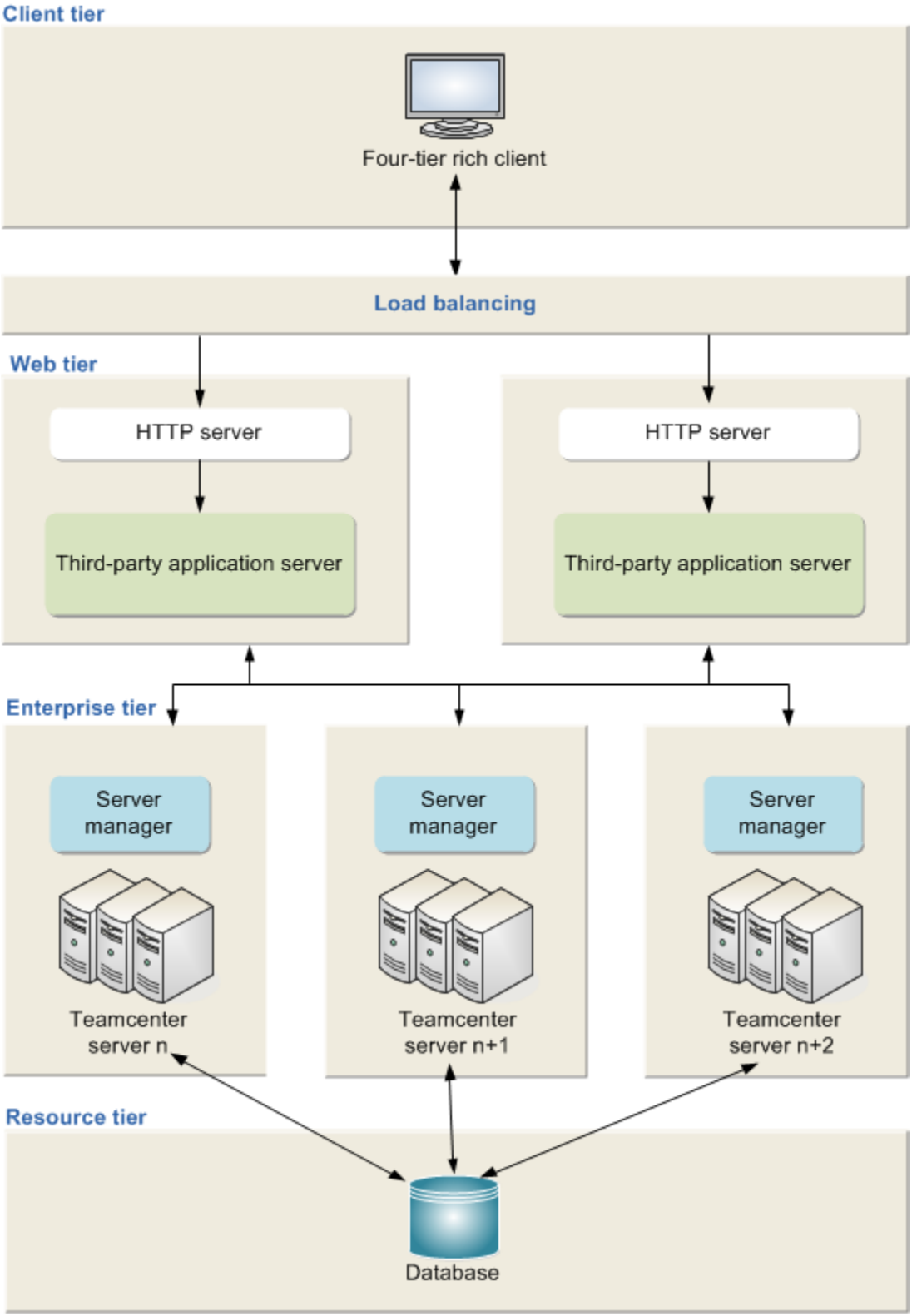
Four-tier deployment (enterprise and web tiers on separate hosts with HTTP server)



Four-tier deployment (multiple enterprise tier hosts and web tier hosts)



Four-tier deployment (load balancing)



Managing data with File Management System (FMS)

File Management System (FMS) is a file storage, caching, distribution, and access system. FMS provides global, secure, high-performance and scalable file management. Use FMS to centralize data storage volumes on reliable backup file servers, while keeping data close to users in shared data caches. This enables centralized storage and wide distribution of file assets to the needed locations within a single standard file management system. FMS provides WAN acceleration to effectively move large files across WAN assets.

Teamcenter client installation programs installs FMS executables and an FMS client cache (FCC) on client hosts and sets the **FMS_HOME** environment variable in the user environment.

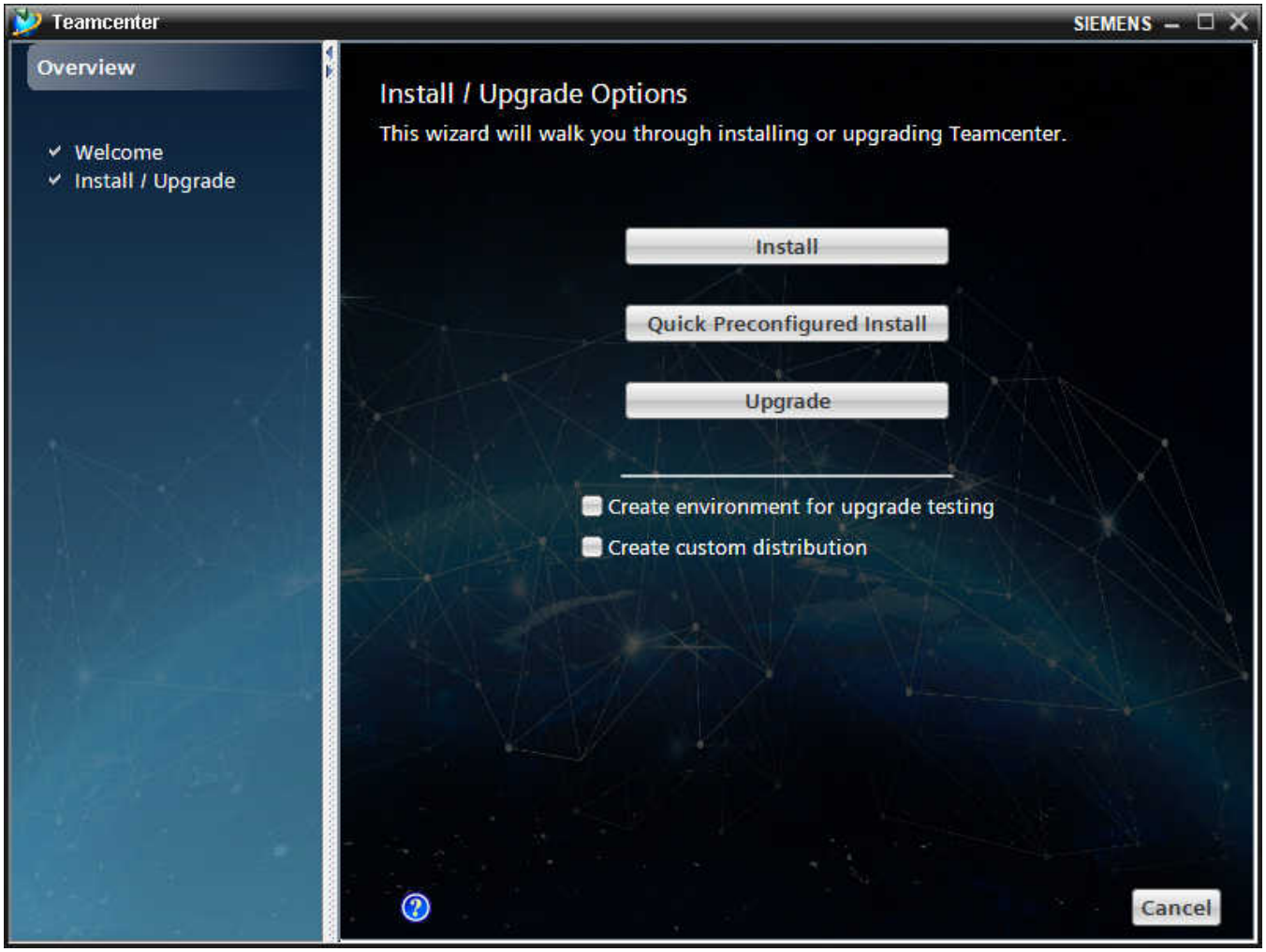
FMS downloads files to client hosts from Teamcenter volumes and uploads files from client hosts to Teamcenter volumes. **FMS_HOME** points to the location of the FMS executables on the client host. All Teamcenter clients installed on a host use the FMS executables defined in **FMS_HOME**.

If other users on a client host want to use the same installed client environment, they must manually set **FMS_HOME** in their user environments. Using the same installed environment shares only the binaries and run-time content; the file cache contents remain private to the user.

Teamcenter installation tools

Teamcenter Environment Manager

Teamcenter Environment Manager (TEM) is a tool that installs Teamcenter two-tier and four-tier rich clients.



Teamcenter Environment Manager

TEM also performs maintenance operations, such as upgrading servers, applying minor releases, and installing patches.

During installation, upgrade, and maintenance, you can select features to add to a Teamcenter configuration in the **Features** panel in TEM. For a description of any feature, point to the feature in the list.

You launch TEM using the **tem.bat** command.

For more information about any panel in TEM, click the help button .

2. Installing the rich client

Overview of rich client installation

Teamcenter provides three rich client configurations:

- **Teamcenter Rich Client (2-tier and 4-tier)**

  Provides a rich client that is configurable for two-tier or four-tier operation.
  This rich client connects to the Teamcenter server (in a two-tier environment) or web tier (in a four-tier environment) using Teamcenter client communication system (TCCS).

- **Teamcenter Rich Client 2-tier**

  Provides a Teamcenter two-tier rich client that communicates with the Teamcenter corporate server using IIOP protocol. It supports most Teamcenter features and does not require a web tier.

- **Teamcenter Rich Client 4-tier**

  Installs a four-tier rich client that connects directly to the Teamcenter web tier using HTTP protocol.

> Note:
>
> IIOP-based communication in the two-tier rich client is deprecated and will be removed in a future version of Teamcenter. Siemens Digital Industries Software recommends using the **Teamcenter Rich Client (2-tier and 4-tier)** feature, which uses TCCS communication.

The two-tier and four-tier rich clients are installed using Teamcenter Environment Manager (TEM).

A two-tier rich client connects to an existing Teamcenter corporate server. A four-tier rich client connects to an existing Teamcenter web tier.

Before you install the rich client:

- Make sure your client host meets the **system hardware and software requirements**.
- Obtain your Teamcenter user name and password from the Teamcenter administrator for logging on to the rich client.
- If the Teamcenter administrator configured the rich client to include Lifecycle Visualization, ensure you have administrator privileges on your workstation.

> Note:
>
> The automatic logon feature is not supported in four-tier Teamcenter deployments.

Installing the rich client using TEM

Install the rich client (TCCS-based)

Install a Teamcenter rich client that is configurable for two-tier or four-tier operation. This configuration connects to the Teamcenter server (in a two-tier environment) or web tier (in a four-tier environment) using Teamcenter client communication system (TCCS).

> Note:
>
> The Windows User Access Control (UAC) feature, if enabled, may interfere with configuration of some rich client features.

1. **Install the prerequisite software** on the client host. Teamcenter Environment Manager (TEM) does not install the prerequisite software.

   > Note:
   >
   > Installation of the prerequisite software requires administrative privileges.

2. **Specify the path to the required Java Runtime Environment (JRE)** by setting the **JRE64_HOME** environment variable on your host.

3. Locate the Teamcenter software kit.

   You can install the rich client from a full distribution downloaded from **Support Center** or from a compact distribution created by your Teamcenter administrator.[1]

4. Start Teamcenter Environment Manager (TEM):

   a. Browse to the root directory of the Teamcenter software kit.

   b. Right-click the **tem.bat** program icon and choose **Run as administrator**.

5. In the **Welcome to Teamcenter** panel, select **Teamcenter**.

6. In the **Install/Upgrade Options** panel, click **Install**.

   > Note:
   >
   > Alternatively, you can click **Quick Preconfigured Install** and then select one of the available preconfigured rich client configurations.

1 A compact distribution package is much smaller than a full Teamcenter software kit and may contain a selected subset of features.

For more information about quick preconfigured installation, see the help available from the help buttons  in TEM.

7. In the **Media Locations** panel, enter paths to any Teamcenter patches or minor releases you want to apply during installation. This step is optional.

8. In the **Configuration** panel, type an ID and a description for the new Teamcenter configuration.

   Note:

   The configuration ID identifies your configuration when you perform maintenance tasks in TEM. Also, installation log files reference your configuration by this ID.

9. In the **Solutions** panel, select **Rich Client (2-tier and 4-tier)**.

10. Proceed to the **Features** panel. In the **Installation Directory** box, enter the path and directory in which you want to install the rich client. The directory must not exist. (TEM creates the directory.)

11. The **Teamcenter Rich Client (2-tier and 4-tier)** feature is selected by default.

    Select any additional features you want to include in your rich client configuration.

    If you are configuring the rich client for two-tier operation, make sure you select the same features included in your corporate server configuration, including custom features. This ensures all associated run-time server components and rich client plugins are available in the rich client.

    Note:

    If you select additional features, TEM displays additional panels during installation that are not described in this procedure.

    If you install the rich client from a **compact distribution** and you select features not included in the compact distribution media, TEM prompts you for the location of the full distribution media.

12. In the **File Client Cache (FCC)** panel, choose whether to use a new or existing FMS client cache (FCC).

    If you want to create a new FCC using the same settings as an existing FCC on your host, select the **Merge values from an existing FMS_HOME** ☑ check box.

13. In the **FCC Parents** panel, enter access information for the FMS server cache (FSC).

    a. Double-click the **Host** box, and then type the host name of the FSC.

b. Double-click the **Port** box, and then type the port used by the FSC. The default value is **4544**.

c. In the **Protocol** box, select the appropriate protocol used by the FSC.

If you want to add access to additional FSCs, click **Add** to add a row to the table, and then enter access information for the parent FSC. To remove a host from the list, select the row and click **Remove**.

If you use multiple FSCs, assign a connection priority to each using values in the **Priority** column.

> Note:
>
> You can configure File Management System further after installation.

14. Proceed to the **Configuration Selection for Client Communication System** panel.

    If you are a TCCS administrator, select **Shared** if you want this configuration to be used by multiple users, or select **Private** if this configuration is for your use only. By default, the shared configuration is used by the system for all users connecting using TCCS.

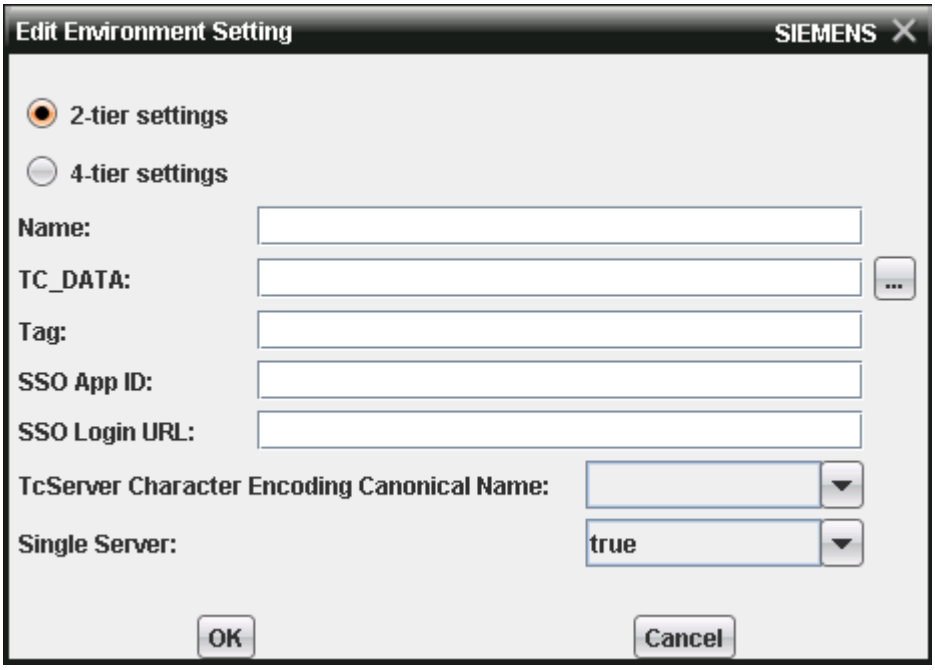
    Select whether to create a shared or private TCCS configuration. If you are not a TCCS administrator, you can only create a **Private** configuration for your use only. A TCCS administrator can create both shared and private configurations.

15. Proceed to the **Environment Settings for Client Communication System** panel.

    To add an environment to the table of TCCS environments, click **Add**. TEM displays the **Edit Environment Setting** dialog box.

    Select **2-tier settings** or **4-tier settings**, and then enter the required values for the selected deployment type.

    - **Two-tier deployment**

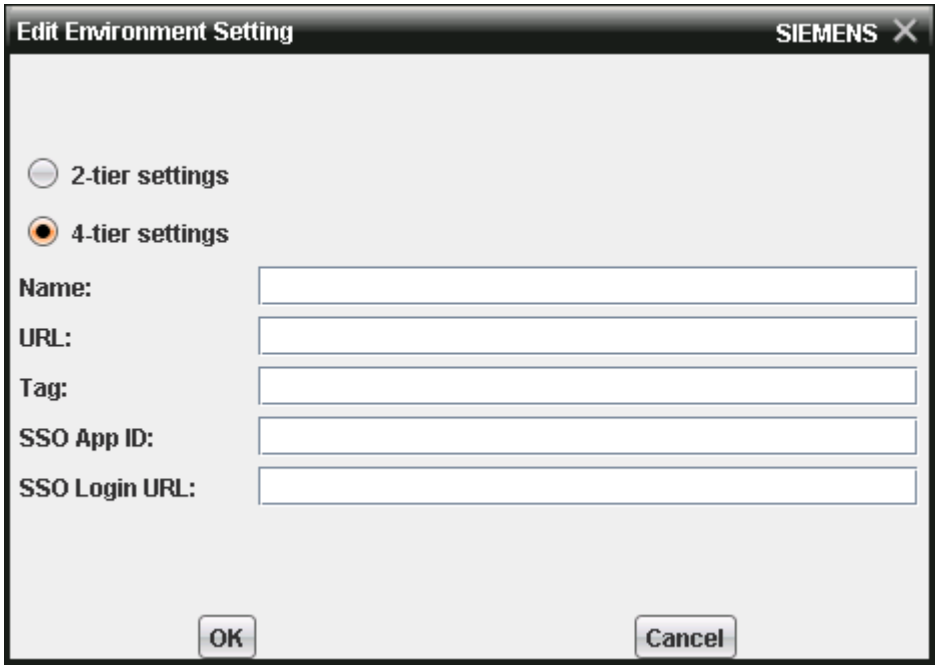


Value	Description
Name	Specifies a name for the TCCS environment.
TC_DATA	Enter the path to the data directory (**TC_DATA**) where you want Teamcenter Environment Manager to create shared data subdirectories and files.[2]
Tag	(Optional) Specifies a tag for the environment that can be used to filter the list of TCCS environments during rich client logon. In the **Client Tag Filter** panel during rich client installation, you can optionally provide a pattern to filter the list of environments displayed in the rich client to those environments that match the pattern. Example: You create 10 environments, three on **Server1** with Security Services, three on **Server1** without Security Services, and four on **Server2**. Tag the environments **SSO**, **no SSO**, and **Server2**, respectively.

2 This can be the network path to the **TC_DATA** directory on your corporate server.

Value	Description
SSO App ID	Specifies a Security Services (SSO) application ID. Type an application ID if you want to add a Security Services environment to your TCCS environment.
SSO Login URL	Specifies the logon URL to the Security Services environment. Note: You must set up the Security Services environment before you configure TCCS. For example, in the **SSO App ID** box, type the value of the **SSO_APPLICATION_ID** context parameter from the web tier installation. In the **SSO Login URL** box, type the value of the **SSO_LOGIN_SERVICE_URL** context parameter.
TcServer Character Encoding Canonical Name	Specifies the canonical name of the character encoding set Teamcenter clients use to access the database. Caution: To prevent data corruption, this character encoding set must match the encoding set used by the Teamcenter database.
Single Server	Specifies whether to force all client sessions for the given user to use the same **tcserver** process. If set to **true**, all client sessions use the same **tcserver**. Setting it to **false** allows clients to control sharing of **tcserver** processes.

- **Four-tier deployment**



Value	Description
Name	Specifies a name for the TCCS environment.
URL	Specifies the URL to the rich client middle tier. Type a URL of the following form: **http://***host***:***port***/tc**.
Tag	(Optional) Specifies a tag for the environment that can be used to filter the list of TCCS environments during rich client logon. In the **Client Tag Filter** panel during rich client installation, you can optionally provide a pattern to filter the list of environments displayed in the rich client to those environments that match the pattern. Example: You create 10 environments, three on **Server1** with Security Services, three on **Server1** without Security Services, and four on **Server2**. Tag the environments **SSO**, **no SSO**, and **Server2**, respectively.

Value	Description
SSO App ID	Specifies a Security Services (SSO) application ID. Type an application ID if you want to add a Security Services environment to your TCCS environment.
SSO Login URL	Specifies the logon URL to the Security Services environment. Note: You must set up the Security Services environment before you configure TCCS. For example, in the **SSO App ID** box, type the value of the **SSO_APPLICATION_ID** context parameter from the web tier installation. In the **SSO Login URL** box, type the value of the **SSO_LOGIN_SERVICE_URL** context parameter.

A single TCCS configuration can contain multiple environments. For example, you may want to install some TCCS environments with Security Services (SSO), some without SSO, or some environments on only certain servers. If you configure multiple environments, a selection list of environments is displayed during rich client logon.

For advanced TCCS settings, click **Advanced**.

16. Proceed to the **Client Tag Filter** panel.

    If multiple TCCS environments exist in your system, you can optionally limit the TCCS environments available to the rich client by specifying a pattern in the **Client Tag Filter** box. This pattern is used to filter the list of TCCS environments, which are each identified by a unique **Tag** value. Wildcard characters (*****) are allowed in the **Client Tag Filter** box.

    For example, if the **Client Tag Filter** value is set to **10.*** in the rich client, all TCCS environments with **Tag** values beginning with **10.** are available to the rich client. Environments with **Tag** values beginning with **11** are not available.

17. In the **Rich Client Settings** panel, specify online help settings.

    If you want to enable online help for the rich client, select the **Enable Online Help** check box, and then type the online help URL in the **Web server URL** box:

    https://*domain***/en-US/product/282219420/doc/PL20200109161601697.xid1899404/html/xid1899405**

Replace *domain* with the source from which you access online help:

- Support Center: **docs.sw.siemens.com**
- Siemens Documentation Server: *doc-server-host*:*doc-server-port*

If you do not want to enable online help during rich client installation, you can **configure online help access** after installation is complete.

> Note:
>
> To enable online help for the rich client, you must **install the required software for your selected online help source**, the Secure Documentation Proxy (for Support Center access) or the Siemens Documentation Server (for local network access).

18. If you want to specify Security Services settings or other advanced rich client settings, click **Advanced** in the **Rich Client Settings** panel.

19. Proceed to the **Confirmation** panel and review your selections. Click **Start** to install the rich client, or click **Back** to change your selections.

    When installation is complete, close TEM.

The installation places the Teamcenter rich client icon on your desktop. To start the rich client, either double-click the desktop icon or press the following shortcut keys:

Control+Shift+F

> Note:
>
> - After installation, you can find the rich client in the list of installed programs in the Windows control panel. The program name is displayed as **Teamcenter 13 (x64) (***TC_ROOT***)**.
>
> You can install multiple rich clients on a host. Each client is identified by its *TC_ROOT* location in the Windows program list.
>
> - If you upgrade your JRE after you install the rich client, you must **configure Teamcenter to use the new JRE**.
>
> - If your rich client configuration includes Teamcenter Automotive Edition–GM Overlay, you must **complete additional required configuration steps**.

Install the four-tier rich client (HTTP-based)

Install a four-tier rich client that connects to the Teamcenter web tier using HTTP protocol.

Note:

The Windows User Access Control (UAC) feature, if enabled, may interfere with configuration of some rich client features.

1. **Install the prerequisite software** on the client host. Teamcenter Environment Manager (TEM) does not install the prerequisite software.

   Note:

   Installation of the prerequisite software requires administrative privileges.

2. **Specify the path to the required Java Runtime Environment (JRE)** by setting the **JRE64_HOME** environment variable on your host.

3. Locate the Teamcenter software kit.

   You can install the rich client from a full distribution downloaded from **Support Center** or from a compact distribution created by your Teamcenter administrator.[3]

4. Start Teamcenter Environment Manager (TEM):

   a. Browse to the root directory of the Teamcenter software kit.

   b. Right-click the **tem.bat** program icon and choose **Run as administrator**.

5. In the **Welcome to Teamcenter** panel, select **Teamcenter**.

6. In the **Install/Upgrade Options** panel, click **Install**.

   Note:

   Alternatively, you can click **Quick Preconfigured Install** and then select one of the available preconfigured rich client configurations.

   For more information about quick preconfigured installation, see the help available from the help buttons  in TEM.

7. In the **Media Locations** panel, enter paths to any Teamcenter patches or minor releases you want to apply during installation. This step is optional.

8. In the **Configuration** panel, type an ID and a description for the new Teamcenter configuration.

3 A compact distribution package is much smaller than a full Teamcenter software kit and may contain a selected subset of features.

> Note:
>
> The configuration ID identifies your configuration when you perform maintenance tasks in TEM. Also, installation log files reference your configuration by this ID.

9. In the **Solutions** panel, select **Rich Client 4-tier**.

10. Proceed to the **Features** panel. In the **Installation Directory** box, enter the path and directory in which you want to install the rich client. The directory must not exist. (TEM creates the directory.)

11. The **Teamcenter Rich Client 4-tier** feature is selected by default.

    Select any additional features you want to include in your rich client configuration.

> Note:
>
> If you select additional features, TEM displays additional panels during installation that are not described in this procedure.
>
> If you install the rich client from a **compact distribution** and you select features not included in the compact distribution media, TEM prompts you for the location of the full distribution media.

12. In the **File Client Cache (FCC)** panel, choose whether to use a new or existing FMS client cache (FCC).

    If you want to create a new FCC using the same settings as an existing FCC on your host, select the **Merge values from an existing FMS_HOME** ☑ check box.

13. In the **FCC Parents** panel, enter access information for the FMS server cache (FSC).

    a. Double-click the **Host** box, and then type the host name of the FSC.

    b. Double-click the **Port** box, and then type the port used by the FSC. The default value is **4544**.

    c. In the **Protocol** box, select the appropriate protocol used by the FSC.

    If you want to add access to additional FSCs, click **Add** to add a row to the table, and then enter access information for the parent FSC. To remove a host from the list, select the row and click **Remove**.

    If you use multiple FSCs, assign a connection priority to each using values in the **Priority** column.

> Note:
>
> You can configure File Management System further after installation.

14. Proceed to the **4-tier server configurations** panel. In the **URI** column, enter the URI for the Teamcenter web tier server. In the **Connection Name** column, enter a name for the rich client connection.

> Note:
>
> If your network uses IPv6 (128-bit) addresses, use the hostname in URIs and do not use the literal addresses, so the domain name system (DNS) can determine which IP address should be used.

15. In the **Rich Client Settings** panel, specify online help settings.

    If you want to enable online help for the rich client, select the **Enable Online Help** check box, and then type the online help URL in the **Web server URL** box:

    https://*domain***/en-US/product/282219420/doc/PL20200109161601697.xid1899404/html/xid1899405**

    Replace *domain* with the source from which you access online help:

    - Support Center: **docs.sw.siemens.com**
    - Siemens Documentation Server: *doc-server-host*:*doc-server-port*

    If you do not want to enable online help during rich client installation, you can **configure online help access** after installation is complete.

> Note:
>
> To enable online help for the rich client, you must **install the required software for your selected online help source**, the Secure Documentation Proxy (for Support Center access) or the Siemens Documentation Server (for local network access).

16. If you want to specify Security Services settings or other advanced rich client settings, click **Advanced** in the **Rich Client Settings** panel.

17. Proceed to the **Confirmation** panel and review your selections. Click **Start** to install the rich client, or click **Back** to change your selections.

    When installation is complete, close TEM.

The installation places the Teamcenter rich client  icon on your desktop. To start the rich client, either double-click the desktop icon or press the following shortcut keys:

Control+Shift+F

Note:

- After installation, you can find the rich client in the list of installed programs in the Windows control panel. The program name is displayed as **Teamcenter 13 (x64) (***TC_ROOT***)**.

  You can install multiple rich clients on a host. Each client is identified by its *TC_ROOT* location in the Windows program list.

- If you upgrade your JRE after you install the rich client, you must **configure Teamcenter to use the new JRE**.

- If your rich client configuration includes Teamcenter Automotive Edition–GM Overlay, you must **complete additional required configuration steps**.

Install the two-tier rich client (IIOP-based)

Install a Teamcenter two-tier rich client that communicates with the Teamcenter corporate server using IIOP protocol. This configuration supports most Teamcenter features and does not require a web tier.

Note:

IIOP-based communication in the two-tier rich client is deprecated and will be removed in a future version of Teamcenter. Siemens Digital Industries Software recommends using the **Teamcenter Rich Client (2-tier and 4-tier)** feature, which uses TCCS communication.

Note:

The Windows User Access Control (UAC) feature, if enabled, may interfere with configuration of some rich client features.

1. **Install the prerequisite software** on the client host. Teamcenter Environment Manager (TEM) does not install the prerequisite software.

   Note:

   Installation of the prerequisite software requires administrative privileges.

2. **Specify the path to the required Java Runtime Environment (JRE)** by setting the **JRE64_HOME** environment variable on your host.

3. Locate the Teamcenter software kit.

You can install the rich client from a full distribution downloaded from **Support Center** or from a compact distribution created by your Teamcenter administrator.[4]

4. Start Teamcenter Environment Manager (TEM):

   a. Browse to the root directory of the Teamcenter software kit.

   b. Right-click the **tem.bat** program icon and choose **Run as administrator**.

5. In the **Welcome to Teamcenter** panel, select **Teamcenter**.

6. In the **Install/Upgrade Options** panel, click **Install**.

   > Note:
   >
   > Alternatively, you can click **Quick Preconfigured Install** and then select one of the available preconfigured rich client configurations.
   >
   > For more information about quick preconfigured installation, see the help available from the help buttons  in TEM.

7. In the **Media Locations** panel, enter paths to any Teamcenter patches or minor releases you want to apply during installation. This step is optional.

8. In the **Configuration** panel, type an ID and a description for the new Teamcenter configuration.

   > Note:
   >
   > The configuration ID identifies your configuration when you perform maintenance tasks in TEM. Also, installation log files reference your configuration by this ID.

9. In the **Solutions** panel, select **Rich Client 2-tier**.

10. Proceed to the **Features** panel. In the **Installation Directory** box, enter the path and directory in which you want to install the rich client. The directory must not exist. (TEM creates the directory.)

11. The **Teamcenter Rich Client 2-tier** feature is selected by default.

    Select any additional features you want to include in your rich client configuration.

    Make sure you select the features included in your corporate server configuration, including custom features. This ensures all associated run-time server components and rich client plugins are available in the rich client. For example, if your corporate server contains the **NX Foundation**

4 A compact distribution package is much smaller than a full Teamcenter software kit and may contain a selected subset of features.

feature, you must select the **NX Rich Client Integration** feature in your two-tier rich client. If you do not select all required client features, TEM prompts you later in the installation process to return to the **Features** panel and select them.

> Note:
>
> If you select additional features, TEM displays additional panels during installation that are not described in this procedure.
>
> If you install the rich client from a **compact distribution** and you select features not included in the compact distribution media, TEM prompts you for the location of the full distribution media.

12. In the **File Client Cache (FCC)** panel, choose whether to use a new or existing FMS client cache (FCC).

    If you want to create a new FCC using the same settings as an existing FCC on your host, select the **Merge values from an existing FMS_HOME** ☑ check box.

13. In the **FCC Parents** panel, enter access information for the FMS server cache (FSC).

    a. Double-click the **Host** box, and then type the host name of the FSC.

    b. Double-click the **Port** box, and then type the port used by the FSC. The default value is **4544**.

    c. In the **Protocol** box, select the appropriate protocol used by the FSC.

    If you want to add access to additional FSCs, click **Add** to add a row to the table, and then enter access information for the parent FSC. To remove a host from the list, select the row and click **Remove**.

    If you use multiple FSCs, assign a connection priority to each using values in the **Priority** column.

    > Note:
    >
    > You can configure File Management System further after installation.

14. In the **TcServer Character Encoding Settings** panel, make sure the values reflect the character set you use for Teamcenter. If you are not sure, accept the default settings.

15. In the **2-tier server settings** panel, define how you will access the Teamcenter corporate server.

    a. Make sure the **Connection Port** box reflects the port used by your Teamcenter corporate server.

    b. Specify database access for your rich client:

A. Click **Add**.

B. Enter the path to the data directory (*TC_DATA*) where you want Teamcenter Environment Manager to create shared data subdirectories and files.[5]

C. Enter a unique name for the connection.

D. Click **OK**.

E. If you want to add access to additional databases, repeat the previous four steps to add access information for each database.

To remove a database from the list, select the row and click **Remove**. To edit values for a database connection, select the row and click **Edit**.

If you connect to multiple databases, assign connection priority by selecting rows and clicking **Up** or **Down**.

> Note:
>
> If you want to **allow multiple concurrent user sessions** of your two-tier rich client, click **Advanced**. In the **Activation Mode** box, select **PER_CLIENT**. (The default value, **NORMAL**, does not allow multiple concurrent user sessions.)
>
> The number of user sessions allowed in **PER_CLIENT** mode is limited by the capabilities of your operating system.

16. In the **Rich Client Settings** panel, specify online help settings.

If you want to enable online help for the rich client, select the **Enable Online Help** check box, and then type the online help URL in the **Web server URL** box:

https://*domain***/en-US/product/282219420/doc/PL20200109161601697.xid1899404/html/xid1899405**

Replace *domain* with the source from which you access online help:

- Support Center: **docs.sw.siemens.com**
- Siemens Documentation Server: *doc-server-host*:*doc-server-port*

If you do not want to enable online help during rich client installation, you can **configure online help access** after installation is complete.

5 This can be the network path to the *TC_DATA* directory on your corporate server.

> Note:
>
> To enable online help for the rich client, you must **install the required software for your selected online help source**, the Secure Documentation Proxy (for Support Center access) or the Siemens Documentation Server (for local network access).

17. If you want to specify Security Services settings or other advanced rich client settings, click **Advanced** in the **Rich Client Settings** panel.

18. Proceed to the **Confirmation** panel and review your selections. Click **Start** to install the rich client, or click **Back** to change your selections.

    When installation is complete, close TEM.

The installation places the Teamcenter rich client  icon on your desktop. To start the rich client, either double-click the desktop icon or press the following shortcut keys:

Control+Shift+F

> Note:
>
> - After installation, you can find the rich client in the list of installed programs in the Windows control panel. The program name is displayed as **Teamcenter 13 (x64) (***TC_ROOT***)**.
>
>   You can install multiple rich clients on a host. Each client is identified by its *TC_ROOT* location in the Windows program list.
>
> - If you upgrade your JRE after you install the rich client, you must **configure Teamcenter to use the new JRE**.
>
> - If your rich client configuration includes Teamcenter Automotive Edition–GM Overlay, you must **complete additional required configuration steps**.

Alternate rich client configurations

About alternate rich client configurations

Depending on your needs, you may find it useful to install one of the following rich client features:

Teamcenter Rich Client (Lite Edition)
Provides a rich client with limited applications and menu commands.

Rich Client (Shared Disk Deployment)
Installs the rich client in a shared location to be accessed from multiple hosts.

These features are available for two-tier rich client configurations.

Install the rich client lite edition

1. Start TEM from the root directory of the Teamcenter software kit.

2. Create a new **rich client** configuration and proceed to the **Features** panel.

3. Under **Base Install**, select one of the following rich client features:

   - **Teamcenter Rich Client (2-tier and 4-tier)**
   - **Teamcenter Rich Client 2-tier**
   - **Teamcenter Rich Client 4-tier**

4. Under **Extensions→ Teamcenter Integration for NX**, select **NX Rich Client Integration**.

5. Under **Base Install**, select **Teamcenter Rich Client (Lite Edition)**.

6. Enter an installation directory in the **Installation Directory** box.

7. Proceed through the remaining panels in TEM to complete the installation.

Install the rich client for shared disk deployment

1. Create a share (for example, **RC_Shared**) on the machine that will host the shared rich client. Grant read access to all users who will use the shared rich client.

2. Install a Teamcenter corporate server in the shared location.

3. Map a drive to the shared location, for example, **E:**.

   > Note:
   >
   > All hosts must use the same drive letter and path to access the shared rich client.

4. Start TEM (**tem.bat**) from the root directory of the Teamcenter software kit. Right-click the **tem.bat** program icon and choose **Run as administrator**.

5. Proceed to the **Features** panel and enter the following information:

   a. Select the **Rich Client (Shared Disk Deployment)** feature.

   b. In the **Installation Directory** box, enter a new directory on the mapped drive, for example, **E:\TcClient**.

6. Proceed to the **2-tier server settings** panel. In the **2-tier servers** list, add the location of the **TC_DATA** directory on the corporate server you installed in step 2, for example, **E:\data\tcdata**. For additional advanced options, click **Advanced**.

7. Proceed to the **Rich Client Runtime Home** panel. Enter the local path in which you want to place rich client files during runtime.

8. Proceed through the remaining panels to complete the rich client installation, and then exit TEM.

9. To verify the shared installation, launch the rich client from the **Teamcenter 13** shortcut on the Windows desktop. After the client starts, verify you can create or edit an item in Teamcenter.

10. Enable access to the shared rich client from other hosts:

    a. On each host, map a drive to the shared location. Use the same drive letter you used when you installed the client in step 3.

    b. Copy the **Teamcenter 13** shortcut from the Windows desktop on the shared rich client host to each host.

To launch the shared rich client from other hosts, double-click the **Teamcenter 13** shortcut.

Configure rich client features

Configuring client display language

Choose a display language

The default language displayed is the one specified by your operating system locale settings. You can choose to override the default display language if required.

At each logon, you can choose between multiple languages, depending on your company's policy and installation. There are two ways you can specify the language:

- Specify the language in the URL. For example:
  - To specify French, type **http://myhost:7001/tc/webclient?lang=fr** in the URL.
  - To specify Russian, type **http://myhost:7001/tc/webclient?lang=ru** in the URL.

> Note:
> - When specifying a language in the URL, use standard **W3C locale identifiers**.
> - If your network uses IPv6 (128-bit) addresses, use the hostname in URIs and do not use the literal addresses, so the domain name system (DNS) can determine which IP address should be used.

- Specify the language in your browser preferences. For example, in Microsoft Internet Explorer, perform the following steps:

  1. Choose **Tools** → **Internet options...**.
  2. Click **Languages** in the **Internet Options** dialog box.
  3. Click **Add** in the **Language Preference** dialog box.
  4. Click any language in the **Add Language** dialog box.
  5. Click **OK** in the **Add Language** dialog box.
  6. Click the language you want to see in the user interface in the **Language Preference** dialog box.
  7. Click the **Move Up** button.
     The language you move to the top of the list in the **Language Preference** dialog box is the language you see in the user interface.
  8. Click **OK** in the **Language Preference** dialog box.
  9. Click **OK** in the **Internet Options** dialog box.
  10. Log on and view the user interface in the language you chose.

      Note:

      An error message is displayed if the specified language is unavailable.

Your ability to set the language for the client depends on the character set encoding of the Teamcenter server host and also the character set encoding of the Teamcenter database.

Note:

To prevent mixed-language display after you change the client display language, clear your web browser cache. This prevents the interface from displaying in mixed languages.

Choose a display language for the rich client

By default, the rich client is displayed in the language specified by the operating system. If you want to override the default language, you can choose the display language for the rich client.

Note:

- Your ability to set the language for the rich client depends on the character set encoding of the Teamcenter server host and also the character set encoding of the Teamcenter database.
- **Other systems**

  Set your system font to a font that supports Asian multibyte characters. For example, on Windows systems other than Windows 10, the **Arial Unicode MS** font can be set to **Message Box** to correct this problem.

Similarly, if you find that Asian multibyte characters do not display correctly when you start the rich client using the native language (**-nl**) option, restart your system in the appropriate locale and set your system font to a font that supports Asian multibyte characters.

If you want to override the default language to launch the rich client in a desired language, add the **-nl** argument to the rich client launch command:

```
TC_ROOT\portal.bat -nl locale-code
```

Replace *TC_ROOT* with the Teamcenter home directory, and replace *locale-code* with the .

For example, to launch the rich client Italian user interface, enter the following from a command prompt:

```
D:\tc\rac\portal.bat -nl it_IT
```

Alternatively, on Windows systems, you can customize the properties for the Teamcenter rich client desktop shortcut icon  to specify a desired language:

1. On your desktop, right-click the Teamcenter rich client shortcut icon  .

2. Choose **Properties**.
   A properties dialog box is displayed.

3. Click the **Shortcut** tab.

4. In the **Target** box, add an **-nl** argument to specify the desired language.
   The **-nl** argument accepts a single string as value. The string must be one of the supported locale codes.
   For example, to run the rich client Italian user interface:

   ```
   D:\tc\rac\portal.bat
   ```

   becomes:

```
D:\tc\rac\portal.bat –nl it_IT
```

> Note:
>
> To prevent mixed-language display the next time you run the rich client after you change the **-nl** argument value, or after you change your operating system locale, delete the **Teamcenter** directory under your user directory (**C:\Documents and Settings***user-name***Teamcenter**).

> Caution:
>
> If you use the Lifecycle Visualization embedded viewer, do *not* use the **-nl** argument when you launch the rich client.
>
> For the embedded viewer to work properly, the operating system locale and the rich client runtime locale must match. The **-nl** argument overrides the Java locale and can cause incorrect behavior in the embedded viewer.

Choose the default language for the Teamcenter server process

Teamcenter server (TcServer) processes and other Teamcenter processes, and Teamcenter command-line utilities, start in the language specified in the **TC_language_default** environment variable. To make these display in a different preferred locale, set the **TC_language_default** environment variable to a supported locale code.

Teamcenter allows users to select a locale on their client hosts, regardless of the locale used by the Teamcenter server pool manager. Requested locales *must* be installed on the Teamcenter server (which may not be true for customized locales) and the server system be configured to accept the locale encoding.

Add multibyte character support in an English rich client

1. In the rich client **\rac\plugins\configuration_***config-name* directory, create the **customer.properties** file, if it does not already exist.

   > Note:
   >
   > Do not save the **customer.properties** file in Unicode or UTF-8 format. The **customer.properties** file must be in the default format (for example, ANSI) to be read successfully by the rich client.

2. Open the **customer.properties** in a plain text editor.

3. Add the following line to the file to set the **UseDefaultSwingFonts** property.

   ```
   UseDefaultSwingFonts=true
   ```

4. Save the file and exit the text editor.

5. Change to the **rac\registry** directory.

6. Run the **genregxml.bat** utility to register the change.

> Note:
>
> When you run Teamcenter in a multibyte environment, make sure the **TC_XML_ENCODING** environment variable is set to **UTF-8** and the **UGII_UTF8_MODE** environment variable is set to **1**.

Configure online help access

To configure online help after Teamcenter rich client installation, or to change online help access for the rich client, set the **online help URL** in the client configuration:

1. Launch TEM in maintenance mode and proceed to the **Feature Maintenance** panel.

2. Under the appropriate rich client type,[6] select **Modify settings**.

3. In the **Rich Client Settings** panel, select the **Enable Online Help** check box, and then type the appropriate **online help URL** in the **Web server URL** box.

4. Proceed through the remaining panels to complete the configuration update.

After you complete these steps, online help is available from the **Help→Help Library** menu option (or control-F1) in the rich client.

Add, remove, or modify databases

1. Start Teamcenter Environment Manager (TEM). From the **Start** menu, choose **All Programs→Teamcenter 13→Environment Manager**, then right-click and choose **Run as administrator**.
   Alternatively, you can run the **tem.bat** file in the **install** directory in the application root directory for the Teamcenter installation.

   > Note:
   >
   > If you create a desktop shortcut to TEM, make sure the working directory (or **Start in** location) for the shortcut is *TC_ROOT***install**. If the working directory for the shortcut is incorrect, TEM displays errors during installation or updating of a configuration.

2. In the **Maintenance** panel, select **Configuration Manager** and then click **Next**.

6 The rich client type may be **Teamcenter Rich Client 2-tier**, **Teamcenter Rich Client 4-tier**, or **Teamcenter Rich Client (2-tier and 4-tier)**.

3. In the **Configuration Maintenance** panel, select **Perform maintenance on an existing configuration**, then click **Next**.

4. In the **Old Configuration** panel, select the configuration you want to modify, and then click **Next**.

5. In the **Feature Maintenance** panel, select **2-tier server configurations→Modify 2-tier Teamcenter server settings**, and then click **Next**.

6. In the **2-tier Teamcenter server settings** panel, update the two-tier server settings:

   - To add databases, click **Add**, and then enter the database access information as during a **two-tier rich client installation**.
   - To remove databases, select the appropriate row in the **2-tier Servers** table, and then click **Remove**.
   - To edit database settings, select the appropriate row in the **2-tier Servers** table, and then click **Edit**. Enter database access information.

   To set additional advanced options, click **Advanced**.

7. In the **Confirmation** panel, review your selections. If you want to change any settings, click **Back** to return to previous panels. Otherwise, click **Start** to begin updates.
   When updates are complete, exit TEM.

Migrate Teamcenter to a different JRE

The Java Runtime Environment (JRE) used by Teamcenter and Teamcenter Environment Manager (TEM) is set by TEM during Teamcenter installation. If you upgrade or install a new JRE, you must migrate Teamcenter to the new JRE using TEM.

> Caution:
>
> Do not remove your previous JRE until after you complete migrating Teamcenter to the new JRE. If you removed your old JRE before performing this procedure, **problems or error messages may occur**, and TEM fails to start.

To change the JRE used by Teamcenter and TEM, perform the following steps.

1. If you changed the password for the Teamcenter administrative user after you installed the FMS server cache (FSC) service, update the logon credentials for the FSC service to specify the current password.

2. Start Teamcenter Environment Manager (TEM). From the **Start** menu, choose **All Programs→Teamcenter 13→Environment Manager**, then right-click and choose **Run as administrator**.

Alternatively, you can run the **tem.bat** file in the **install** directory in the application root directory for the Teamcenter installation.

3. In the **Maintenance** panel, select **Migrate Teamcenter to another JRE** and then click **Next**.

4. The **Migrate Teamcenter to another JRE** panel lists Teamcenter services that depend on the JRE and must be shut down before the migration can begin.

   After you make sure these services are shut down, select **All features from the above list have been shut down**, and then click **Next**.

5. In the **JRE Location** panel, enter the path to the JRE you want Teamcenter to use.

   > Caution:
   >
   > Make sure you specify a 64-bit JRE.

   > Note:
   >
   > Depending on the features in your configuration, TEM may prompt you for the operating system user password.

6. In the **Confirmation** panel, click **Start** to migrate Teamcenter to the specified JRE.

If you encounter problems migrating Teamcenter to the new JRE, see the available **troubleshooting solutions**.

Configure Teamcenter Automotive Edition–GM Overlay

Set environment variables for GM Overlay

1. Open the startup file (*TC_ROOT***iiopservers\start_***database-name**.bat*).

2. Locate the following line in the file:

   ```
   <call %TC_DATA%\tc_profilevars>
   ```

3. Add the following statements after this line to set GM Overlay environment variables:

Environment variables	Comment
`set UG_VERSION=`*nx-version*	Set only if you use a version of NX earlier than NX 4. Do not set if you use NX 4 or later.

Environment variables	Comment
	Replace *nx-version* with the NX version number, for example, **30**.
`set GMPDL_EXT_DIR=%GMPDL_BASE_DIR%\bin\win`	Specifies the path to the GMPDL **fc_main** and **read_flag** utilities.
`set GMIMAN_FC_ADDL_LIBS=` *pdl-libs-path*	Replace *pdl-libs-path* with the path to PDL **libs**, for example, **%GMPDL_BASE_DIR%\lib\win**.

If you installed additional features for Teamcenter Automotive Edition–GM Overlay, configure these features as necessary.

Configure Design Context for GM Overlay

1. Set the following environment variables in the **%IMAN_SBS%\repository\jobs\start_tc_server.bat** file before starting the server broker service:

Environment variables	Comment
`set QPL_USER=`*qpl-user*	Replace *qpl-user* with the site QPL user name; the default is **qpl**.
`set UGII_QPL=`*qpl-server-host-name*`:`*qpl—server-port*	Replace *qpl-server-host-name* with the name of the QPL server host; the default is **your.qpl.server.com**. Replace *qpl-server-port* with the port number of the QPL server; the default is **14730**.
`set QPL_DB_CONNECT=` `%`*{QPL_USER}*`%:pwd@oracleSID`	Replace *{QPL_USER}*; the default is **%TC_DB_CONNECT%**.
`set TNS_ADMIN=`*tnsadmin.ora-dir*	Replace *tnsadmin.ora-dir* with the path to the directory containing the Oracle **tnsadmin.ora** file; the default is **%TC_DATA%**.

2. Install a central QPL server on **your.qpl.server.com**.
Installing the QPL server is described in the server installation guides for Windows and Linux.

3. Populate QPL builds for **CORP_Vehicle Revisions**.

4. Verify the QPL builds. A fine tuning may be necessary as the spacemap accuracy and range may have an impact on the results of Design Context filters.

Note:

Edit the **start_ugmanager.bat** file in your client directory to set **GMPDM_PORTAL=1**.

Customize port for Teamcenter Integration for NX

If you installed Teamcenter Integration for NX for use with the Teamcenter rich client and want to customize the Teamcenter Integration for NX port number, enter the following line in the **etc\services** file:

```
ugmgr           9998/tcp                        #TC ugmanager port
```

Modifying this file requires administrative privileges.

3. Creating a custom distribution

Overview of custom distributions

Teamcenter supports the following custom distributions to simplify installation of Teamcenter on multiple hosts.

- Silent distribution
  A *silent distribution* is an XML-based configuration file you can use to install Teamcenter *silently* (without user interaction) on another host. Silent installation suppresses most installation prompts and requires minimal user interaction. As an alternative to installing and configuring Teamcenter on individual hosts in your network, silent installation provides an efficient way to deploy Teamcenter on multiple hosts in your network.
  The silent installation configuration file records the selections and values you enter during a Teamcenter installation and enables TEM to perform these steps noninteractively on other hosts. You can modify a silent configuration file to change certain Teamcenter settings before installation.
  Silent distributions are supported for Teamcenter servers, two-tier rich clients, and four-tier rich clients.

- Compact distribution
  A *compact distribution* is an installable package with a selected subset of Teamcenter client features. It is much smaller than a full Teamcenter software kit and is more easily distributed to multiple hosts in an organization.
  A compact distribution is an alternative to installing Teamcenter from a full Teamcenter software kit. A compact deployable package can contain a selected subset of Teamcenter features rather than the entire set of features in the release. This reduces network loads and simplifies large-scale Teamcenter deployments by providing an installation package that is smaller and more easily distributed to an organization. For example, a two-tier rich client installation can be packaged in a deployable media as small as 580 MB, where a full Teamcenter distribution can require up to 5 GB. A four-tier rich client compact distribution can be as small as 283 MB, and a Client for Office compact distribution can be only 93 MB.
  Compact distributions are supported for Teamcenter two-tier and four-tier rich clients.

Create a silent distribution

Create a silent installation configuration file

1. Log on to the Teamcenter corporate server host and browse to the root directory of the Teamcenter software kit.

2. Start Teamcenter Environment Manager (**tem.bat**) from the Teamcenter software kit. Right-click the **tem.bat** program icon and choose **Run as administrator**.

3. In the **Welcome to Teamcenter** panel, select **Teamcenter**.

4. In the **Install/Upgrade Options** panel, select the **Create custom distribution** check box, and then click **Install**.

5. In the **Custom Distribution Options** panel, select **Create silent configuration file**, and then specify the path to the silent installation file, for example, **C:\silent.xml**. The specified path must be to an existing directory and the file name must end in **.xml**.

6. Proceed through the remaining panels to complete the Teamcenter installation.

   Teamcenter Environment Manager creates the silent installation file you specified in step 5. This file records your settings and selections during the installation. You can use this file to silently install Teamcenter on another host with the same settings.

Caution:

If you install a rich client silently using a compact distribution and your silent configuration file requires features not included in the compact distribution, the silent installation fails. To avoid this, make sure your silent configuration requires only features in the **compact distribution**, or install using a full Teamcenter software kit.

Install the rich client silently

Your Teamcenter administrator can create a *silent distribution* of the rich client, which allows you to install the client without user interaction. This provides a means to install the rich client efficiently on multiple hosts in your network.

To launch a **silent installation**, type the following command:

tem.bat -s *file-name*.**xml**

Replace *file-name* with the name of the silent installation configuration file.

After installation is complete, you can view a log of the installation in the **install***xxx*.**log** file under the **install** directory in the Teamcenter application installation directory.

Note:

The rich client can be uninstalled only through the TEM interface. Silent uninstallation is not supported.

Modify the silent installation configuration file

The **silent installation configuration file** is XML-based. After creating the file and establishing the file structure using Teamcenter Environment Manager, you can change the installation by manually modifying the values of the XML elements described in the following table.

Caution:

Siemens Digital Industries Software recommends using an XML editor to ensure well-formed XML code. Do not change the XML structure of the file. If XML file structure is incorrect, or the XML code is not well-formed, installation fails.

Element	Description
features	Lists all the Teamcenter modules and features to be installed. These are selected on the **Features** panel of Teamcenter Environment Manager.
feature	Specifies one feature of a Teamcenter module. The **code** attribute identifies the feature. To define whether Teamcenter Environment Manager installs the feature, set the **selected** attribute to either **true** or **false**.
data	Lists all Teamcenter Environment Manager Java classes and values defining aspects of installation, such as the path to the installation directory for Teamcenter application files. For additional information, see the comments in the configuration file. The comments describe the class and valid values.

Sample silent installation configuration file

```
<?xml version="1.0" encoding="UTF-8"?>
<root>
<tem engine="2008.0.0" />
 <settings>
   <installDir value="C:\\Program Files\\Siemens\\Teamcenter13.0" />
   <sourceDir value="D:\\kits\\tc13.0\\win64" />
   <application value="tceng" />
   <silentMaintenance value="false" />
   <installingUser value="osuser" />
   <installLanguage value="ENGLISH" />
   <aboutFullVersion value="13.0" />
   <version value="12000.1.0.20181207" />
 </settings>
 <sourceLocations>
   <coreLocations>
      <directory value="D:/kits/tc13.0/win64" />
   </coreLocations>
   <browsedLocations />
 </sourceLocations>
 <config name="My Configuration 1" id="config1">
   <mode type="install" clone="false">
    <checkpoints>
      <checkpoint value="featureProperties">
         <point value="vcruntimes:vc2005,latest" />
         <point value="minMSSQL2005Version:10.50" />
         <point value="coreTemplate:foundation_template.xml" />
         <point value="feature_id:datamodel,rtserver" />
         <point value="vcruntimes:latest" />
         <point value="template_file:foundation_template.xml" />
         <point value="minDB2Version:9.7.4" />
         <point value="minOracleVersion:11.2.0.1" />
         <point value="template_name:foundation" />
         <point value="typeAnalysis:true" />
      </checkpoint>
    </checkpoints>
   </mode>
   <comments />
   <data>
    <adminUser guid="2E53CFC3AC75665E50FF0F207D1D013B">
      <password value="holrvg6fpj40nGt7ZlCM2Q" encrypt="true" />
      <user value="infodba" />
    </adminUser>
    <director guid="661AA2A766CA975D998EBE61455F3EA3">
      <saveStateOnFail value="true" />
      <status value="0" />
      <script>
        <temBase />
        <copyFeature name="Microsoft Visual C++ Runtimes"
feature="A0CF69C3A0BC61770EB81BD22667EA52" />
        <copyFeature name="Business Modeler IDE"
feature="A9CECD82127A11DB9804B622A1EF5492" />
        <copyFeature name="VC 2008 Redistributables"
feature="DPBL8RC6MUS0LCPS10NIPGR85RI7HPHQ" />
        <copyFeature name="Teamcenter File Services"
feature="BC76F9D1AB7C93A848D0FE3602F59097" />
        <copyFeature name="Flex License Server"
```

```
feature="D1D683A8B2CE1EB821B97CD2EE5D7627" />
        <copyFeature name="VC 2005 Redistributables"
feature="UDR4NG0DEZ1TN9XHKG7Z8AFDPVVTZXL2" />
        <copyFeature name="VC 2013 Redistributables"
feature="NJCMQH3ZMYTPPPGA8BS4Q1C7OV6IXVXU" />
        <copyFeature name="VC 2010 Redistributables"
feature="R08U30BA5KZYSNDFKMGXKKHWEYOOVD7V" />
        <copyFeature name="VC 2012 Redistributables"
feature="Z9ICW073V9QXU4H5F8BK6CXG6KFYWBQZ" />
        <copyFeature name="Business Modeler Templates"
feature="A909338A1CB411DB8AF6B622A1EF5492" />
        <copyFeature name="Digital Dashboard"
feature="A9CECD82127A11DB9804B622A1EF5599" />
        <copyFeature name="FMS Server Cache"
feature="90C2A1C96F6A61FAB397AF88ABE4AAC1" />
        <copyFeature name="Teamcenter Foundation"
feature="8C061DD51E13E0CB9DC4687B1A3348BE" />
        <copyFeature name="NX Part Family Classification Integration"
feature="B176F6B6E9E91D9804EFB0D2
        010FD613" />
        <copyFeature name="Server Manager" feature="BF0E78AFE4280DCB08594EA2F3671BE8" />
.
.
.
        <unpack name="Microsoft Visual C++ Runtimes"
feature="A0CF69C3A0BC61770EB81BD22667EA52" />
        <unpack name="FMS Server Cache" feature="90C2A1C96F6A61FAB397AF88ABE4AAC1" />
        <unpack name="Teamcenter Foundation"
feature="8C061DD51E13E0CB9DC4687B1A3348BE" />
        <unpack name="NX Part Family Classification Integration"
feature="B176F6B6E9E91D9804EFB0D2010FD
        613" />
        <preInstall name="Microsoft Visual C++ Runtimes"
feature="A0CF69C3A0BC61770EB81BD22667EA52" />
        <preInstall name="FMS Server Cache" feature="90C2A1C96F6A61FAB397AF88ABE4AAC1" />
        <preInstall name="Teamcenter Foundation"
feature="8C061DD51E13E0CB9DC4687B1A3348BE" />
        <preInstall name="NX Part Family Classification Integration"
feature="B176F6B6E9E91D9804EFB0D20
        10FD613" />
        <install name="Microsoft Visual C++ Runtimes"
feature="A0CF69C3A0BC61770EB81BD22667EA52" />
        <install name="FMS Server Cache" feature="90C2A1C96F6A61FAB397AF88ABE4AAC1" />
        <install name="Teamcenter Foundation"
feature="8C061DD51E13E0CB9DC4687B1A3348BE" />



        <install name="NX Part Family Classification Integration"
feature="B176F6B6E9E91D9804EFB0D2010F
        D613" />
        <postInstall name="Microsoft Visual C++ Runtimes"
feature="A0CF69C3A0BC61770EB81BD22667EA52" />
        <postInstall name="FMS Server Cache"
feature="90C2A1C96F6A61FAB397AF88ABE4AAC1" />
        <postInstall name="Teamcenter Foundation"
feature="8C061DD51E13E0CB9DC4687B1A3348BE" />
        <postInstall name="NX Part Family Classification Integration"
feature="B176F6B6E9E91D9804EFB0D2
        010FD613" />
```

```
        <featureInstalled name="Microsoft Visual C++ Runtimes"
feature="A0CF69C3A0BC61770EB81BD22667EA5
        2" />
        <featureInstalled name="FMS Server Cache"
feature="90C2A1C96F6A61FAB397AF88ABE4AAC1" />
        <featureInstalled name="Teamcenter Foundation"
feature="8C061DD51E13E0CB9DC4687B1A3348BE" />
        <featureInstalled name="NX Part Family Classification Integration"
feature="B176F6B6E9E91D9804E
        FB0D2010FD613" />
      </script>
    </director>
    <FSCService guid="F2FCBCEC03DFF7F9D1E3A11EC9B64BD2">
      <fscReadCacheDir value="$HOME\\FSCCache" />
      <fscWriteCacheDir value="$HOME\\FSCCache" />
      <addToBootstrap value="true" />
      <fscReadCacheSize value="10" />
      <serverID value="FSC_tchost_osuser" />
      <log value="" />
      <fscWriteCacheSize value="10" />
    </FSCService>
    <FSCMasterSettings guid="EBC3422F77C6BF18FE0E3A821EFE1134">
      <masterModel value="Simple Model" />
    </FSCMasterSettings>
    <FscSiteImport guid="630BECF927EC742A748A97486D5868DA">
      <remoteSites value="" />
    </FscSiteImport>
    <tcdata guid="4500621E2BE24BF0DD6ABF31EBA01088">
      <serverHostLocation value="tchost" />
      <path value="C:\\Program Files\\Siemens\\tcdata" />
      <create value="true" />
      <shareName value="" />
      <dsmKeyPath value="" />
    </tcdata>
    <FSCServiceFCCDefaults guid="7311DC5E94724BED0DD7419FCDE055CF">
      <writeCacheSize value="1000" />
      <readCacheSize value="1000" />
      <cacheDirUnix value="/tmp/$USER/FCCCache" />
      <partialReadCacheSize value="3000" />
      <cacheDirWin value="$HOME\\FCCCache" />
    </FSCServiceFCCDefaults>
    <FccSite guid="35EE6A66B85467D5EDE5B3D91871EACE">
      <siteListString value="" />
    </FccSite>
    <FSCServiceConnections guid="E4BDA0B521CB10A49F0CE123C9F326F1">
      <connections value="http,4544,;" />
    </FSCServiceConnections>
    <OSUser guid="CA769D31FD7E122E5E509A0BBBD7E809">
      <password value="+rfq6mTJVSuqaYJixkwntg" encrypt="true" />
      <user value="DOMAIN\\osuser" />
    </OSUser>
    <flexClient guid="7221ECFBC9555CDF997FC3F575022761">
      <nX5String value="28000@flexhost" />
      <port value="27000" />
      <nX4String value="27000@flexhost" />
      <nX5Port value="28000" />
      <host value="flexhost" />
      <nX5Host value="flexhost" />
      <nX5CheckBox value="true" />
      <envServerString value="28000@flexhost" />
```

```
    </flexClient>
    <signatureCertificate guid="RRK3WTCSY4020QSZO90QFJWMISFAC2AX">
      <replaceCerts value="false" />
      <certificates value="" />
    </signatureCertificate>
    <foundationSettings guid="LHBY67ZYMYHSKED26FHDNDHFJTZD84I7">
      <templatesToBeInstalled value="" />
      <genClientCache value="generate all" />
      <genServCache value="" />
      <productionEnvironment value="true" />
      <requestMetaCacheRebuild value="true" />
      <enableGenServCache value="true" />
      <quickClone value="false" />
    </foundationSettings>
    <transientVolume guid="983980098FF188A8C4BF08E8168A32A8">
      <windowsVolume value="C:\\Temp\\transientVolume_tcdbuser" />
      <unixVolume value="/tmp/transientVolume_tcdbuser" />
    </transientVolume>



    <TcOracleSystem guid="1EF0859AC04962CBFA41C4C8C84499A1">
      <password value="WsRDrEfD0/4vnLO0/mj2wA" encrypt="true" />
      <user value="system" />
      <tablespaces
value="tcdbuser_IDATA:90;tcdbuser_ILOG:5;tcdbuser_INDX:5;tcdbuser_TEMP:5;tcdbuser_MM
      V:5" />
      <tablespacePath value="/db/oradata/tc/tcdbuser" />
    </TcOracleSystem>
    <security guid="ZUG63OE2YRNFD1VY13KCEZM52XFJP45D">
      <adminDirectory value="$TC_ROOT\\security" />
    </security>
    <volume guid="1F16971107DE44C0C7827F800EE4AEF8">
      <port value="4544" />
      <fscModel value="Simple Model" />
      <location value="C:\\Program Files\\Siemens\\volume" />
      <name value="volume" />
      <hostName value="tchost" />
      <fscId value="FSC_tchost_osuser" />
    </volume>
    <TcOracleEngine guid="F4F7C0852B27D6E56B8C64BE77FFA14C">
      <port value="1521" />
      <createUser value="true" />
      <host value="dbhost" />
      <flush value="false" />
      <populate value="true" />
      <service value="tc" />
      <uTF8Enabled value="true" />
      <password value="AdxT7Jmz2/WbYF6O/eqX9g" encrypt="true" />
      <user value="tcdbuser" />
      <create value="true" />
    </TcOracleEngine>
   </data>
   <features>
      <add feature="A0CF69C3A0BC61770EB81BD22667EA52" name="Microsoft Visual C++
Runtimes" />
      <add feature="90C2A1C96F6A61FAB397AF88ABE4AAC1" name="FMS Server Cache" />
      <add feature="8C061DD51E13E0CB9DC4687B1A3348BE" name="Teamcenter Foundation" />
      <add feature="B176F6B6E9E91D9804EFB0D2010FD613" name="NX Part Family
Classification Integration"
```

```
        />
      </features>
    </config>
    <updateManager />
  </root>
```

Create a compact distribution

Create a *compact distribution*, a Teamcenter installation package that contains selected features, using Teamcenter Environment Manager (TEM).

1. Log on to the Teamcenter corporate server host and browse to the root directory of the Teamcenter software kit.

2. Start TEM (**tem.bat**) from the Teamcenter software kit. Right-click the **tem.bat** program icon and choose **Run as administrator**.

3. Proceed to the **Install/Upgrade Options** panel, select the **Create custom distribution** check box, and then click **Install**.

4. In the **Custom Distribution Options** panel, select **Create compact deployable media**. Enter the path in which to create the compact distribution and a file name for the package, for example, **C:\tc.zip**.

   The specified path must be to an existing directory and the file name must end in **.zip**.

5. Proceed through the remaining panels to complete the Teamcenter installation.

   TEM creates the compact distribution file you specified in step 4. You can use this file to install Teamcenter clients on other hosts.

Caution:

If you **create a silent installation** using a compact distribution and your silent configuration file requires features not included in the compact distribution, the silent installation fails. To avoid this, make sure your silent configuration requires only features in the compact distribution, or install using a full Teamcenter software kit.

4. Installing Microsoft Office interfaces

Compare Microsoft Office interfaces

Teamcenter provides two interfaces to Microsoft Office. Choose the interface that best suits your use of Teamcenter and Microsoft Office.

- Teamcenter Client for Microsoft Office
  Teamcenter Client for Microsoft Office allows you to manage Teamcenter workspace objects in real time. Client for Office gives you access to Teamcenter objects directly through Microsoft Office Word, Excel, PowerPoint, Project, and Outlook. From Outlook, you can save email content or attachments or both and register them in the Teamcenter database. A custom **Teamcenter** ribbon is added to these Microsoft Office applications.
  Client for Office enables you to import objects from Microsoft Excel into Teamcenter. It also enables you to import and export objects between live Word and Teamcenter applications.
  Client for Office can be installed with the Teamcenter four-tier rich client or separately as an add-in to Microsoft Office. Client for Office is independent of the Teamcenter rich client. You can work in Client for Office while a Teamcenter client is running, or you can work solely through Client for Office without running a Teamcenter client.

- Teamcenter Extensions for Microsoft Office
  Teamcenter Extensions for Microsoft Office provides easy access to Teamcenter through Microsoft Office Live features in Microsoft Word. Extensions for Office allows you to edit properties of workspace objects and apply those changes to the Teamcenter database.
  Extensions for Office is available for the two-tier and four-tier Teamcenter rich client.

Installing Teamcenter Client for Microsoft Office

Before you install Client for Office

Choose an installer

Client for Office can be installed alone or as part of a Teamcenter four-tier rich client configuration. Siemens Digital Industries Software provides the following ways to install Client for Office.

Standalone installation wizard	Installs Client for Office on a single host through a step-by-step interface. This wizard does not install the Teamcenter rich client.
Teamcenter Environment Manager (TEM)	Installs Client for Office alone or as part of a four-tier rich client configuration. TEM does *not* install the Teamcenter plugin for Microsoft Project. If you need the plugin for Microsoft Project, you must use the standalone installation wizard.

In Teamcenter patch releases, patch the **standalone installation wizard** or **TEM**, and then install the patched version of Client for Office.

Install required software

Teamcenter Client for Microsoft Office requires the following software on your client host:

Install Microsoft Office

Install a supported 64-bit edition of Microsoft Office. For certified versions, see the Hardware and Software Certifications knowledge base article on Support Center.
Client for Office installs Teamcenter plugins for Microsoft Word, Excel, PowerPoint, Project, and Outlook. (The plugin for Microsoft Project is installable only through the standalone installation wizard.)

Install Microsoft Libraries

If you install Client for Office using TEM, install the required 64-bit Microsoft libraries *before* you install Client for Office. The stand-alone Client for Office installation wizard installs these libraries if they are not present, but may interrupt the installation for system restarts. Installing these libraries requires administrative privileges.
Uninstall any 32-bit versions of these libraries before installing the 64-bit versions. Download these libraries from **Microsoft Corporation** and then install:

- Microsoft .NET Framework.
- Microsoft Visual Studio Tools for Office (VSTO) for 64-bit Windows.

- Microsoft Office Primary Interop Assemblies (PIAs) for Office.
- Visual JSharp .NET Redistributable Second Edition (SE x64) for 64-bit Windows.
- Microsoft Office Language Pack for English for 64-bit Windows. This is required if you use a non-English version of Windows because .NET add-ins require English support.

For certified versions of these libraries, see the Hardware and Software Certifications knowledge base article on Support Center.

Gather required information

You may need to provide the following information during installation of Client for Office. Obtain these values from your Teamcenter administrator if you do not have them:

Teamcenter server information	• Host name • Port • Teamcenter application name
FMS server cache (FSC) information	• Host name • Port • Protocol
Security Services information (Required only if you use Security Services with Client for Office.)	• Application ID • Application name • Server host name • Server port

Enable .NET framework programmability support for Microsoft Office applications

1. In the Windows Control Panel, open the **Add or Remove Programs** dialog box.
2. In the list of installed programs, locate the Microsoft Office application. Select the program name in the list, and then click **Change**.
3. In the maintenance mode options dialog box, select **Add or Remove Features**, and then click **Continue** to display the installation options.
4. In the **Installation Options** tab, expand the options for the Microsoft Office application.
5. To the left of **.NET Programmability Support**, click the down arrow, and then choose **Run from my computer**.

> Note:
>
> The **.NET Programmability Support** option is available if you have installed Microsoft .NET Framework.

6. Click **Continue** to apply the changes.

   The Microsoft Office installer may prompt you to insert the Microsoft Office CD-ROM to apply the changes.

Install Client for Office using the stand-alone installation wizard

1. Download or locate the Teamcenter major release software kit:

   Tc13.0_win64_1_of_2.zip
   Tc13.0_win64_2_of_2.zip

2. In the Teamcenter 13 software location, double-click the **additional_applications\OfficeClient \setup.exe** program icon to launch the installation wizard.

   The Client for Office installation wizard installs required Microsoft libraries if they are not present and may require a system restart before continuing. The wizard resumes after restart.

3. Proceed to the **Setup Type** dialog box. Specify whether to install Client for Office for one user or all users on the client host.

   The option to install for all users is available only to administrative users.

4. In the **Choose Destination Location** dialog box, enter the location in which to install Client for Office.

   > Note:
   >
   > If you are prompted for a JRE path, enter the path to the required Java Runtime Environment (JRE) on your system.

5. In the **Select Features** dialog box, select the features you want to include in your installation.

   The list of available plugins depends on the Microsoft Office applications installed on your host (Word, Excel, PowerPoint, Project, and Outlook).

   If you use Requirements Manager and want to manage requirements in Microsoft Office, select the **Word Applications→Requirements Management Integration** feature.

Client for Office requires Teamcenter client communication system (TCCS). If the rich client or TCCS are not already present on your system, the **Teamcenter client communication system (TCCS)** feature is selected by default.

6. In the **Teamcenter FCC Parent settings** dialog box, specify the FMS server caches (FSCs) used by the FMS client cache (FCC). Click **Add** to add an FSC.

7. In the **Advanced Configuration** dialog box, select the **Advanced Configuration** check box if you want to specify settings for forward proxy, reverse proxy, Kerberos authentication, or other TCCS settings.

   If you do not select **Advanced Configuration**, skip to step 11.

   If you select **Advanced Configuration**, perform the following steps.

   a. In the **Forward Proxy Settings** dialog box, enter information about the TCCS forward proxy.

Value	Description
No proxy	Specifies that you do not want to use a forward proxy.
Use web browser settings	Specifies that you want to use proxy settings from your web browser.
Detect settings from network	Specifies that you want to use proxy settings from your local network.
Use a proxy auto-configuration file	Specifies that you want to obtain settings from a proxy autoconfiguration (PAC) file.
Proxy URL	Specifies the URL to the PAC file from which you want to obtain proxy settings. Note: If your network uses IPv6 (128-bit) addresses, use the hostname in URIs and do not use the literal addresses, so the domain name system (DNS) can determine which IP address should be used. You can configure TCCS environments further after installation.
Manually configure proxy settings	Specifies that you want to enter proxy settings manually.

Value	Description
All Protocols Proxy Host	Specifies a name of a valid proxy to use for all protocols. In the accompanying **Port** box, type the port used by the proxy host.
HTTP Proxy Host	Specifies the host of a forward proxy server for the HTTP protocol. In the accompanying **Port** box, type the port used by the proxy host.
HTTPS Proxy Host	Specifies the host of a forward proxy server for the HTTPS protocol. In the accompanying **Port** box, type the port used by the proxy host.
Exception List	Specifies a semicolon-delimited list of host names and IP addresses to exempt. This box is optional. This list can be used to send requests for local endpoints directly to the destination server without going through a forward proxy that is used for endpoints outside the company intranet. For example, this could allow direct access to a Teamcenter web tier hosted within the company while going through a forward proxy to access a Teamcenter web tier hosted by a business partner.

b. In the **TCCS Environments Information** dialog box, type information about defined TCCS environments. Click **Add** to add a row to the table, and then type the required values.

Value	Description
Name	Specifies the name of the TCCS environment.
URL	Specifies the URL to the TCCS environment.
Filter Text	Specifies a string identifier for the TCCS environment. When installing a rich client, you can optionally provide a **Client Tag Filter** value to filter the list of environments displayed in the rich client to those environments that match the filter value.
SSO URL	Specifies the URL to the Security Services application you use with TCCS.
SSO App ID	Specifies the ID of the Security Services application you use with TCCS.

> Note:
>
> If your network uses IPv6 (128-bit) addresses, use the hostname in URIs and do not use the literal addresses, so the domain name system (DNS) can determine which IP address should be used.
>
> You can configure TCCS environments further after installation.

c. In the **Reverse Proxy** dialog box, specify whether to enable TCCS reverse proxy support. Select the **Enable Reverse Proxy** check box if any URL accessed by TCCS is a reverse proxy server that requires a logon.

   If you select **No**, skip to step **e**.

d. Proceed to the **TCCS Reverse Proxy Settings** dialog box.

   Teamcenter uses reverse proxy settings to detect a logon web page from a reverse proxy server through which Teamcenter services are accessed.

   The criteria table lists the reverse proxy criteria currently defined. Each row of the table is a criteria XML element defined in the specified format. By default, the table is blank and no criteria are defined. A criterion string is of the following form:

   Header_Name1, *Header_Value1*, *Header_Name2*, *Header_Value2*,...:*Form_Action*

   Each criterion must contain at least one header name/header value pair or at least a single form action.

   To add a criterion to the table, perform the following steps:

   A. Click **Add**.

   > Note:
   >
   > You can also click **Remove** to remove an existing criterion from the table or **Edit** to edit an existing criterion.

   B. Type the header names and values for criterion you want to add. In the **Form Action** box, specify a form action.

   C. Click **OK** to add the criterion or **Cancel** to abandon your changes.

Note:

- If you must connect to a Teamcenter environment through a reverse proxy server (such as WebSEAL or SiteMinder), you may need to configure reverse proxy settings for TCCS.

  - If you use SiteMinder, you must configure TCCS to detect form-based challenges originating from the reverse proxy by selecting the **Check Headers** check box.

    This setting also applies to other reverse proxy servers that do not send specific header information in the 200 form-based challenge.

- Criteria definitions are written to the **reverseproxy_cfg.xml** file.

e. Proceed to the **Kerberos authentication support** dialog box.

If you use Kerberos, enter Kerberos authentication settings.

Value	Description
Support Kerberos authentication	Specifies you want to use Kerberos authentication for Teamcenter logon.
Use this Krb5 file	Specifies you want to use a custom Kerberos configuration file. If you select this option, enter the path to the custom Kerberos configuration file.
Use Krb5 file from default location	Specifies you want to use the default Kerberos configuration file on the host. On Windows hosts, the default location is **C:\Windows**.
Always prompt for user ID	Specifies you want to always prompt for a Kerberos user name. If you want to enable zero sign-on functionality on Windows hosts, clear this check box. *Zero sign-on* allows Windows users to launch a Teamcenter client without being prompted to log on to Teamcenter. Note: Zero sign-on functionality requires you configure Security Services in applet-free mode in the **Security Services** panel.

Value	Description
	For more information about Security Services installation, see *Security Services Installation/ Customization*.

Note:

Kerberos is a network authentication protocol that uses a system of *tickets* to allow nodes communicating over nonsecure networks to securely verify identities of each side. Using a client-server model, it provides mutual authentication: the user and the server verify each other's identities.

When configuring TCCS to use Kerberos authentication, a **krb5.ini** file should not be specified in the TCCS configuration. Even if specified, the file is not used for Kerberos configuration.

f. Proceed to the **Secure Socket Layer (SSL) Settings** dialog box. Enter smart card authentication settings.

Value	Description
Use Internet Explorer Certificate Store (Recommended)	Specifies you want to use certificates stored in Microsoft Internet Explorer. This option is available only on Windows hosts.
Disable SSL	Specifies you want to disable SSL authentication.
Configure Certificate Store Manually	Specifies you want to manually configure the certificate store for Teamcenter.
Use trust store	Specifies you want to use a truststore. If you select this option, enter the path to the **File** that contains the truststore you want to use.
Accept untrusted certificates	Specifies you want to accept untrusted certificates.
Configure key store	If you want to configure a keystore, select this check box. If you choose this option, enter the path to the keystore. Also, specify the file type. The default file type is **JKS**.

g. Skip to step 13 to continue installation.

8. In the **Teamcenter Server Information** dialog box, click **Add**, and then enter the following values for the Teamcenter server:

- **Connection Name**
- **Protocol** (**HTTP** or **HTTPS**)
- **Teamcenter Host**
- **Port Number**
- **Application Name**

If you want to add additional servers, click **Add**. To remove a server from the list, select the server in the list and click **Remove**. To edit settings for a server, select the server and click **Edit**.

Click **Up** or **Down** to assign server priority.

9. In the **Setup Type** dialog box, select whether to enable Security Services with Client for Office.

   If you select **Yes**, enter server settings for Security Services.

Value	Description
Application ID	Specifies the application ID of your Teamcenter installation as configured in the Security Services installation.
Protocol	Specifies the protocol used to access the Security Services application (**HTTP** or **HTTPS**).
SSO Server Host	Specifies the server host for the Security Services application.
Port Number	Specifies the port used by the Security Services application.
Application Name	Specifies the application name of the Security Services application.

10. In the **Start Copying Files** dialog box, review your selections. Click **Back** to change your selections or click **Next** to install Client for Office.

11. When installation is complete, close the installation wizard.

12. If your host is running Windows 10, restart the system to enable the **FMS_HOME** environment variable required by Teamcenter client communication system (TCCS).

    You can perform advanced TCCS configuration after installation is complete.

Install Client for Office using TEM

1. **Install the prerequisite software** on the client host. Teamcenter Environment Manager (TEM) does not install the prerequisite software.

2. Locate the Teamcenter 13.0 software kit.

   Alternatively, you can install Client for Office from a compact distribution.[1]

   Creating a compact distribution is supported only in Teamcenter major releases. It is not supported in minor releases, so the **Create compact deployable media** check box is disabled in Teamcenter Environment Manager (TEM).

3. Start TEM:

   a. Browse to the root directory of the Teamcenter software kit.

   b. Double-click the **tem.bat** program icon.

4. In the **Welcome to Teamcenter** panel, select **Teamcenter**.

   For information about any panel in TEM, click the help button  .

5. In the **Install/Upgrade Options** panel, click **Install**.

6. In the **Media Locations** panel, you can optionally add paths to any Teamcenter patches you want to apply during installation.

7. In the **Configuration** panel, enter an ID and a description for the new Teamcenter configuration.

   Proceed to the **Features** panel.

8. In the **Features** panel, select the **Teamcenter Client for Microsoft Office** feature (under **Extensions→Enterprise Knowledge Foundation**).

   You may optionally include additional features in your Teamcenter configuration. If you select additional features, TEM displays panels during installation that are not described in this procedure.

   > Note:
   >
   > TEM does *not* install the Teamcenter plugin for Microsoft Project. If you need the plugin for Microsoft Project, you must use the **standalone installation wizard**. TEM installs Teamcenter plugins for Microsoft Word, Excel, PowerPoint, and Outlook.

9. In the **File Client Cache (FCC)** panel, choose whether to use a new or existing FMS client cache (FCC).

1 A *compact distribution* is a Teamcenter software installation package created by your Teamcenter administrator that contains a selected subset of Teamcenter features. This package is smaller than a full Teamcenter software kit and is more easily distributed. However, if you attempt to install a feature not included in the compact distribution, TEM prompts for the location of a full Teamcenter software kit.

If you want to create a new FCC using the same settings as an existing FCC on your host, select the **Merge values from an existing FMS_HOME** check box.

If you want to specify settings for forward proxy, reverse proxy, Kerberos authentication, or other TCCS settings, click **Advanced**.

10. In the **FCC Parents** panel, enter information about the FMS server cache (FSC).

11. Proceed to the **4-tier server configurations** panel. In the **URI** column, enter the URI for the Teamcenter web tier server. In the **Connection Name** column, enter a name for the rich client connection.

    Note:

    If your network uses IPv6 (128-bit) addresses, use the hostname in URIs and do not use the literal addresses, so the domain name system (DNS) can determine which IP address should be used.

12. In the **Office Client Requirement** panel, TEM reports whether the **required software** is detected on your system. If not, the installation cannot continue.

    If you are logged on as an administrative user on the client host, you can also choose whether to install Client for Office for the current user or for all users on the client host. This option is under **Administrator Option**.

13. In the **Office Client Configuration** panel, if you use Security Services with Client for Office, select the **Install Teamcenter Single Sign-on support for Office Client** check box, and then enter connection information for the Security Services application.

14. Proceed to the **Confirmation** panel and review your selections. Click **Start** to install Client for Office, or click **Back** to change your selections.

Requiring add-ins to be signed by a trusted publisher

Microsoft Office provides a setting that enables you to make it compulsory that all add-ins be signed by a trusted publisher. By default, the publisher of an add-in does not have to be on the Trusted Publishers list for an add-in to run. From the Microsoft Office application's Trust Center, a user can enable the **Require that application add-ins are signed by a trusted publisher** setting. When this setting is enabled, add-ins that are signed by a publisher that is on the Trusted Publishers list run as expected. Add-ins that are signed, but not on the Trusted Publishers list are disabled.

Designate a Publisher as a Trusted Publisher

To designate a publisher as a trusted publisher, add the publisher's certificate to the **Trusted Publishers** list. In this context, the publisher's certificate is the digital certificate that Siemens Digital Industries

Software used to digitally sign its add-ins. Obtain a copy of the public key certificate from Siemens, and import it into the **Trusted Publishers** list.

Process of opening a Microsoft Office dataset from Teamcenter

When you open a Microsoft Office dataset from the Teamcenter rich client, the Teamcenter Application Launcher passes certain information to Client for Office. This information preserves the Teamcenter context of the dataset.

In the process of opening the dataset:

1. The Application Launcher sends an Office Application Integration (**.oai**) file to the Microsoft Office application for the dataset's file type.

2. The Office application starts, and the Client for Office add-in is loaded.

   Warning:

   By default, Microsoft Office allows add-ins to run without notification and does not check for digital signatures. You can change this behavior by choosing higher security settings in the Office Trust Center. Client for Office supports all add-in security settings.

   Higher security settings (for example, **Require Application Add-ins to be signed by Trusted Publisher**) can add a significant amount of time in starting the application and loading the add-in. This process can take 30 seconds or longer, depending on your settings.

3. The add-in parses the **.oai** file to obtain the Teamcenter context information about the dataset.

4. The **.oai** file closes, and the dataset is downloaded from Teamcenter and opens in the Office application.
   Normally, the **.oai** file appears only briefly before the dataset opens. Under slower network conditions, however, the **.oai** file may remain open longer.

   Caution:

   If the **.oai** file remains open for more than 10 seconds, an installation or configuration issue may be indicated.

   If you have questions about this issue, consult your Teamcenter administrator.

Uninstall Microsoft Office interfaces

Choose the appropriate uninstallation method

Uninstall Teamcenter Microsoft Office interfaces using the method that reflects how you installed the interfaces.

Method	Description
Windows Control Panel	If you installed Microsoft Office interfaces using stand-alone installation wizards, uninstall them using the **Add or Remove Programs** dialog box in the Windows Control Panel.
Teamcenter Environment Manager (TEM)	If you installed Microsoft Office interfaces using TEM, uninstall them using TEM.

Uninstall Microsoft Office interfaces using Windows Control Panel

1. Open the **Add or Remove Programs** dialog box in the Windows Control Panel.

2. Select the programs you want to remove and click **Change/Remove**:

   Teamcenter Client for Office
   Teamcenter Applications for Microsoft Office[2]

Uninstall Microsoft Office interfaces using TEM

1. Log on to the operating system with the Teamcenter user account you created for installing and maintaining the Teamcenter installation.

2. Start Teamcenter Environment Manager (TEM):

   Start→Programs→Teamcenter 13→Environment Manager

3. In the **Maintenance** panel, select **Configuration Manager**.

4. If you installed Microsoft Office interfaces as part of a Teamcenter rich client configuration, you can remove the Teamcenter configuration or just remove Microsoft Office interfaces from the rich client configuration.

   - To remove the Teamcenter configuration, perform the following steps:

     a. In the **Configuration Maintenance** panel, select **Remove configuration (uninstall)**, and then click **Next**.

     b. In the **Old Configuration** panel, select the configuration you want to remove, and then click **Next**.

     c. In the **Uninstall** panel, select **Yes** to confirm that you want to uninstall the configuration. Click **Next**.

2 Selecting this item uninstalls Teamcenter Extensions for Microsoft Office and Teamcenter Plugin for Microsoft Project.

d. In the **Uninstall Teamcenter** panel, select the **Advanced Uninstall Options** check box if you want to view additional uninstall options. Otherwise, click **Next**.

e. In the **Confirmation** panel, click **Start** to begin the uninstallation.

- To remove Microsoft Office interfaces from the configuration, perform the following steps:

a. In the **Configuration Maintenance** panel, select **Perform maintenance on an existing configuration**, then click **Next**.

b. In the **Old Configuration** panel, select the configuration you want to modify.

c. In the **Feature Maintenance** panel, choose **Add/Remove Features**.

d. In the **Features** panel, clear the check boxes for the Microsoft Office interface features you want to remove:

Extensions→Enterprise Knowledge Foundation→Teamcenter Client for Microsoft Office

Extensions→Systems Engineering and Requirements Management→Teamcenter Extensions for Microsoft Office

e. Proceed through the remaining panels in TEM, entering required information as needed.

f. In the **Confirmation** panel, click **Start** to begin uninstalling features.

Patching Client for Office

Patch Client for Office using the stand-alone installation wizard

Patching Client for Office requires uninstalling the client and reinstalling it using a patched installation program.

1. **Uninstall the existing Client for Office software** from your system.

2. Download or locate the following software kits:

- Teamcenter patch kit:

Tc*product-level*_**patch**_*number*_**wntx64.zip**

- Corresponding Teamcenter release software kit:

Tc*product-level*_**win64_1_of_2.zip**
Tc*product-level*_**win64_2_of_2.zip**

For example:

Tc13.0.0_patch_1_wntx64.zip
Tc13.0.0_win64_1_of_2.zip
Tc13.0.0_win64_2_of_2.zip

3. Expand the Teamcenter release software kit and the patch kit to separate locations to which you have write permission.

4. Copy the contents of the **additional_applications\OfficeClient** directory in the patch location to the same directory in the release software location, overwriting the existing files in the release software location.

   This updates the Teamcenter release software with the Client for Office installation files from the patch kit.

5. Launch the patched Client for Office stand-alone installation wizard (**setup.exe**) from the release software location.

   Do *not* run the installation wizard from the patch kit location.

Perform the remaining steps as for **an installation from a release software kit**.

Patch Client for Office using TEM

Patching Client for Office requires uninstalling the client and reinstalling it using the updated version of Teamcenter Environment Manager (TEM).

1. Download or locate the following software kits:

   - Teamcenter patch kit:

     Tc13.0.0_patch_*number*_wntx64.zip

   - Teamcenter Environment Manager (TEM) patch kit:

     Tc13.0.0_patch_*number*_install.zip

2. Update Teamcenter Environment Manager (TEM):

   a. Copy the TEM patch kit ZIP file to the *TC_ROOT***install** directory on your Teamcenter client host.

   b. Open a command prompt and change to the *TC_ROOT***install** directory.

   c. Expand the TEM patch kit ZIP file, overwriting existing files:

```
unzip –o Tc13.0.0_patch_number_install.zip
```

> Note:
>
> If errors occur while expanding the file, do one of the following tasks:
>
> - Add the path to your *TC_ROOT***install****install** directory to your **PATH** environment variable and enter the **unzip** command again.
> - Enter the **unzip** command with the full path to your *TC_ROOT***install** directory, for example:
>
>   *TC_ROOT*`\install\install\unzip –o Tc13.0.0_patch_`*number*`_install.zip`

3. Launch TEM in maintenance mode and remove the **Teamcenter Client for Microsoft Office** feature from the configuration.

4. Launch TEM in maintenance mode again and add the **Teamcenter Client for Microsoft Office** feature to the configuration.

Perform the remaining steps as for **an installation from a release software kit**.

Installing Teamcenter Extensions for Microsoft Office

Before you install Extensions for Office

Choose an installer

Extensions for Office can be installed alone or as part of a Teamcenter rich client configuration (two-tier or four-tier). Siemens Digital Industries Software provides the following ways to install Extensions for Office.

Stand-alone installation wizard	Installs Extensions for Office on a single host through a step-by-step interface. This wizard does not install the Teamcenter rich client.
Teamcenter Environment Manager (TEM)	Installs Extensions for Office alone or as part of a two- or four-tier rich client configuration.

In Teamcenter patch releases, patch the **standalone installation wizard** or **TEM** and then install the patched version of Extensions for Office.

Note:

- You must have administrative privileges to install Extensions for Office, but you do not need any special permissions to use the Extensions for Office after installation.
- Extensions for Office does not include the Teamcenter plugin for Microsoft Project. The plugin for Microsoft Project is available in **Teamcenter Client for Microsoft Office**.

Install required software

Teamcenter Extensions for Microsoft Office requires the following software on your client host:

Install Microsoft Office Word

Install Microsoft Office Excel (Professional, Professional Plus, or Enterprise edition), 64-bit version. For certified versions, see the Hardware and Software Certifications knowledge base article on Support Center.

Install Microsoft Libraries

If you install Extensions for Office using TEM, install the required 64-bit Microsoft libraries *before* you install Extensions for Office. The stand-alone Extensions for Office installation wizard installs these libraries if they are not present, but may interrupt the installation for system restarts. Installing these libraries requires administrative privileges.
Uninstall any 32-bit versions of these libraries before installing the 64-bit versions. Download these libraries from **Microsoft Corporation** and then install:

- Microsoft .NET Framework.
- Microsoft Office Primary Interop Assemblies (PIAs) for Office.
- Microsoft Office Language Pack for English for 64-bit Windows. (Required if you use a non-English version of Windows because .NET add-ins require English support.)

For certified versions of these libraries, see the Hardware and Software Certifications knowledge base article on Support Center.

Enable .NET framework programmability support for Microsoft Office applications

1. In the Windows Control Panel, open the **Add or Remove Programs** dialog box.
2. In the list of installed programs, locate the Microsoft Office application. Select the program name in the list, and then click **Change**.
3. In the maintenance mode options dialog box, select **Add or Remove Features**, and then click **Continue** to display the installation options.
4. In the **Installation Options** dialog box, expand the features tree under **Microsoft Excel**.
5. To the left of **.NET Programmability Support**, click the down arrow, and then choose **Run from my computer**.

   > Note:
   >
   > The **.NET Programmability Support** option is available if you have installed Microsoft .NET Framework.

6. Click **Continue** to apply the changes.

   The Microsoft Office installer may prompt you to insert the Microsoft Office CD-ROM to apply the changes.

Install Extensions for Office using the stand-alone installation wizard

1. Download or locate the Teamcenter major release software kit:

   Tc13.0_win64_1_of_2.zip
   Tc13.0_win64_2_of_2.zip

2. In the Teamcenter 13 software location, double-click the **additional_applications\tc_ext4mso\tc_ext4mso.exe** program icon to launch the installation wizard.

The Teamcenter 13 Extensions for Office installation wizard installs required Microsoft libraries if they are not present and may require a system restart before continuing. The wizard resumes after restart.

3. Proceed to the **Select Features** dialog box. Select the **Teamcenter Extensions for Microsoft Office** feature.

4. Proceed through the remaining dialog boxes in the wizard to complete installation.

Some additional configuration in Microsoft Office is required to enable Teamcenter Extensions for Microsoft Office.

Install Extensions for Office using TEM

1. **Install the prerequisite software** on the client host. Teamcenter Environment Manager (TEM) does not install the prerequisite software.

2. Locate the Teamcenter 13.0 software kit.

   Alternatively, you can install Extensions for Office from a **compact distribution**.[3]

3. Start TEM:

   a. Browse to the root directory of the Teamcenter software kit.

   b. Double-click the **tem.bat** program icon.

4. In the **Welcome to Teamcenter** panel, select **Teamcenter**.

   For information about any panel in TEM, click the help button  .

5. In the **Install/Upgrade Options** panel, click **Install**.

6. In the **Media Locations** panel, you can optionally add paths to any Teamcenter patches you want to apply during installation.

7. In the **Configuration** panel, enter an ID and a description for the new Teamcenter configuration.

   Proceed to the **Features** panel.

3 A *compact distribution* is a Teamcenter software installation package created by your Teamcenter administrator that contains a selected subset of Teamcenter features. This package is smaller than a full Teamcenter software kit and is more easily distributed. However, if you attempt to install a feature not included in the compact distribution, TEM prompts for the location of a full Teamcenter software kit.

8. In the **Features** panel, select the **Teamcenter Extensions for Microsoft Office** feature (under **Extensions→Systems Engineering and Requirements Management**).

> Note:
>
> You may include additional features in your Teamcenter configuration. If you select additional features, TEM displays additional panels during installation that are not described in this procedure.

9. In the **Teamcenter Extensions for Microsoft Office**, TEM reports whether all the prerequisite libraries and settings are present on your system. Review any instructions in this panel and click **Next** to continue.

10. Proceed to the **Confirmation** panel and review your selections. Click **Start** to install Extensions for Office, or click **Back** to change your selections.

Patching Extensions for Office

Patching Extensions for Office using the stand-alone installation wizard

Patching Extensions for Office requires uninstalling the software and reinstalling it using a patched installation program.

1. Close all rich client instances on the host.

2. Close all Microsoft Excel instances on the host.

3. **Uninstall the existing Extensions for Office software** from your system.

4. Log on as a user with administrative privileges on the Extensions for Office host.

5. Download or locate the following software kits:

   - Teamcenter patch kit:

     Tc*product-level*_patch_*number*_wntx64.zip

   - Corresponding Teamcenter release software kit:

     Tc*product-level*_win64_1_of_2.zip
     Tc*product-level*_win64_2_of_2.zip

   For example:

   Tc13.0.0_patch_1_wntx64.zip
   Tc13.0.0_win64_1_of_2.zip

Tc13.0.0_win64_2_of_2.zip

6. Expand the Teamcenter release software kit and the patch kit to separate locations to which you have write permission.

7. If the patch kit contains an **office_ext.zip** file in its **tc** directory, expand this **office_ext.zip** into the **tc** directory of the Teamcenter release software kit, overwriting existing files if prompted.

   This updates Extensions for Office run-time files.

8. Copy the contents of the **additional_applications\tc_ext4mso** directory in the patch location to the same directory in the release software location, overwriting the existing files in the release software location.

   This updates the Teamcenter release software with the Extensions for Office installation files from the patch kit.

9. Launch the patched Extensions for Office stand-alone installation wizard (**tc_ext4mso.exe**) from the release software location.

   Do *not* run the installation wizard from the patch kit location.

Perform the remaining steps as for **an installation from a release software kit**.

Patching Extensions for Office using TEM

Patching Extensions for Office requires uninstalling the software and reinstalling it using the updated version of Teamcenter Environment Manager (TEM).

1. Download or locate the following software kits:

   - Teamcenter patch kit:

     Tc13.0.0_patch_*number*_**wntx64.zip**

   - Teamcenter Environment Manager (TEM) patch kit:

     Tc13.0.0_patch_*number*_**install.zip**

2. Update Teamcenter Environment Manager (TEM):

   a. Copy the TEM patch kit ZIP file to the *TC_ROOT***install** directory on your Teamcenter client host.

   b. Open a command prompt and change to the *TC_ROOT***install** directory.

c. Expand the TEM patch kit ZIP file, overwriting existing files:

```
unzip –o Tc13.0.0_patch_number_install.zip
```

> Note:
>
> If errors occur while expanding the file, do one of the following tasks:
>
> - Add the path to your *TC_ROOT***install****install** directory to your **PATH** environment variable and enter the **unzip** command again.
> - Enter the **unzip** command with the full path to your *TC_ROOT***install** directory, for example:
>
> ```
> TC_ROOT\install\install\unzip –o
> Tc13.0.0_patch_number_install.zip
> ```

3. Launch TEM in maintenance mode and remove the **Teamcenter Extensions for Microsoft Office** feature from the configuration.

4. Launch TEM in maintenance mode again and add the **Teamcenter Extensions for Microsoft Office** feature to the configuration.

Perform the remaining steps as for **an installation from a release software kit**.

5. Installing TCCS

What is TCCS?

Teamcenter client communication system (TCCS) manages communication and file transfers between Teamcenter clients and servers. TCCS contains the File Management System client cache (FCC), which uploads files from your workstation to a Teamcenter volume and also downloads requested files from the volume to your workstation.

An FCC also supports Lifecycle Visualization file streaming, which downloads portions of JT files over the network as they are needed.

Siemens Digital Industries Software provides three ways to install TCCS.

Stand-alone installation wizard	Provides a step-by-step interface that installs TCCS on a single host. This wizard does not install a Teamcenter client. If you do not use the rich client or Client for Office, and you use NX or Lifecycle Visualization, you can optionally install TCCS on your workstation using the stand-alone installation wizard.
Teamcenter Environment Manager (TEM)	TCCS is installed when you install the rich client, but to use TCCS, you must enable and configure it *during* rich client installation, or *after* **rich client installation**, using TEM in maintenance mode.

You can also configure TCCS and (FMS) further after installation.

> Note:
>
> The FCC requires an FMS server cache (FSC) to which to connect. Your Teamcenter administrator must provide you connection information for the FSC.
>
> Each FCC requires a parent FSC to provide it with FMS configuration information upon startup. In small deployments, the parent file server cache also provides the client cache with access to files.

Preparing to install TCCS

Make sure the minimum required version of Java is installed on your client host. TCCS installation or configuration may fail if the required Java version is not present. For information about minimum required versions of Java, see the Hardware and Software Certifications knowledge base article on Support Center.

To configure TCCS, you must know the host, port, and protocol of the parent FMS server cache (FSC) that your local FCC connects to. Before you install TCCS, obtain these values from your Teamcenter administrator.

In addition, if you use a forward or reverse proxy with TCCS, or if you want to specify connection information for TCCS environments you want to connect to, you also must obtain these values from your Teamcenter administrator:

- TCCS environment
  Obtain the names and URLs of the TCCS environments your client host connects to. If you use Security Services with TCCS, obtain the ID and URL of the Security Services application also.

  > Note:
  >
  > If your network uses IPv6 (128-bit) addresses, use the hostname in URIs and do not use the literal addresses, so the domain name system (DNS) can determine which IP address should be used.

- Forward proxy information
  If you use a forward proxy, obtain connection information for the forward proxy.

- Reverse proxy information
  If you use a reverse proxy such as WebSEAL or SiteMinder, obtain connection information for the reverse proxy.

Enable TCCS using TEM

1. **Install a rich client**.

2. Launch Teamcenter Environment Manager (TEM) in maintenance mode. In the Windows start menu, choose **Programs→Teamcenter 13**, and then right-click **Environment Manager** and choose **Run as administrator**.

   > Note:
   >
   > You can also run the **tem.bat** file in the **install** directory in the application root directory for the Teamcenter installation. Right-click the **tem.bat** program icon and choose **Run as administrator**.

3. In the **Maintenance** panel, choose **Configuration Manager**.

   For more information about any panel in TEM, click the help button  .

4. In the **Configuration Maintenance** panel, select **Perform maintenance on an existing configuration**.

5. In the **Old Configuration** panel, select the configuration you want to modify.

6. In the **Feature Maintenance** panel, under **Client Communication System**, select **Use Configurations and Environments**.

7. In the **Client Communication System Switch** panel, select the **Use Configurations and Environments** check box.

8. In the **Configuration Selection for Client Communication System** panel, select **Private (non-existing, modifiable)**.

9. In the **Forward Proxy Settings** panel, specify whether to use a forward proxy.

   If you do not use a forward proxy, select **Do not use forward proxy**.

10. In the **Environment Settings for Client Communication System** panel, click **Add**, and then type the required information to create the TCCS environment.

Value	Description
Name	Specifies the name of a the TCCS environment. This name is displayed in the TCCS logon dialog after configuration is complete.
URI	Specifies the URI to the TCCS environment. This is the endpoint URI for the web tier deployment, for example, **http://***host***:***port***/tc**. Note: If your network uses IPv6 (128-bit) addresses, use the hostname in URIs and do not use the literal addresses, so the domain name system (DNS) can determine which IP address should be used.
Tag	Specifies a string identifier for the TCCS environment. When installing a rich client, you can optionally provide a **Client Tag Filter** value to filter the list of environments displayed in the rich client to those environments that match the filter. For example, if the **Client Tag Filter** value is **9***, all TCCS environments with **Tag** values beginning with **9** are available to the client host. Environments with **Tag** values beginning with **10** are not available.
SSO App ID	Specifies the ID of the Security Services application you use with TCCS.
SSO Login URL	Specifies the URL to the Security Services application you use with TCCS. If you use Security Services in applet-free mode, include **/tccs** at the end of the URL, for example: **http://***host***:***port***/***app-name***/tccs**

11. In the **Reverse Proxy Settings** panel, accept the default values.

12. Proceed to the **Kerberos Authentication Settings** panel.

    If you use Kerberos authentication, enter Kerberos authentication settings.

Value	Description
Support Kerberos authentication	Specifies you want to use Kerberos authentication for Teamcenter logon.
Use Krb5 file from default location	Specifies you want to use the default Kerberos configuration file on the host. On Windows hosts, the default location is **C:\Windows**.
Use this Krb5 file	Specifies you want to use a custom Kerberos configuration file. If you select this option, enter the path to the custom Kerberos configuration file.
Always prompt for user ID	Specifies you want to always prompt for a Kerberos user name. If you want to enable zero sign-on functionality on Windows hosts, clear this check box. *Zero sign-on* allows Windows users to launch a Teamcenter client without being prompted to log on to Teamcenter.

Note:

- Zero sign-on functionality requires you configure Security Services in applet-free mode.
- You can configure Kerberos authentication in Teamcenter using Security Services in applet-free mode.
- When configuring TCCS to use Kerberos authentication, a **krb5.ini** file should not be specified in the TCCS configuration. Even if specified, the file is not used for Kerberos configuration.

13. Proceed to the **Secure Socket Later (SSL) Settings** panel.

    If you use SSL, specify SSL settings.

Value	Description
Use Internet Explorer Certificate Store (Recommended)	Specifies you want to use certificates stored in Microsoft Internet Explorer.

Value	Description
	This option is available only on Windows hosts.
Disable SSL	Specifies you want to disable SSL authentication.
Configure Certificate Store Manually	Specifies you want to manually configure the certificate store for Teamcenter.
Configure trust store	Contains options for manually configuring the certificate store for Teamcenter.
Use trust store	Specifies you want to use a trust store. If you select this option, enter the path to file that contains the trust store you want to use.
Accept untrusted certificates	Specifies you want to accept untrusted certificates.
Configure key store	Contains options for configuring the keystore for Teamcenter.
Use key store	Specifies you want to use a keystore. If you select this option, enter the path to the keystore. Also, specify the file type. The default file type is **JKS**.

Additional configuration of SSL for Teamcenter is described in *Security Services Installation/ Customization*.

14. In the **Client Tag Filter** panel, accept the default value or type a different value.

    The **Client Tag Filter** specifies a pattern to apply when filtering TCCS environments. Wildcard characters (*****) are allowed.

    The **Client Tag Filter** pattern is compared to the **Tag** parameters on defined TCCS environments. Environments that do not fit the pattern are not available to the rich client. For example, if the rich client **Client Tag Filter** value is **9.***, all TCCS environments with **Tag** values beginning with **9.** are available to the rich client. Environments with **Tag** values beginning with **10** are not available.

15. In the **Confirmation** panel, review the settings you entered and click **Start** to apply the configuration changes.

Install TCCS

1. Make sure the Microsoft Visual C++ redistributable for Visual Studio is installed on the TCCS host.

   Install the corresponding redistributable to the certified version of Microsoft Visual Studio stated in the Hardware and Software Certifications knowledge base article on Support Center.

2. On the Teamcenter 13.0 software kit, change to the **additional_applications\tccs_install** directory.

3. In the **tccs_install** folder, double-click the **tccsinst.exe** file to launch the TCCS installation program.

4. Proceed to the **License Agreement** dialog box. Read the terms of the license agreement, and then select the option to accept the terms of the agreement.

5. If the installation program cannot locate a supported Java Runtime Environment (JRE) on your host, the program prompts you for the location to a valid JRE.

   For certified versions of the JRE for Teamcenter, see the Hardware and Software Certifications knowledge base article on Support Center.

6. Proceed to the **Choose Install Folder** dialog box. Enter the location in which you want to install TCCS.

7. In the **FCC Settings** dialog box, type information about the FMS server caches (FSCs) your host connects to.

Value	Description
Protocol	Specifies the communication protocol of the parent FSC. The default value is **HTTP**.
Host	Specifies the host name of the parent FSC.
Port	Specifies the number of the port used by the parent FSC.
Path	Specifies the path to the FSC on the parent FSC host.

   The FCC can connect to multiple FSCs. To add an additional FSC, click **Add** and type the values for the FSC. To remove an FSC from the list, select the row in the table and click **Remove**.

   If you use multiple FSCs, specify a connection priority for each in the **Priority** column.

8. Proceed to the **Setup Type** dialog box.

   If you want to specify settings for forward or reverse proxies for the TCCS environment, select the **Advanced Configuration** check box.

9. If you selected the **Advanced Configuration** check box in step 9, enter advanced configuration settings. Otherwise, skip this step and proceed to step 12.

   a. In the **Configuration Selection** dialog box, specify whether to create a shared or private TCCS configuration.

If both the shared and the private TCCS configurations exist, the private configuration takes precedence. If both shared and private TCCS configurations exist, modifying the shared configuration may have no effect on clients because the private configuration takes precedence. Shared configurations may be edited only by administrators.

You can configure TCCS environments further after installation is complete.

b. In the **Forward Proxy Settings** dialog box, enter information about the TCCS forward proxy.

Value	Description
Do not use forward proxy	Specifies that you do not want to use a forward proxy.
Use web browser settings	Specifies that you want to use proxy settings from your web browser.
Detect settings from network	Specifies that you want to use proxy settings from your local network.
Retrieve settings from URL	Specifies that you want to obtain settings from a proxy autoconfiguration (PAC) file.
Proxy URL	Specifies the URL to the PAC file from which you want to obtain proxy settings.
Configure settings manually	Specifies that you want to enter proxy settings manually.
All Protocols Host	Specifies a name of a valid proxy to use for all protocols. In the accompanying **Port** box, type the port used by the proxy host.
HTTP Proxy Host	Specifies the host of a forward proxy server for the HTTP protocol. In the accompanying **Port** box, type the port used by the proxy host.
HTTPS Proxy Host	Specifies the host of a forward proxy server for the HTTPS protocol. In the accompanying **Port** box, type the port used by the proxy host.
Exceptions	Specifies a semicolon-delimited list of host names and IP addresses to exempt. This box is optional. This list can be used to send requests for local endpoints directly to the destination server without going through a forward proxy that is used for endpoints outside the company intranet. For example, this could allow direct access to a Teamcenter web tier hosted within the company

Value	Description
	while going through a forward proxy to access a Teamcenter web tier hosted by a business partner.

> Note:
>
> If your network uses IPv6 (128-bit) addresses, use the hostname in URIs and do not use the literal addresses, so the domain name system (DNS) can determine which IP address should be used.

c. In the **Environment Settings** dialog box, type information about defined TCCS environments. Click **Add** to add a row to the table, and then type the required values.

Value	Description
Name	Specifies the name of a the TCCS environment.
URI	Specifies the URI to the TCCS environment.
Tag	Specifies a pattern to apply when filtering the list of available TCCS environments. When you create TCCS environments, you can use this value to tag a TCCS environment with a string identifier. When installing a rich client, you can optionally provide a **Client Tag Filter** value to filter the list of environments displayed in the rich client to those environments that match the filter. For example, if the client **Client Tag Filter** value is **9***, all TCCS environments with **Tag** values beginning with **9** are available to the client host. Environments with **Tag** values beginning with **10** are not available.
SSO Login URL	Specifies the URL to the Security Services application you use with TCCS.
SSO APP ID	Specifies the ID of the Security Services application you use with TCCS.

> Note:
>
> If your network uses IPv6 (128-bit) addresses, use the hostname in URIs and do not use the literal addresses, so the domain name system (DNS) can determine which IP address should be used.
>
> You can configure TCCS environments further after installation is complete.

d. Proceed to the **Reverse Proxy Settings** dialog box.

Teamcenter uses reverse proxy settings to detect a logon web page from a reverse proxy server through which Teamcenter services are accessed.

The criteria table lists the reverse proxy criteria currently defined. Each row of the table is a criteria XML element defined in the specified format. By default, the table is blank and no criteria are defined. A criterion string is of the following form:

Header_Name1, *Header_Value1*, *Header_Name2*, *Header_Value2*,...:*Form_Action*

Each criterion must contain at least one header name/header value pair or at least a single form action.

To add a criterion to the table, perform the following steps:

A. Click **Add**.

> Note:
>
> You can also click **Remove** to remove an existing criterion from the table or **Edit** to edit an existing criterion.

B. In the **Criteria Details** table, add HTTP header names and values for criterion you want to add.

C. In the **Form Action** box, specify a form action.

D. Click **OK** to add the criterion or **Cancel** to abandon your changes.

Note:

- Criteria definitions are written to the **reverseproxy_cfg.xml** file.
- If you must connect to a Teamcenter environment through a reverse proxy server (such as WebSEAL or SiteMinder), you may need to configure reverse proxy settings for TCCS.
  - If you use SiteMinder, you must configure TCCS to detect form-based challenges originating from the reverse proxy by selecting the **Check Headers** check box.

    This setting also applies to other reverse proxy servers that do not send specific header information in the 200 form-based challenge.
  - If you use WebSEAL and you deploy the TCCS configuration, add the following criterion to the table.

Header name	Header value	Form action
server	**webseal**	**/pkmslogin.form**

This is required because the settings in the deployed **reverseproxy_cfg.xml** override the default WebSEAL configuration.

If you do *not* deploy the TCCS configuration, TCCS uses the default WebSEAL configuration, so this manual configuration is not required.

e. Proceed to the **Kerberos Support** dialog box.

If you use Kerberos, enter Kerberos authentication settings.

Value	Description
Support Kerberos authentication	Specifies you want to use Kerberos authentication for Teamcenter logon.
Use this Krb5 file	Specifies you want to use a custom Kerberos configuration file. If you select this option, enter the path to the custom Kerberos configuration file.
Use default settings	Specifies you want to use the default Kerberos configuration file on the host. On Windows hosts, the default location is **C:\Windows**.

Note:

Kerberos is a network authentication protocol that uses a system of *tickets* to allow nodes communicating over nonsecure networks to securely verify identities of each side. Using a client-server model, it provides mutual authentication: the user and the server verify each other's identities.

When configuring TCCS to use Kerberos authentication, a **krb5.ini** file should not be specified in the TCCS configuration. Even if specified, the file is not used for Kerberos configuration.

10. In the **Secure socket layer (SSL) settings** dialog box, enter SSL settings.

Value	Description
Use Internet Explorer Certificate Store (Recommended)	Specifies you want to use certificates stored in Microsoft Internet Explorer.

Value	Description
	This option is available only on Windows hosts.
Disable SSL	Specifies you want to disable SSL authentication.
Configure Certificate Store Manually	Specifies you want to manually configure the certificate store for Teamcenter.
Configure trust store	Contains options for manually configuring the certificate store for Teamcenter.
Use trust store	Specifies you want to use a trust store. If you select this option, enter the path to file that contains the trust store you want to use.
Accept untrusted certificate	Specifies you want to accept untrusted certificates.
Configure key store	Specifies you want to configure a keystore for Teamcenter. If you select the **Configure key store** check box, enter keystore configuration values. The **File** and **Type** boxes are hidden if **Configure key store** is not selected.
File	Specifies the path to the keystore file.
Type	Specifies the file type. Choose **JKS** or **PLCS12**. The default file type is **JKS**.

Further configuration of SSL for Teamcenter is described in *Security Services Installation/ Customization*.

11. In the **Pre-Installation Summary** dialog box, review your selections. If you want to change any selections, click **Previous**. Otherwise, click **Install** to begin installing TCCS.

12. When installation is complete, click **Done** to close the installation wizard.

13. If you install TCCS on a Windows 10 host, restart the system to enable the **FMS_HOME** environment variable.

A. Troubleshooting

The following table describes solutions to possible problems you may encounter during rich client installation.

Problem	Possible cause	Solution
TEM does not start, reports JRE not found.	JRE path is not set in the system environment.	**Set the JRE_HOME or JRE64_HOME environment variable** to specify the path to the required Java Runtime Environment (JRE).
	JRE path is set incorrectly in the system environment.	Make sure the path specified in the **JRE_HOME or JRE64_HOME environment variable** is correct.
	The specified JRE has been removed from the system.	If you installed a new Java Runtime Environment (JRE) and removed the previous JRE after you installed Teamcenter, TEM cannot find the JRE, even if **JRE_HOME** or **JRE64_HOME** is set correctly. To resolve this problem, perform the following steps. 1. Open the following file in a plain text editor: *TC_ROOT***install\tem_init.bat** 2. Locate the following line in the file: `set TC_JRE_HOME=`*jre_location* 3. Replace *jre_location* with the path to the new JRE. 4. Save and close the file. 5. **Migrate Teamcenter to the new JRE**. To avoid this problem in the future, do not remove your previous JRE until after you complete migrating Teamcenter to the new JRE.
TEM reports the installation path must not contain spaces.	The installation drive specified in the **Installation Directory** does not support short file names (8.3 convention). TEM requires this capability.	Change the **Installation Directory** to a path with no spaces, or to a path on a drive that supports 8.3 file names.

Problem	Possible cause	Solution
		Tip: To determine whether support for the 8.3 file name convention is enabled for a given drive, type the following command in a command prompt: `fsutil 8dot3name query` *drive-letter*
FCC does not start	Incorrect Internet Explorer browser setting	Ensure that installing on demand is enabled: **Tools→Internet Options→Advanced→ Install on Demand** Ensure that scripting of Java applets is enabled: **Tools→Internet Options→Security→ Custom Level→Scripting of Java Applets**
	Incorrect browser setting	Ensure that Enable Java is enabled (checked). Ensure that Enable JavaScript for Navigator is enabled (checked).

	Visual C++ libraries are missing on the client host.	Open a Teamcenter command prompt and enter the following command:
		`fccstat.exe -status`
		If the utility returns the following message:
		`The program can't start because MSVCR120.dll is missing from your computer.`
		`Try reinstalling the program to fix this problem.`
		Install the Microsoft Visual C++ Redistributable for Visual Studio on the client host.

Errors when uploading or downloading files	**FMS_HOME** environment variable does not point to the location of the File	**Uninstall the rich client**, then reinstall the rich client.

Problem	Possible cause	Solution
	Management System (FMS) client executables Incomplete installation of FMS client cache executables	Caution: Always uninstall a rich client using this procedure before installing a new rich client.
	Incompatible configurations of FMS	If two rich clients are installed on the workstation, report the errors to the Teamcenter administrator. When two rich clients are installed on the same workstation, FMS uses the **FMS_HOME** value set during the first installation. The configuration of the file client cache (FCC) to a file server cache (FSC) must support both deployments, especially if the second deployment is to a different database.
Teamcenter displays an error message when you attempt to access Teamcenter online help	Online help is not configured correctly for the rich client.	Configure online help access for the rich client.
Logon to two-tier rich client fails	The port the rich client assigned to the **TcServer** process is already in use by some other process, resulting in an error similar to the following: `Login was unsuccessful: Problems encountered logging into TCServer:TCData Cause: Unable to bind server running on localhost:1572`	Restrict the **TcServer** process to a specified range of ports: 1. Open the *TC_ROOT***iiopservers\start_TcServer1.bat** file. 2. Locate the **TcServer** launch statement, which resembles the following example: `%TC_ROOT%\bin\tcserver.exe -ORBInitRef ImplRepoService=corbaloc:iiop:localhost:1572 /ImplRepoService id=TcServer1 useImR -ORBUseIMR 1 -ORBDottedDecimalAddresses 1` 3. Add the following text to this statement: `-ORBListenEndpoints iiop://localhost:`*intial-port*`/portspan=`*port—range* Replace *initial-port* with the starting port for the search, and *port-range* with the number

Problem	Possible cause	Solution
		of ports to search beyond the initial port. For example, if you want the rich client to search ports 3003 through 3203, add the following text: `-ORBListenEndpoints iop://localhost:3003/portspan=200` 4. Save the changes, and then launch the rich client.
Relogon to a four-tier rich client is slow.	If the Teamcenter enterprise tier runs on a Windows server host with a firewall that silently ignores **TCP SYN** messages to ports that are not open, there can be a significant delay (20-40 seconds) in Teamcenter request processing in certain cases. In particular, a delay is likely if a user logs off and then logs back on within a short time period or if a user's Teamcenter server has timed out and the client reconnects. Trend Micro Personal Firewall and the stealth mode of Windows Firewall are known to exhibit this behavior.	Possible resolutions include disabling the firewall and configuring the firewall not to suppress TCP connection reset (**RST**) packets in response to connection attempts to closed ports. A workaround for the rich client is to turn off SOA shared sessions (set **shareSession=false** in the **site_specific.propertes** file).

B. Enabling multiple client sessions

Overview of multiple client sessions

To run multiple client sessions on a single machine, you must install services that enable launching multiple rich client sessions from your client host.

When you enable multiple client support using IIOP communications (by setting the activation mode to **PER_CLIENT** in TEM), the first rich client session you launch on the system provides the TAO implementation repository (IMR) for all rich client sessions on that system. Terminating the first rich client session (along with its TAO) terminates server connections for all other rich client sessions on that system. Other TAO processes are likely to terminate as well. The first user session to log off can therefore initiate a shutdown of all rich client sessions.

Installing the **TAOImR** and **TAOImRActivator** services enables you to launch and maintain multiple rich client sessions from your client host.

> Note:
>
> **PER_CLIENT** activation mode and IIOP communication mode in the two-tier rich client are deprecated and will be removed in a future version of Teamcenter.

Install support services for multiple client sessions

1. Launch Teamcenter Environment Manager (TEM) and **install the Teamcenter Rich Client 2-tier feature**.

   > Note:
   >
   > If you locate data directories (*TC_DATA*) on your network instead of local drives, use UNC paths instead of mapped drives. Windows services do not run from mapped drives.

2. In the **2-tier server settings** panel, click **Advanced**.

3. In the **General** panel, set **Activation Mode** to **PER_CLIENT**.

   PER_CLIENT mode allows multiple concurrent user sessions of your two-tier rich client, with each rich client session assigned its own **TcServer** process. The default mode, **NORMAL**, does not allow multiple concurrent user sessions, so all client sessions attempt to share a single **TcServer** process, which may not succeed if sessions are launched by different users.

4. After the rich client is installed, browse to the **IIOP_SERVER_CONFIG_FOLDER** directory and run the **install_imrserv.bat** batch program. This installs two TAO processes as Windows Services and starts them. The services are named **TAOImR** and **TAOImRActivator**.

By default, the TAO services are configured for manual startup. To start them automatically, open the **Services** dialog box in the Windows Control Panel and change **Startup Type** for these services to **Automatic**.

> Note:
>
> Installing services requires administrative privileges on the client host.
>
> If **install_imrserv.bat** fails to install the services, run **remove_imrserv.bat** once to make sure unnecessary files are removed before attempting to install the services again.

Uninstall multiple client support services

If you enabled multiple client support using IIOP communications, you can remove support by performing the following steps:

1. Browse to the **IIOP_SERVER_CONFIG_FOLDER** directory.

2. Run the **remove_imrserv.bat** batch program. This program stops and removes the two TAO services.

   You must run **remove_imrserv.bat** *before* you uninstall the rich client because TEM does not remove these services during uninstallation.

> Note:
>
> If you need to change the rich client database configuration using TEM in maintenance mode, first stop the installed TAO services from the **Services** dialog box in the Windows Control Panel. (TEM launches its own TAO processes to complete the configuration.) Otherwise, TEM reports errors.
>
> If the **install_imrserv.bat** and **remove_imrserv.bat** batch files do not exist, use the Windows **sc** command to remove the **TAOImR** and **TAOImRActivator** services. If the services are running, you must also terminate the **ImplRepo_Service** and **ImR_Activator** processes.

C. Uninstalling Teamcenter

Uninstall the rich client using TEM

If you installed the rich client (two-tier or four-tier) using Teamcenter Environment Manager (TEM), uninstall it using TEM.

If you installed the rich client silently, you may only uninstall it through the TEM interface. Silent uninstallation is not supported.

1. Log on to the operating system using the user account under which you installed Teamcenter.

2. Start Teamcenter Environment Manager (TEM):

   Start→Programs→Teamcenter 13→Environment Manager

   You can also run the **tem.bat** file in the **install** directory in the application root directory for the Teamcenter installation.

3. In the **Configuration Maintenance** panel, select **Remove Configuration (uninstall)**, then click **Next**.

4. In the **Old Configuration** panel, select the configuration you want to remove, then click **Next**.

5. In the **Uninstall** panel, select **Yes** to confirm that you want to uninstall the configuration. Click **Next**.

6. In the **Uninstall Teamcenter** panel, select the **Advanced Uninstall Options** check box if you want to view additional uninstall options. Otherwise, click **Next**.

7. In the **Confirmation** panel, click **Start** to begin the uninstallation.

Uninstall Microsoft Office interfaces

Choose the appropriate uninstallation method

Uninstall Teamcenter Microsoft Office interfaces using the method that reflects how you installed the interfaces.

Method	Description
Windows Control Panel	If you installed Microsoft Office interfaces using stand-alone installation wizards, uninstall them using the **Add or Remove Programs** dialog box in the Windows Control Panel.
Teamcenter Environment Manager (TEM)	If you installed Microsoft Office interfaces using TEM, uninstall them using TEM.

Uninstall Microsoft Office interfaces using Windows Control Panel

1. Open the **Add or Remove Programs** dialog box in the Windows Control Panel.
2. Select the programs you want to remove and click **Change/Remove**:

   Teamcenter Client for Office
   Teamcenter Applications for Microsoft Office[1]

Uninstall Microsoft Office interfaces using TEM

1. Log on to the operating system with the Teamcenter user account you created for installing and maintaining the Teamcenter installation.
2. Start Teamcenter Environment Manager (TEM):

   Start→Programs→Teamcenter 13→Environment Manager

3. In the **Maintenance** panel, select **Configuration Manager**.
4. If you installed Microsoft Office interfaces as part of a Teamcenter rich client configuration, you can remove the Teamcenter configuration or just remove Microsoft Office interfaces from the rich client configuration.

   - To remove the Teamcenter configuration, perform the following steps:

     a. In the **Configuration Maintenance** panel, select **Remove configuration (uninstall)**, and then click **Next**.

     b. In the **Old Configuration** panel, select the configuration you want to remove, and then click **Next**.

     c. In the **Uninstall** panel, select **Yes** to confirm that you want to uninstall the configuration. Click **Next**.

1 Selecting this item uninstalls Teamcenter Extensions for Microsoft Office and Teamcenter Plugin for Microsoft Project.

d. In the **Uninstall Teamcenter** panel, select the **Advanced Uninstall Options** check box if you want to view additional uninstall options. Otherwise, click **Next**.

e. In the **Confirmation** panel, click **Start** to begin the uninstallation.

- To remove Microsoft Office interfaces from the configuration, perform the following steps:

a. In the **Configuration Maintenance** panel, select **Perform maintenance on an existing configuration**, then click **Next**.

b. In the **Old Configuration** panel, select the configuration you want to modify.

c. In the **Feature Maintenance** panel, choose **Add/Remove Features**.

d. In the **Features** panel, clear the check boxes for the Microsoft Office interface features you want to remove:

Extensions→Enterprise Knowledge Foundation→Teamcenter Client for Microsoft Office

Extensions→Systems Engineering and Requirements Management→Teamcenter Extensions for Microsoft Office

e. Proceed through the remaining panels in TEM, entering required information as needed.

f. In the **Confirmation** panel, click **Start** to begin uninstalling features.

Uninstall TCCS

If you installed Teamcenter client communication system (TCCS) as part of an installation of the rich client or Teamcenter Microsoft Office interfaces, uninstalling those clients automatically uninstalls TCCS from your system.

If you installed TCCS using the stand-alone installation wizard, perform the following steps to uninstall TCCS.

1. Stop the FMS client cache (FCC) process:

a. Open a command prompt.

b. Change to the **\tccs\bin** directory in the TCCS installation directory.

> Note:
>
> The default TCCS installation directory is **C:\Program Files\Siemens\Teamcenter***version* **\tccs**.

c. Type the following command:

```
fccstat -stop
```

After stopping the FCC process, the **fccstat** command reports that the FCC is offline.

d. Close the command prompt.

2. Uninstall TCCS:

a. In the Windows Control Panel, open the **Add or Remove Programs** dialog box.

b. In the list of installed programs, select and remove **Teamcenter client communication system**.

c. Restart the system to unset the **FMS_HOME** environment variable.

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