Teamcenter 10.1

Installation on Windows Clients Guide

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Chapter

1 Getting started with Teamcenter client installation

Introduction to Teamcenter client installation

This guide describes how to install Teamcenter 10.1 on Microsoft Windows clients. This includes installation of Teamcenter two-tier rich clients using Teamcenter Environment Manager and four-tier rich clients using the Over-the-Web Installer.

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 information about versions of operating systems, third-party software, Teamcenter software, and system hardware certified for your platform, see the Siemens PLM Software Certification Database:

http://support.industrysoftware.automation.siemens.com/certification/teamcenter.shtml

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 10.1 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	Thin client	Business Modeler IDE client	TCCS[1]
Microsoft Windows (desktop platforms)[2]			•	•	•	•
Microsoft Windows (server platforms)[3]	•	•			•	
Sun Solaris	•	•				
Hewlett-Packard HP-UX[4]	•	•				
IBM AIX	•	•				
SUSE Linux	•	•	•	•	•	•
Red Hat Linux[5]	•	•	•	•	•	•
Apple Macintosh Mac OS				•		•

Notes about platform support

General notes

- For information about versions of operating systems certified for Teamcenter 10.1, see the Siemens PLM Software Certification Database.
- For information about installing Teamcenter on Windows servers, see the *Installation on Windows Servers Guide*.
- For information about installing Teamcenter on Linux clients, see the *Installation on Linux Clients Guide*.
- For information about installing Teamcenter on Macintosh clients, see the *Installation on Macintosh Clients Guide*.
- If your Teamcenter database server is IBM DB2, *all* Teamcenter servers and two-tier rich clients in your network must run operating systems supported for Teamcenter with IBM DB2. IBM DB2 databases are supported only with Teamcenter servers running on Microsoft Windows, IBM AIX, or SUSE Linux platforms.

Microsoft Windows

- Make sure the **C:\Temp** directory exists, and grant full access permissions to this directory for all users.

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 XP and Windows 7.
3. Microsoft Windows server platforms include Windows Server 2008.
4. Itanium platforms only. PA-RISC hardware is not supported.
5. Only 64-bit Red Hat Linux is supported.

- On Windows Server and Windows 7, 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 PLM 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
  ```

  Siemens PLM 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.

- Teamcenter applications are provided in 32-bit and 64-bit versions. Use the appropriate Teamcenter software distribution image for your platform.

- 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.

System hardware

Make sure your Teamcenter host has the required amount of disk space available. *Required hard disk space for Teamcenter configurations* shows the required disk space for the following common Teamcenter configurations:

- Corporate server

  The corporate server contains the features included in the **Corporate Server** solution in Teamcenter Environment Manager (TEM). Additional features may require additional disk space.

  For more information, see the appropriate server installation guide (for Windows or UNIX/Linux).

- Two-tier rich client

The two-tier rich client contains the features included in the **Rich Client 2-tier** solution in Teamcenter Environment Manager (TEM). Additional features may require additional disk space.

For more information, see *Install a two-tier rich client*.

- Web tier

  The Web tier includes the Web Application Manager, a distribution server, and a distribution server instance that contains the **Over-the-Web installer** and **Rich Client 4-tier** solutions. Additional solutions may require additional disk space.

  For more information, see the appropriate server installation guide (for Windows or UNIX/Linux).

Required hard disk space for Teamcenter configurations

Platform	Corporate server	Two-tier rich client	Web tier
Hewlett-Packard HP-UX[6]	3.0 GB	*Not supported*	3 GB
IBM AIX	2.0 GB	*Not supported*	3 GB
SUSE Linux	2.0 GB	300 MB	3 GB
Red Hat Linux	2.0 GB	300 MB	3 GB
Sun Solaris	2.5 GB	*Not supported*	3 GB
Microsoft Windows	1.5 GB	450 MB	4.5 GB

Web browser

The Teamcenter thin client and Over-the-Web Installer[7] require a Web browser. Teamcenter 10.1 supports the following Web browsers:

- Windows systems: Microsoft Internet Explorer and Mozilla Firefox
- Linux systems: Mozilla Firefox
- Macintosh systems: Apple Safari

For information about versions supported, see the Siemens PLM Software Certification Database.

Java Runtime Environment

Teamcenter Environment Manager (TEM) requires a supported Java Runtime Environment (JRE). You must download and install the required JRE before you install Teamcenter.

For information about required versions of the JRE for Teamcenter, see the Siemens PLM Software certification database:

6. Itanium platforms only. PA-RISC hardware is not supported.
7. The Over-the-Web Installer installs the four-tier Teamcenter rich client and Teamcenter Microsoft Office interfaces.

http://support.industrysoftware.automation.siemens.com/certification/teamcenter.shtml

TEM verifies the required version of Java is available on the host. If the required version is not present, TEM does not launch.

Before you launch TEM to install Teamcenter, specify the location of the JRE by one of the following methods:

- Set the appropriate environment variable on your host:
  - 32-bit Java

    Set the **JRE_HOME** environment variable to the location of the 32-bit Java JRE.

  - 64-bit Java

    Set the **JRE64_HOME** environment variable to the location of the 64-bit Java JRE.

  Note You must use the appropriate Teamcenter software distribution image (32-bit or 64-bit) for the JRE you use.

- Use the **-jre** argument to specify the JRE location when you launch TEM from a command prompt:

  ```
  tem –jre JRE-path
  ```

  For example:

  ```
  tem -jre c:\apps\jre1.7
  ```

TEM stores the JRE location during Teamcenter installation. After installation is complete, TEM no longer requires the **JRE_HOME** or **JRE64_HOME** environment variable or the **-jre** argument.

Software integrations

If you use Teamcenter 10.1 integrations to other Siemens PLM Software products or third-party software, install those products *before* you install Teamcenter 10.1.

Some Siemens PLM Software products require separate licenses from your Siemens PLM Software representative. Siemens PLM Software products are licensed using the Siemens PLM Software Common Licensing Server.

For more information about the Common Licensing Server, see the appropriate server installation guide (for Windows or UNIX/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 distribution image and install a supported version of NX on your workstation. You must install the optional Teamcenter Integration for NX executables.

  For installation information, see the installation guide distributed with NX.

- Lifecycle Visualization

Obtain the Lifecycle Visualization software distribution image 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 distribution image and install a supported version on your workstation.

Note Teamcenter Microsoft Office interfaces require additional software.

For more information, see *Installing Microsoft Office interfaces*.

Preparing to install Teamcenter

To enable Teamcenter Environment Manager (TEM), make sure you complete the following:

- Locate the Teamcenter software and documentation distribution images and make sure they are accessible to your host.
- Specify the path to the required Java Runtime Environment (JRE) by setting the appropriate environment variable on your host:
  - o 32-bit Java

    Set the **JRE_HOME** environment variable to the location of the 32-bit Java JRE.

  - o 64-bit Java

    Set the **JRE64_HOME** environment variable to the location of the 64-bit Java JRE.

    Note You must use the appropriate Teamcenter software distribution image (32-bit or 64-bit) for the JRE you use.

  Alternatively, you can specify the JRE path from the command line using the **-jre** argument when you launch TEM:

  ```
  tem –jre JRE-path
  ```

  For example:

  ```
  tem -jre c:\apps\jre1.7
  ```

For information about required versions of the JRE for Teamcenter, see the Siemens PLM Software certification database:

http://support.industrysoftware.automation.siemens.com/certification/teamcenter.shtml

Configuring Teamcenter installation

If your Teamcenter administrator configured the rich client to include Teamcenter lifecycle visualization, ensure you have administrator privileges on your workstation.

Starting Teamcenter installation

To begin installing Teamcenter installation, launch the appropriate Teamcenter installation tool:

- Teamcenter Environment Manager

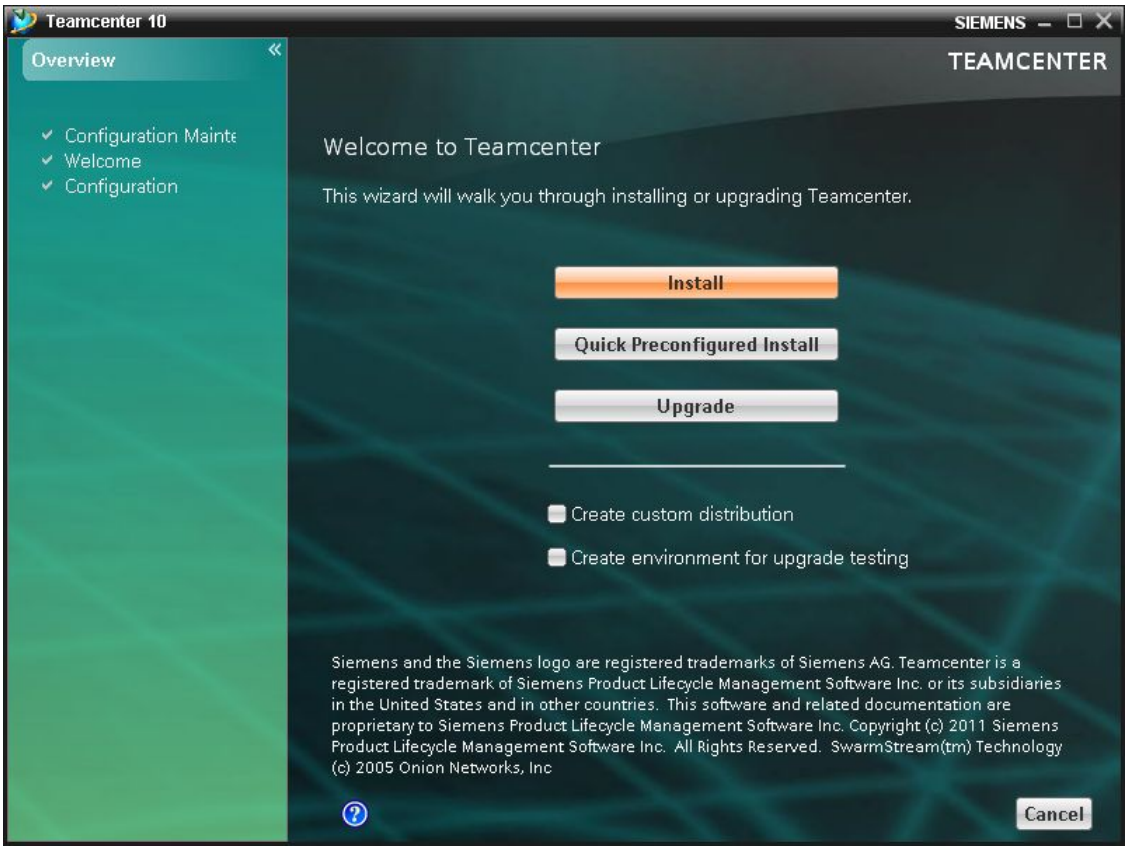
  To install a Teamcenter rich client, launch Teamcenter Environment Manager using the **tem.bat** command from the Teamcenter software distribution image.

- Over-the-Web Installer

  To install a Teamcenter four-tier rich client, open the URL to the Over-the-Web Installer provided by your Teamcenter administrator.

Teamcenter Environment Manager interface

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



Teamcenter Environment Manager

Teamcenter Environment Manager also performs maintenance operations, such as upgrading servers, applying maintenance packs, and installing patches.

You launch Teamcenter Environment Manager using the **tem.bat** command.

Basic concepts about Teamcenter installation

Teamcenter clients

Teamcenter provides clients suited to various uses and network configurations. These clients include the rich client, the thin client, and specialized clients such as 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 and able to run both Teamcenter and customer-written applications. Customers can also extend the standard user interface.

The rich client application is deployed on each user workstation using Teamcenter Environment Manager or the Over-the-Web Installer, depending on which Teamcenter network architecture you use. The rich client is supported in both architectural models described in *Two-tier architecture* and *Four-tier architecture*.

Thin client

The *thin client* provides access to Teamcenter through a standard commercial Web browser, such as Microsoft Internet Explorer or Mozilla Firefox. The user interface provides a streamlined browser-based view of product information stored in a Teamcenter database.

The thin client is supported only in the four-tier architectural model described in *Four-tier architecture*.

Teamcenter network architectures

Teamcenter provides two architecture models for deployment: two-tier and four-tier.

Two-tier architecture

The two-tier architectural model comprises the following tiers:

- Client tier

  The client tier comprises the Teamcenter rich clients.

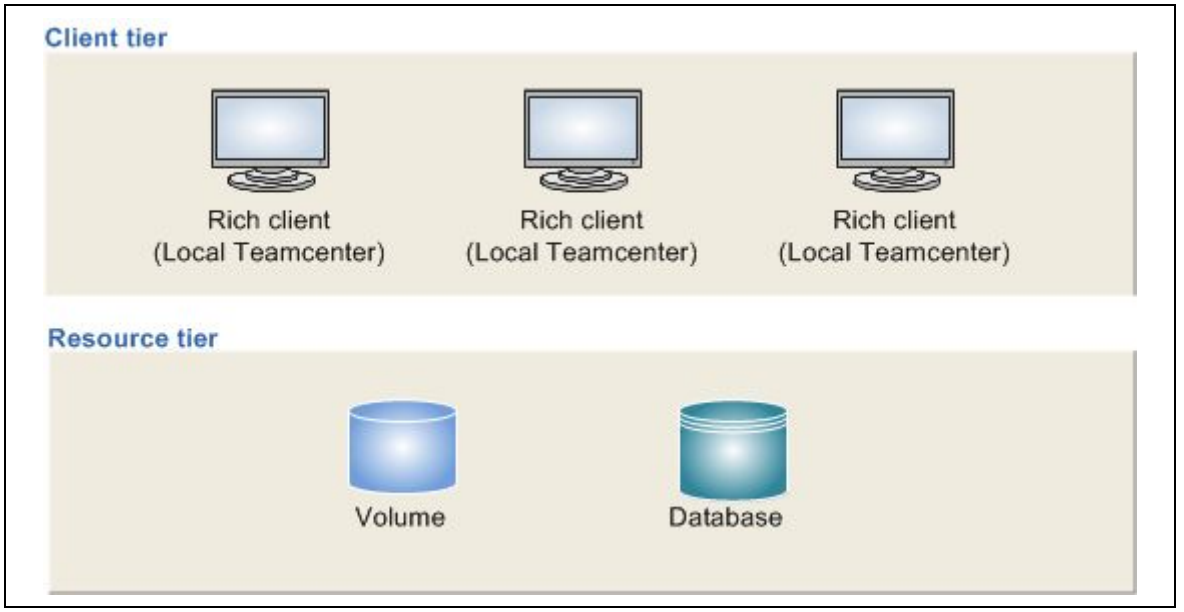
  In a deployment of the two-tier architecture, the Teamcenter server runs on the client workstation.

Note The two-tier rich client is installed only through TEM. Over-the-Web installation is supported only for the four-tier rich client.

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. For information about functionality you can add to a rich client and which add-ons require the Web tier, see the appropriate server installation guide (for Windows or UNIX/Linux).

- 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.

For more information about FMS and two-tier rich client architecture, see the appropriate Teamcenter server installation guide (for Windows or UNIX/Linux).

Four-tier architecture

The four-tier architecture model comprises the following tiers:

- Client tier

  The client tier comprises the Teamcenter rich client, thin 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.)

- J2EE Web tier

  The J2EE Web tier is a Java application that runs in a Java 2 Enterprise Edition (J2EE) application server, such as Oracle WebLogic, and is responsible for communication between the client tier and enterprise tier. For information about supported application servers, see the Siemens PLM Software Certification Database:

  http://support.industrysoftware.automation.siemens.com/certification/teamcenter.shtml

- Enterprise tier

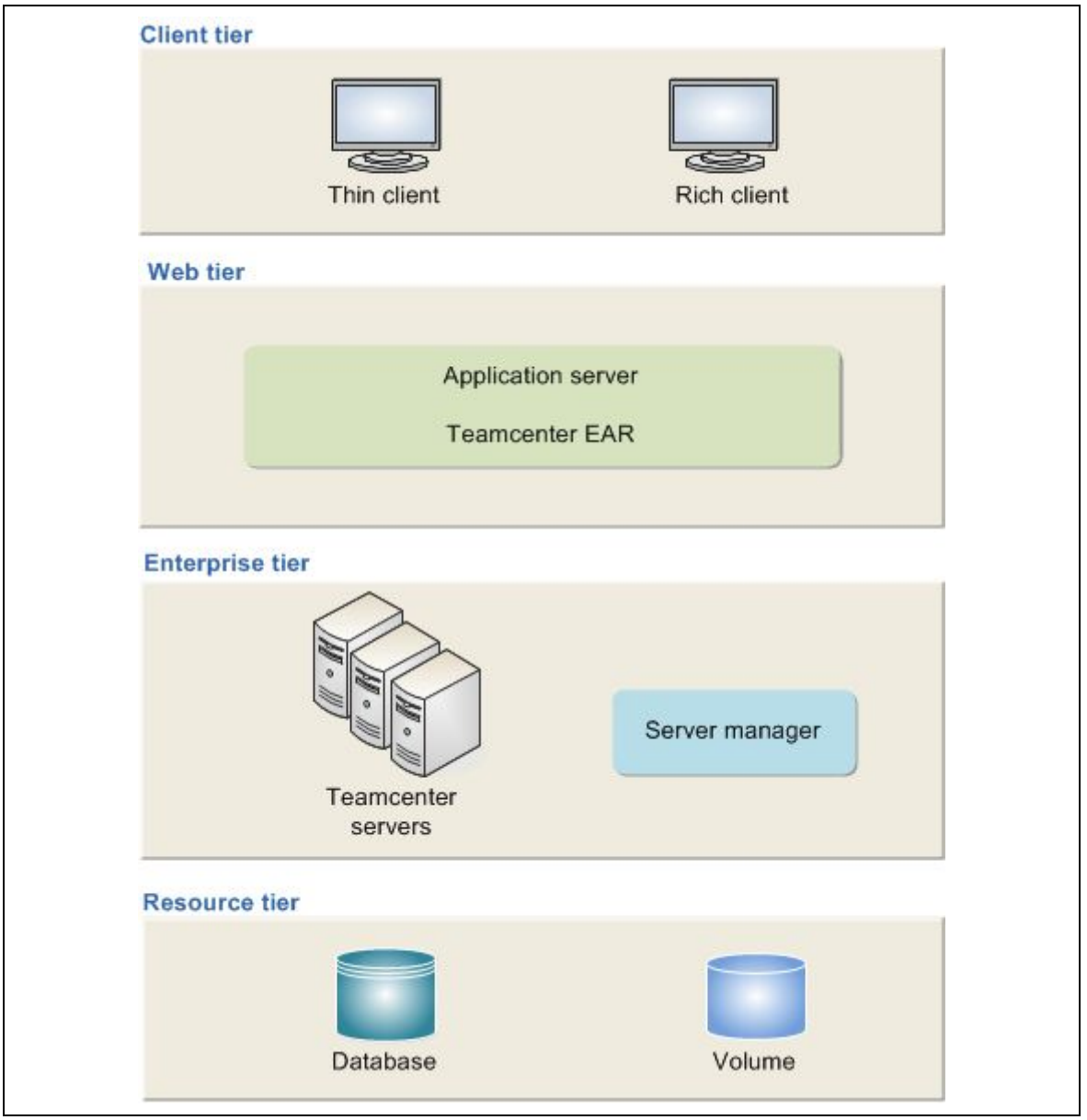
  The enterprise tier comprises a configurable pool of Teamcenter C++ server processes and a server manager. The enterprise tier retrieves data from and stores data in the database.

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

  Note Teamcenter provides server managers based on the J2EE and the Microsoft .NET platforms. Install the appropriate server manager for the Web tier you use.

- 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.

The Teamcenter J2EE based server manager and Web tier application both employ the JBoss cache, a tree-structured cache, to provide replication and transaction context. You must configure the JBoss cache (called *TreeCache* in Teamcenter) in both the J2EE based server manager and the Web tier application.[8]

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 UNIX/Linux).

- A minimum of one server manager for each Web tier deployment.
- A separate TreeCache cluster for each environment.

  To configure a separate TreeCache cluster, Siemens PLM Software recommends configuring a different port (multicast) or set of ports (TCP) for each cluster.

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.

Selecting and configuring features

If you install the rich client using the Over-the-Web Installer, the features your client installation includes is a selection of features configured by your Teamcenter administrator.

The Teamcenter administrator may include the following optional Teamcenter features, applications, and integrations with the rich client:

Teamcenter Integration for NX/NX Integration
SCM Integration – ClearCase

8. This is not required if you use the .NET Web tier and the .NET based server manager.

Teamcenter Automotive Edition–GM Overlay
Teamcenter lifecycle visualization (stand-alone and embedded viewers)
Remote workflow (object linking with Teamcenter portfolio, program and project management)

For information about the optional features, applications, and integrations installed with your rich client, contact your Teamcenter administrator.

If you install the rich client using Teamcenter Environment Manager, you can select client features in the **Select Features** panel. For a description of any feature, point to that feature in the list. You can also see a complete list of available features in the appropriate server installation guide (for Windows or UNIX/Linux).

Basic tasks in Teamcenter installation

Teamcenter client installation consists of running the appropriate Teamcenter installation wizard and then performing any additional client-side configuration required for the Teamcenter features you select.

Installing Teamcenter clients

Install Teamcenter clients using the appropriate client installation method (Teamcenter Environment Manager or the Over-the-Web Installer).

Installing client features

Perform any postinstallation steps necessary for the client features you selected.

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Chapter

2 Installing the rich client

Before you start

- Make sure your client host meets the system hardware and software requirements described in *System requirements*.
- Obtain your Teamcenter user name and password from the Teamcenter administrator for logging on to the rich client.
- Make sure that the rich client installation drive (obtained from the Teamcenter administrator) exists on your workstation and that you have write permissions for it.
- If the Teamcenter administrator configured the rich client to include Lifecycle Visualization, ensure you have administrator privileges on your workstation.

Install a four-tier rich client

Four-tier rich client installation methods

Teamcenter provides two ways to install a four-tier rich client.

Over-the-Web Installer	Installs the four-tier rich client over a network from a rich client distribution instance created by your Teamcenter administrator.[1]
Teamcenter Environment Manager (TEM)	Installs the four-tier rich client on a local host that connects to an existing Teamcenter Web tier.[2]

Note The four-tier rich client requires the Microsoft Visual C++ 2008 redistributable libraries. If these libraries are not present on the client host, the rich client installation programs install them automatically.

1. For information about creating a rich client distribution instance, see the appropriate server installation guide (for Windows or UNIX/Linux).
2. For information about installing the Web tier, see the appropriate server installation guide (for Windows or UNIX/Linux).

Install the four-tier rich client using the Over-the-Web Installer

1. Open the URL to the Over-the-Web Installer, for example:

   http://*host/path***/otwweb/otw.html**

   Obtain the URL from your Teamcenter administrator.

   The Over-the-Web Installer installs the rich client.

   Note

   - If you use a 32-bit Web browser, you must use the 32-bit Over-the-Web Installer. If you use a 64-bit Web browser, you must use the 64-bit Over-the-Web Installer. Make sure the installation URL provided by your Teamcenter administrator is correct for the bit level of your Web browser.

   - Whether your network uses IPv6 (128-bit) or IPv4 (32-bit) addresses, use host names in URLs wherever possible so the domain name system (DNS) can determine which IP address to use.

     If you must use IP addresses and your network uses IPv6 addresses, enclose the literal IPv6 address in square brackets, for example:

     http://[2001:db8:ffff:1:101:12ff:de13:1322]:9043/tc

2. Restart the operating system.

   This step is required to activate the **FMS_HOME** environment variable set by the Over-the-Web Installer.

3. If the rich client includes Teamcenter Automotive Edition–GM Overlay, you must complete the additional required configuration steps described in *Configure Teamcenter Automotive Edition–GM Overlay*.

The Over-the-Web Installer places the Teamcenter rich client icon on your desktop. To start the rich client, double-click the icon.

Note

- Each time you start the rich client, the startup process checks for updates and downloads them to your workstation. After checking and downloading changed and new components, it starts the rich client application using the updated components.

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

  For more information about the automatic logon feature, see the *Preferences and Environment Variables Reference*.

Install the four-tier rich client using TEM

Note On Windows 7 systems, the Windows User Access Control (UAC) or Least-privileged User Account (LUA), if enabled, may interfere with configuration of some rich client features.

1. Install the prerequisite software described in *Before you start* on the client host. Teamcenter Environment Manager (TEM) does not install the prerequisite software.

   Installation of the prerequisite software requires administrative privileges.

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

   For more information, see *Java Runtime Environment*.

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

   For more information, see *Migrate Teamcenter to a different JRE*.

3. Locate the Teamcenter software distribution image.

   You can install the four-tier rich client from a full distribution or a compact distribution.

   - Full distribution

     Full Teamcenter software image as distributed by Siemens PLM Software.

   - Compact distribution

     Compact Teamcenter software installation package created by your Teamcenter administrator. This package is much smaller than a full Teamcenter software image and may contain a selected subset of features.

     For more information about creating a compact distribution, see *Teamcenter Environment Manager Help* or the appropriate Teamcenter server installation guide (for Windows or UNIX/Linux).

4. Start Teamcenter Environment Manager (TEM).

   Browse to the root directory of the Teamcenter software distribution image and double-click the **tem.bat** program icon.

5. In the **Welcome to Teamcenter** panel, click **Install**.

   Note Alternatively, you can install a preconfigured four-tier rich client by clicking **Quick Preconfigured Install** and then selecting **Teamcenter Rich Client 4-tier**.

   For information about installing Teamcenter clients using quick preconfigured install configurations, see *Teamcenter Environment Manager Help*.

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

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

8. 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.)

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

   For information about a feature, point to the feature in the list to display a description. For a complete list of Teamcenter features, see the *Installation on Windows Servers Guide*. The **Teamcenter Rich Client 4-tier** feature is selected by default.

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

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

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

    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 Teamcenter client communication system (TCCS).

    - If you use SiteMinder, you must configure TCCS to detect form-based challenges originating from the reverse proxy by adding the **checkHeaders;false** criterion.

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

    If either of these conditions apply, configure TCCS reverse proxy settings in the **Reverse Proxy Settings** panel in TEM:

    - If you use SiteMinder, configure TCCS to detect form-based challenges originating from the reverse proxy by adding the following criterion to the **Private Reverse Proxy Settings** table.

Header name	Header value
checkHeaders	**false**

    - If you use WebSEAL and you deploy the TCCS configuration, you can optionally add the following criterion to the **Private Reverse Proxy Settings** table.

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

11. 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, 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.

    For more information about configuring File Management System, see the *System Administration Guide*.

12. 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 Whether your network uses IPv6 (128-bit) or IPv4 (32-bit) addresses, use host names in URIs wherever possible so the domain name system (DNS) can determine which IP address to use.

    If you must use IP addresses and your network uses IPv6 addresses, enclose the literal IPv6 address in square brackets, for example:

    http://[2001:db8:ffff:1:101:12ff:de13:1322]:9043/tc

13. In the **Rich Client Settings** panel, specify whether you want to enable online help in your rich client configuration, and how you want to access online help.

    Note If you select the **Online Help** feature (under **Server Enhancements**) in the **Features** panel, the **Enable online help** check box is selected and the **Help files directory** box specifies the default help files location (*TC_ROOT***help**).

    If you want to specify Security Services settings or other advanced rich client settings, click **Advanced**.

14. 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.

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 one of the following:

- 32-bit rich client:

  Teamcenter 10.1 (*TC_ROOT*)

- 64-bit rich client:

  Teamcenter 10.1 (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.

Install a two-tier rich client

Note The two-tier rich client is installed only through TEM. Over-the-Web installation is supported only for the four-tier rich client.

1. If your Teamcenter server uses an IBM DB2 database, install the IBM DB2 redistributable client on your two-tier rich client host.

   For more information, see the *Installation on Windows Servers Guide*.

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

   For more information, see *Java Runtime Environment*.

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

   For more information, see *Migrate Teamcenter to a different JRE*.

3. Locate the Teamcenter software distribution image.

   You can install the two-tier rich client from a full distribution or a compact distribution.

   - Full distribution

     Full Teamcenter software image as distributed by Siemens PLM Software.

   - Compact distribution

     Compact Teamcenter software installation package created by your Teamcenter administrator. This package is much smaller than a full Teamcenter software image and may contain a selected subset of features.

     For more information about creating a compact distribution, see *Teamcenter Environment Manager Help* or the appropriate Teamcenter server installation guide (for Windows or UNIX/Linux).

4. Start Teamcenter Environment Manager:

   a. Browse to the root directory of the Teamcenter software distribution image.

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

5. In the **Welcome to Teamcenter** panel, click **Install**.

   Note Alternatively, you can install a preconfigured two-tier rich client and corporate server by clicking **Quick Preconfigured Install** and then selecting **Teamcenter Corporate Server and Rich Client 2-tier**.

   For information about installing Teamcenter clients using quick preconfigured install configurations, see *Teamcenter Environment Manager Help*.

6. Proceed to the **Configuration** panel. Enter a unique ID and description for the Teamcenter rich client configuration.

   Note Record the description and ID you enter for this configuration. When uninstalling this configuration or performing other maintenance tasks, you must select this configuration from a list. In addition, installation log files use the ID you enter in their names.

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

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

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

   For information about a feature, point to the feature in the list to display a description. For a complete list of Teamcenter features, see the appropriate server installation guide (for Windows or UNIX/Linux). The **Teamcenter Rich Client 2-tier** feature is selected by default.

   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.
   - You can add features to your rich client configuration later using TEM.
   - For more information about any panel in TEM, click the help button  .

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

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

11. 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, 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.

For more information about configuring File Management System, see the *System Administration Guide*.

12. 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.

13. 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.[3]

       C. Enter a unique name for the connection.

       D. Click **OK**.

       E. If you want to add access to additional databases, repeat steps A through D 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**.

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

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.
- For information about enabling multiple rich client support, see *Enabling multiple client sessions*.

14. In the **Rich Client Settings** panel, specify whether you want to enable online help in your rich client configuration, and how you want to access online help.

    Note If you select the **Online Help** feature (under **Server Enhancements**) in the **Features** panel, the **Enable online help** check box is selected and the **Help files directory** box specifies the default help files location (*TC_ROOT***help**).

    If you want to specify Security Services settings or other advanced rich client settings, click **Advanced**.

15. 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 installing the rich client.

    When installation is complete, close TEM.

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 one of the following:
  - 32-bit rich client:

    Teamcenter 10.1 (*TC_ROOT***)**
  - 64-bit rich client:

    Teamcenter 10.1 (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 the rich client includes Teamcenter Automotive Edition–GM Overlay, you must complete the additional required configuration steps described in *Configure Teamcenter Automotive Edition–GM Overlay*.
- 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

Alternate rich client configurations

About alternate rich client configurations

If you have limited Teamcenter licenses or do not need full rich client functionality, you may want to install one of the following rich client features:

Teamcenter Rich Client (Lite Edition)

Provides a rich client with only the My Teamcenter application and limited 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.[4]

Install the rich client lite edition

1. Start TEM from the root directory of the Teamcenter software distribution image.
2. Create a new Teamcenter configuration as described in *Install a two-tier rich client* or *Install a four-tier rich client*. Proceed to the **Features** panel.
3. Under **Teamcenter Rich Client**, select **Teamcenter Rich Client 2-tier** or **Teamcenter Rich Client 4-tier**.
4. Under **Extensions® Engineering Process Management**, select **NX Manager for Rich Client**.
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 using the procedure described in the *Installation on Windows Servers Guide*.
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. For the rich client lite edition in a four-tier installation, you can alternatively install the **Rich Client 4-Tier Lite Edition** solution using the Web Application Manager as described in the appropriate server installation guide (for Windows or UNIX/Linux.)

4. Start TEM (**tem.bat**) from the root directory of the Teamcenter software distribution image.

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 10.1** 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 10.1** 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 10.1** shortcut.

Configure rich client features

Configuring client display language

By default, Teamcenter clients display in the language specified by your operating system locale settings. If you want to override the default language, perform the appropriate procedure to choose the display language for the thin client or the rich client.

Choose a display language for the thin client

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.

  For more information, see the following URL:

  http://www.w3.org/TR/ltli/

- Whether your network uses IPv6 (128-bit) or IPv4 (32-bit) addresses, use host names in URLs wherever possible so the domain name system (DNS) can determine which IP address to use.

  If you must use IP addresses and your network uses IPv6 addresses, enclose the literal IPv6 address in square brackets, for example:

  http://[2001:db8:ffff:1:101:12ff:de13:1322]:9043/tc

- 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 thin 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 thin client display language, clear your Web browser cache. This prevents the interface from displaying in mixed languages.

For more information about configuring language display during installation, see the appropriate server installation guide (for Windows or UNIX/Linux).

Choose a display language for the rich client

By default, the rich client is displayed in the language specified by the operating system.

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.

  For more information about configuring language display during installation, see the appropriate server installation guide (for Windows or UNIX/Linux).

- If you find that Asian multibyte characters do not display correctly in the rich client, set your system font to a font that supports Asian multibyte characters. For example, on Microsoft Windows systems, 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 desired locale code listed in the *Localization Guide*.

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 locale codes listed in *Localization Guide*.

   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**).

Add, remove, or modify databases

1. Start Teamcenter Environment Manager (TEM):

   Start® Programs® Teamcenter 10.1® Environment Manager

   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**.

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 described in *Install a two-tier rich client*.
   - 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 as described in *Install a two-tier rich client*.

   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, TEM cannot start.

For more information, see *Troubleshooting*.

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

1. Start Teamcenter Environment Manager (TEM):

   Start® Programs® Teamcenter 10.1® Environment Manager

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

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

3. 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**.

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

   Caution If you use 64-bit Teamcenter, make sure you specify a 64-bit JRE. Similarly, for 32-bit Teamcenter, you must specify a 32-bit JRE.

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

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

If you encounter problems migrating Teamcenter to the new JRE, see *Troubleshooting*.

Configure Teamcenter Automotive Edition–GM Overlay

Set environment variables and complete configuration for Teamcenter Automotive Edition–GM Overlay and related features.

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. 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 DesignContext 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**.

   For information about installing the QPL server, see the appropriate server installation guide (for Windows or UNIX/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 DesignContext 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.

Chapter

3 Creating a custom distribution

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Chapter

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 distribution image 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 distribution image. 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 distribution image.

2. Start Teamcenter Environment Manager (**tem.bat**) from the Teamcenter software distribution image.

3. In the **Welcome to Teamcenter** panel, select the **Create custom distribution** check box, and then click **Install**.

4. 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**.

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

   Teamcenter Environment Manager creates the silent installation file you specified in step 4. 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 distribution image.

For more information about creating a compact distribution, see *Create a compact distribution*.

Installing 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 For information about creating a silent distribution of the rich client, see *Create a silent installation configuration file*.

Modify the silent installation configuration file

The silent installation configuration file is XML-based, as shown in *Sample silent installation configuration file*. 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 PLM 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.

```
<?xml version="1.0" encoding="UTF-8" ?>
- <root>
  <tem engine="2008.0.0" />
- <settings>
  <installDir value="C:\\Program Files\\Siemens\\Teamcenter10" />
  <sourceDir value="C:\\tc\\tc900_win" />
  <application value="tceng" />
  <silentMaintenance value="false" />
  <installingUser value="tc_user" />
  <installLanguage value="ENGLISH" />
  <version value="9000.0.0.20110504" />
  </settings>
- <config name="My Configuration 1" id="config1">
- <mode type="install">
- <checkpoints>
- <checkpoint value="featureProperties">
  <point value="coreTemplate:foundation_template.xml" />
  <point value="minDB2Version:9.5" />
  <point value="feature_id:datamodel,rtserver" />
  <point value="template_file:foundation_template.xml" />
  <point value="minOracleVersion:10.2.0.1" />
  <point value="minMSSQL2005Version:9.0" />
  <point value="template_name:foundation" />
  <point value="typeAnalysis:true" />
  </checkpoint>
  </checkpoints>
  </mode>
  <comments />
- <data>
- <adminUser guid="2E53CF5E50FC3AC707D1D0566F0F213B">
  <password value="ENCRYPTED:1c8c4cdcccded2c2" />
  <user value="infodba" />
  </adminUser>
- <director guid="661AA614566CA975D92A7EBE985F3EA3">
  <status value="0" />
- <script>
  <temBase />
  <copyFeature guid="A0CF70EB869C3A0BC6171BD22667EA52" />
  <copyFeature guid="90C2AAF88A1CA61FAB397B96F6E4AAC1" />
  <copyFeature guid="8C061D687B13E0CB9DC4A3348BE" />
  <copyFeature guid="B176F6B6E92010FE91D9804EFB0DD613" />
  <unpack feature="A0CF69C22667E3A0BC61770EB81BDA52" />
  <unpack feature="90C2A1C1FAB397AF88ABE96F6A64AAC1" />
  <unpack feature="8C061D87B1A3D51E13E0CB9DC46348BE" />
  <unpack feature="B176FB0D2016B6E9E91D9804EF0FD613" />
  <preInstall feature="A0CF69C3A0BC61770EB81BD22667EA52" />
  <preInstall feature="90C2A1C96F6A61FAB397AF88ABE4AAC1" />
  <preInstall feature="8C061DD51E13E0CB9DC4687B1A3348BE" />
  <preInstall feature="B176F6B6E9E91D9804EFB0D2010FD613" />
  <install feature="A0CF69C3A0BC61770EB81BD22667EA52" />
  <install feature="90C2A1AB397AC96F6A61FF88ABE4AAC1" />
  <install feature="8C061DD51E13E0CB9DC4687B1A3348BE" />
  <install feature="B176F6B6E9E91D9804EFB0D2010FD613" />
  <postInstall feature="A0CF69C3A0BC61770EB81BD22667EA52" />
  <postInstall feature="90C2A1C96B397AF88ABF6A61FAE4AAC1" />
  <postInstall feature="8C061DD51E13E0CB9DC4687B1A3348BE" />
  <postInstall feature="B176F6B6E9E91D9804EFB0D2010FD613" />
  <featureInstalled feature="A0CF69C3A0BC61770EB81BD22667EA52" />
  <featureInstalled feature="90C2A1C96F6A61FAB397AF88ABE4AAC1" />
  <featureInstalled feature="8C061DD51E13E0CB9DC4687B1A3348BE" />
  <featureInstalled feature="B176F6B6E9E91D9804EFB0D2010FD613" />
  </script>
  </director>
- <FSCService guid="F2FCBC1E3A11EEC03DFF7F9DC9B64BD2">
  <fscReadCacheDir value="$HOME\\FSCCache" />
  <fscWriteCacheDir value="$HOME\\FSCCache" />
  <addToBootstrap value="true" />
  <fscReadCacheSize value="10" />
  <serverID value="FSC_myfsc" />
  <log value="" />
  <fscWriteCacheSize value="10" />
  </FSCService>
- <FSCMasterSettings guid="EBC3422F7E0E3A827C6BF18F1EFE1134">
  <masterModel value="Simple Model" />
  </FSCMasterSettings>
- <FscSiteImport guid="630BEC48A9748F927EC742A76D5868DA">
  <remoteSites value="" />
  </FscSiteImport>
```

Sample silent installation configuration file (Continued)

```
  - <tcdata guid="4500621E2BE24BF0DD6ABF31EBA01088">
  <path value="C:\\Program Files\\Siemens\\tcdata1" />
  <create value="true" />
  </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="35EE6A6B3D91876B85467D5EDE51EACE">
  <siteListString value="" />
  </FccSite>
- <FSCServiceConnections guid="E4BDA0B52E123C9F1CB10A49F0C326F1">
  <connections value="http,4545,;" />
  </FSCServiceConnections>
- <OSUser guid="CA769D31FD7E1A0BBBD722E5E509E809">
  <password value="ENCRYPTED:3448ee60e4c8a0c248" />
  <user value="LM6S003\\yytcadm" />
  </OSUser>
- <flexClient guid="7221ECFBC9555CDF997FC3F575022761">
  <nX5String value="28000@svnxflex1;28000@svnxflex2" />
  <port value="27000" />
  <nX4String value="27000@trlic001;27000@trlic002" />
  <nX5Port value="28000" />
  <host value="trlic001" />
  <nX5CheckBox value="true" />
  <nX5Host value="svnxflex1" />
  <envServerString value="28000@svnxflex1;28000@svnxflex2" />
  </flexClient>
- <foundationSettings guid="LHBY67HDNDHFJTZYMYHSKED26FZD84I7">
  <genClientCache value="delete" />
  <genServCache value="" />
  <enableGenServCache value="true" />
  </foundationSettings>
- <transientVolume guid="983980098FF188A8C4BF08E8168A32A8">
  <windowsVolume value="C:\\Temp\\transientVolume_tc_user" />
  <unixVolume value="/tmp/transientVolume_tc_user" />
  </transientVolume>
- <TcOracleSystem guid="1EF0859AC04962CBFA41C4C8C84499A1">
  <password value="ENCRYPTED:3448ee60e4c8a0c248" />
  <user value="system" />
  <tablespaces value="tc_user_IDATA:90;tc_user_ILOG:5;tc_user_INDX:5;tc_user_TEMP:5" />
  <tablespacePath value="c:\\tc_mydata" />
  </TcOracleSystem>
- <volume guid="1F16971107DE44C0C7827F800EE4AEF8">
  <port value="4545" />
  <fscModel value="Simple Model" />
  <location value="C:\\Program Files\\Siemens\\volume1" />
  <name value="volume" />
  <hostName value="lm6s003" />
  <fscId value="FSC_myfsc" />
  </volume>
- <TcOracleEngine guid="F4F7C0852B27D6E56B8C64BE77FFA14C">
  <port value="1521" />
  <createUser value="true" />
  <host value="lm6s003" />
  <flush value="false" />
  <populate value="true" />
  <service value="tc" />
  <password value="ENCRYPTED:34eae6cae4e8c6be" />
  <user value="tc_user" />
  <create value="true" />
  </TcOracleEngine>
  </data>
- <features>
  <add feature="A0CF69C3A0BC61770EB81BD22667EA52" name="VC 2005/2008 Redistributables" />
  <add feature="90C2A1C96F6A61FAB397AF88ABE4AAC1" name="FMS Server Cache" />
  <add feature="8C061DD51E13E0CB9DC4687B1A3348BE" name="Teamcenter Foundation" />
  <add feature="B176F6B6E9E91D9804EFB0D2010FD613" name="NX Integration" />
  </features>
  </config>
  <updateManager />
  <webAppManager />
  </root>
```

Sample silent installation configuration file

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 distribution image.

2. Start TEM (**tem.bat**) from the Teamcenter software distribution image.

3. In the **Welcome to Teamcenter** 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 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 distribution image.

For more information about creating a silent distribution, see *Create a silent installation configuration file*.

Chapter

4 Installing Microsoft Office interfaces

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Chapter

4 Installing Microsoft Office interfaces

Installing Microsoft Office interfaces

Teamcenter provides multiple 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, and Outlook in Microsoft Office 2007 or Microsoft Office 2010. From Outlook, you can save e-mail 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 client or separately as an add-in to Microsoft Office. Client for Office is independent of the Teamcenter rich client and thin client. You can work in Client for Office while either Teamcenter client is running. Or, you can work solely through Client for Office without running a Teamcenter client.

  For information about features and use of Client for Office, see the *Client for Microsoft Office Guide*.

- Teamcenter Extensions for Microsoft Office

  Teamcenter Extensions for Microsoft Office provides easy access to Teamcenter through Microsoft Office Live features in Microsoft Excel and 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.

  For information about using Extensions for Office, see the *Extensions for Microsoft Office Guide*.

- Teamcenter Plugin for Microsoft Project

  The Teamcenter Plugin for Microsoft Project allows Microsoft Project users to exchange data directly with Schedule Manager.

For information about using the Teamcenter Plugin for Microsoft Project, see the *Schedule Manager Guide*.

Note Siemens PLM Software recommends uninstalling previous versions of Teamcenter Microsoft Office interfaces before installing current versions.

For more information, see *Uninstall Microsoft Office interfaces*.

Installing Teamcenter Client for Microsoft Office

Choose the installation method for Client for Office

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

Stand-alone installation wizard	Provides a step-by-step interface that installs Client for Office on a single host. This wizard does not install the Teamcenter rich client.
Teamcenter Environment Manager (TEM)	Provides the flexibility to install Client for Office alone or as part of a four-tier rich client configuration, and also add other Teamcenter features.
Over-the-Web Installer	Provides a preconfigured Client for Office configuration that can be installed with minimal user interaction through a Web browser. The installation program is part of a *distribution instance* created by the Teamcenter administrator that contains Client for Office and optionally the four-tier rich client and other Teamcenter features.[1]

If you install Client for Office using the Over-the-Web Installer, contact your Teamcenter administrator to obtain the URL to the distribution instance that contains the **Office Client for Microsoft Office** solution.

If you install Client for Office using TEM or the stand-alone installation wizard, be prepared to provide the following information during installation of Client for Office. Obtain these values from your Teamcenter administrator if necessary:

Teamcenter server information	• Host name • Port • Teamcenter application name
FMS server cache (FSC) information	• Host name • Port • Protocol

1. For more information about installing a distribution instance, see the appropriate server installation guide (for Windows or UNIX/Linux).

Security Services information[2]	• Application ID • Application name • Server host name • Server port

Install required software for Client for Office

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

- Applications:

  Microsoft Office 2007 or later

  Teamcenter Client for Microsoft Office does not support earlier versions of Microsoft Office.

- Additional libraries:

  Microsoft .NET Framework 3.5 SP1[3]

  Microsoft Visual Studio Tools for Office (VSTO) 2010 for 32-bit Windows; VSTO 2010 (x64) for 64-bit Windows

  Microsoft Office 2010 Primary Interop Assemblies (PIAs) for Office 2010; Microsoft Office 2007 Primary Interop Assemblies (PIAs) for Office 2007

  Visual JSharp .NET Redistributable 2.0 Second Edition (SE x86) for 32-bit Windows; Visual JSharp .NET Redistributable 2.0 Second Edition (SE x64) for 64-bit Windows

  The stand-alone Client for Office installation wizard installs the required libraries if they are not present.

  If you install Client for Office using TEM or the Over-the-Web Installer, you must install the prerequisite software *before* you install Client for Office. Download the necessary libraries from Microsoft Corporation:

  http://www.microsoft.com

  Installing Microsoft libraries requires administrative privileges.

Note

- On 64-bit versions of Windows, install the x64 versions of these libraries. On 32-bit versions of Windows, install the x86 versions.

  On 64-bit Windows, uninstall any x86 (32-bit) library before you install the x64 (64-bit) library.

- On 64-bit versions of Windows, you must also enable Microsoft .NET framework programmability support for Microsoft Office applications.

2. Security Services information is needed only you use Security Services with Client for Office.
3. Microsoft .NET Framework requires a system restart to complete installation.

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 version 2.0 and 3.0 or 3.5.

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. Browse to the **additional_applications\OfficeClient** directory in the Teamcenter software distribution image. Double-click the **setup.exe** program icon to launch the installation wizard.
2. 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.
3. 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.

   For more information, see *Java Runtime Environment*.
4. In the **Select Features** dialog box, select the features you want to include in your installation.

Note

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

  For more information about using this feature, see the *Client for Microsoft Office Guide*.

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

  For more information about TCCS, see *What is TCCS?*.

5. 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.

6. 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 7.

   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** Whether your network uses IPv6 (128-bit) or IPv4 (32-bit) addresses, use host names in URLs wherever possible so the domain name system (DNS) can determine which IP address to use. If you must use IP addresses and your network uses IPv6 addresses, enclose the literal IPv6 address in square brackets, for example: **http://[2001:db8:ffff:1:101:12ff:**

Value	Description
	de13:1322]:9043/tc For more information about managing TCCS environments, see the *System Administration Guide*.
Manually configure proxy settings	Specifies that you want to enter proxy settings manually.
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.

Value	Description
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 Whether your network uses IPv6 (128-bit) or IPv4 (32-bit) addresses, use host names in URLs wherever possible so the domain name system (DNS) can determine which IP address to use.

If you must use IP addresses and your network uses IPv6 addresses, enclose the literal IPv6 address in square brackets, for example:

http://[2001:db8:ffff:1:101:12ff:de13:1322]:9043/tc

For more information about managing TCCS environments, see the *System Administration Guide*.

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.
  - o 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 checkbox. *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. 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.

The following is an example of a Kerberos configuration file (**krb5.ini**):

```
[libdefaults]
default_realm = TCSS2.NET
default_tkt_enctypes = aes128-cts rc4-hmac des3-cbc-sha1 des-cbc-md5 des-cbc-crc
default_tgs_enctypes = aes128-cts rc4-hmac des3-cbc-sha1 des-cbc-md5 des-cbc-crc

[realms]
TCSS2.NET = {
 kdc = myhost1.TCSS2.net
}
TCSSO.NET = {
 kdc = myhost2.TCSSO.net
}
TCTCSS.NET = {
 kdc = myhost3.TCTCSS.net
}
TCTCSS-CHILD.TCTCSS.NET = {
    kdc = myhost4.net.acmecorp.com
}

[domain_realm]
.TCSS2.net = TCSS2.NET
.TCTCSS.net = TCTCSS.NET
.TCTCSS-child.TCTCSS.net = TCTCSS-CHILD.TCTCSS.NET
.TCSSO.net=TCSSO.NET

[capaths]
TCTCSS.NET = {
      TCSSO.NET = .
}
```

f. Skip to step 9 to continue installation.

7. 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.

8. 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**).

Value	Description
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.

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

Note

- For more information about advanced TCCS configuration, see the *System Administration Guide*.
- The installation wizard may display additional prompts when installing the required Microsoft libraries. Some software, such as the Microsoft .NET Framework, may require a system restart to complete installation.

  For information about required software for Client for Office, see *Install required software for Client for Office*.

Install Client for Office using TEM

1. Install the prerequisite software described in *Install required software for Client for Office* on the client host. Teamcenter Environment Manager (TEM) does not install the prerequisite software.

   Installation of the prerequisite software requires administrative privileges.

2. Locate the Teamcenter software distribution image.

   You can install Client for Office from a full distribution or a compact distribution.

   - Full distribution

     Full Teamcenter software image as distributed by Siemens PLM Software.

   - Compact distribution

     Compact Teamcenter software installation package created by your Teamcenter administrator. This package is much smaller than a full Teamcenter software image and may contain a selected subset of features.

     For more information about creating a compact distribution, see *Teamcenter Environment Manager Help* or the appropriate Teamcenter server installation guide (for Windows or UNIX/Linux).

3. Start TEM:

   a. Browse to the root directory of the Teamcenter software distribution image.

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

4. In the **Welcome to Teamcenter** panel, click **Install**.

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

   Proceed to the **Features** panel.

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

   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.
   - If you install Client for Office 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.
   - For more information about any panel in TEM, click the help button  .

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

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

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

9. 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

   Whether your network uses IPv6 (128-bit) or IPv4 (32-bit) addresses, use host names in URIs wherever possible so the domain name system (DNS) can determine which IP address to use.

   If you must use IP addresses and your network uses IPv6 addresses, enclose the literal IPv6 address in square brackets, for example:

   http://[2001:db8:ffff:1:101:12ff:de13:1322]:9043/tc

10. In the **Office Client Requirement** panel, choose whether to install Client for Office for the current user or for all users on the client host.

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

11. In the **Office Client Configuration** panel, enter the following connection information:

    - Teamcenter servers

      In the **Teamcenter Servers** table, type values for the Teamcenter server to which Client for Office connects in the **Connection Name**, **Protocol**, **Host**, **Port**, and **Application Name** boxes. To add an additional server, click **Add**, and then enter the required connection values. To remove a server from the list, select the server and click **Remove**.

- Security Services

  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.

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

Install Client for Office using the Over-the-Web Installer

1. Install the prerequisite software described in *Install required software for Client for Office* on the client host. The Over-the-Web Installer does not install the prerequisite software. Installation of the prerequisite software requires administrative privileges.

2. Open the URL to the Client for Office distribution instance:

   http://*host***:***port***/***application***/otw.html**

   Replace *host*, *port*, and *application* with the host, port, and application name of the Client for Office distribution instance.[4] For example:

   http://myhost:8080/tc/otw.html

   The Over-the-Web Installer installs Client for Office.

Note

- Whether your network uses IPv6 (128-bit) or IPv4 (32-bit) addresses, use host names in URLs wherever possible so the domain name system (DNS) can determine which IP address to use.

  If you must use IP addresses and your network uses IPv6 addresses, enclose the literal IPv6 address in square brackets, for example:

  http://[2001:db8:ffff:1:101:12ff:de13:1322]:9043/tc

- Depending on the Teamcenter software installed on your host, the Over-the-Web Installer may instruct you to verify or to manually set the **FMS_HOME** environment variable to a specified value. **FMS_HOME** must be set correctly for Client for Office to connect to Teamcenter.

Installing Teamcenter Extensions for Microsoft Office

Choose the installation method for Extensions for Office

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

4. The Teamcenter administrator must create a distribution instance that contains the **Over-the-Web Installer** and **Office Client for Microsoft Office** solutions. For more information about installing a distribution server instance, see the appropriate server installation guide (for Windows or UNIX/Linux).

Stand-alone installation wizard	Provides a step-by-step interface that installs Extensions for Office on a single host. This wizard does not install the Teamcenter rich client.
Teamcenter Environment Manager (TEM)	Provides the flexibility to install Extensions for Office alone or as part of a two-tier or four-tier rich client configuration, and also add other Teamcenter features.
Over-the-Web Installer	Provides a preconfigured Extensions for Office configuration that can be installed with minimal user interaction through a Web browser. Installing Extensions for Office using the Over-the-Web Installer requires that your Teamcenter administrator built and deployed a *distribution instance* that contains the **Teamcenter Applications for Microsoft Office** solution.[5]

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.

Install required software for Extensions for Office

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

- One or more of the following applications:
  - Microsoft Office Word 2007 or 2010 (Professional, Professional Plus, or Enterprise edition), 32-bit or 64-bit version
  - Microsoft Office Excel 2007 of 2010 (Professional, Professional Plus, or Enterprise edition), 32-bit or 64-bit version
- Additional Microsoft libraries:
  - Microsoft .NET Framework 3.0[6]
  - Microsoft Office 2007 Primary Interop Assemblies (PIAs), if you use Office 2007

  The stand-alone Extensions for Office installation wizard installs the required libraries if they are not present.

  If you install Extensions for Office using TEM or the Over-the-Web Installer, you must install the prerequisite software *before* you install Extensions for Office. Download the necessary libraries from Microsoft Corporation:

  http://www.microsoft.com

  Installing Microsoft libraries requires administrative privileges.

5. For more information about installing a distribution instance, see the appropriate server installation guide (for Windows or UNIX/Linux).
6. Microsoft .NET Framework requires a system restart to complete installation.

Note On 64-bit Windows versions, make sure you also enable .NET interoperability support for Microsoft Office applications.

Install Extensions for Office using the stand-alone installation wizard

1. Browse to the **additional_applications\tc_ext4mso** directory in the Teamcenter software distribution image. Double-click the **tc_ex4mso.exe** program icon to launch the Teamcenter Applications for Microsoft Office installation wizard.

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

   Note For information about installing Teamcenter Plugin for Microsoft Project, see *Install Teamcenter Plug-in for Microsoft Project*.

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

   Note If all the required software libraries are not present on your client host, the installation wizard may display additional prompts during installation of the required libraries. Some software, such as the Microsoft .NET Framework, may require a system restart to complete installation.

   For information about required software for Extensions for Office, see *Install required software for Extensions for Office*.

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

For more information, see the *Extensions for Microsoft Office Guide*.

Install Extensions for Office using TEM

1. Install the prerequisite software described in *Install required software for Extensions for Office* on the client host. Teamcenter Environment Manager (TEM) does not install the prerequisite software.

   Installation of the prerequisite software requires administrative privileges.

2. Locate the Teamcenter software distribution image.

   You can install Extensions for Office from a full distribution or a compact distribution.

   - Full distribution

     Full Teamcenter software image as distributed by Siemens PLM Software.

   - Compact distribution

     Compact Teamcenter software installation package created by your Teamcenter administrator. This package is much smaller than a full Teamcenter software image and may contain a selected subset of features.

For more information about creating a compact distribution, see *Teamcenter Environment Manager Help* or the appropriate Teamcenter server installation guide (for Windows or UNIX/Linux).

3. Start TEM:
   a. Browse to the root directory of the Teamcenter software distribution image.
   b. Double-click the **tem.bat** program icon.
4. In the **Welcome to Teamcenter** panel, click **Install**.
5. In the **Configuration** panel, enter an ID and a description for the new Teamcenter configuration.

   Proceed to the **Features** panel.
6. 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.
   - If you install Extensions for Office 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.
   - For more information about any panel in TEM, click the help button  .
7. 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.
8. Proceed to the **Confirmation** panel and review your selections. Click **Start** to install Extensions for Office, or click **Back** to change your selections.

Install Extensions for Office from the rich client

1. Install the prerequisite software described in *Install required software for Extensions for Office* on the client host. The Over-the-Web Installer does not install the prerequisite software. Installation of the prerequisite software requires administrative privileges.
2. Ensure the following preferences are set on your rich client host:

   WEB_default_site_server
   WEB_default_site_deployed_app_name

   For more information about these preferences, see the *Preferences and Environment Variables Reference*.

3. Log on to the Teamcenter rich client.

4. Double-click a Microsoft Office dataset.

   If this is the first time you have attempted to access a Microsoft Office dataset from the rich client, Internet Explorer prompts you to install a program named **Teamcenter Applications for Microsoft Office**.

5. Click **Install**.

   The installation is complete when the status line displays **Done**. If the installation failed, a broken image symbol is displayed at the bottom of the page.

6. To verify installation, click a Microsoft Office dataset in the rich client. If the associated Microsoft Office application starts, the installation is successful.

Install Teamcenter Plug-in for Microsoft Project

1. Browse to the **additional_applications\tc_ext4mso** directory in the Teamcenter software distribution image.

2. Double-click the **TcMspIntegrationSetup.exe** program icon to launch the Teamcenter Microsoft Project Integration installation wizard.

3. Complete the wizard to install the integration.

4. To verify the installation completed successfully, start Microsoft Project and verify the **Teamcenter Integration** button or tab is displayed.

Patching Client for Office

Patching Client for Office using the stand-alone installation wizard

1. Obtain the latest complete Teamcenter patch file *and* the latest complete Teamcenter software distribution image.

   If you are updating 32-bit and 64-bit installations of Client for Office, you must obtain 32-bit and 64-bit Teamcenter images.

2. Copy the complete Teamcenter software distribution image to a location in which you have write permission.

3. Expand the corresponding Teamcenter patch ZIP file (32-bit or 64-bit) into a local directory.

4. Copy the entire contents of the **additional_applications\OfficeClient** directory from the patch location to the **additional_applications\OfficeClient** directory in the Teamcenter software distribution image location, overwriting the existing files in that directory.

   This updates the Teamcenter software distribution image with the latest Client for Office run-time files and installer files.

5. Uninstall the existing Client for Office software from your system.

6. Launch the new Client for Office stand-alone installation wizard (**setup.exe**) from the updated Teamcenter software distribution image to install the latest version of Client for Office.

Patching Client for Office using TEM

1. Obtain the latest complete Teamcenter patch file.

   If you are updating 32-bit and 64-bit installations of Client for Office, you must obtain 32-bit and 64-bit Teamcenter images.

2. Expand the corresponding Teamcenter patch ZIP file (32-bit or 64-bit) into a local directory.

3. Update Teamcenter Environment Manager (TEM) to the latest version:

   a. Download the latest *patch-id*_**install.zip** file to your *TC_ROOT***install** directory.

   b. Open a command prompt.

   c. Change to the *TC_ROOT***install** directory.

   d. Enter the following command to expand the **install.zip** file, overwriting existing files:

      ```
      unzip –o 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 install.zip
        ```

4. Copy the *patch-id*_**install.zip** file to your *TC_ROOT***install** directory.

5. Copy the contents of the **additional_applications\OfficeClient** directory from the patch location to the **additional_applications\OfficeClient** directory in the Teamcenter home directory on your local host, overwriting the existing files in that directory.

   This updates the Teamcenter home directory with the latest Client for Office runtime files and installer files.

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

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

Patching Extensions for Office

This procedure assumes you installed Extensions for Office from the Teamcenter software distribution image as described in *Install Extensions for Office using the stand-alone installation wizard*. The installed location is referenced as *TcExt-dir*.

1. Close all rich client instances on the host.

2. Close all Microsoft Excel instances on the host.

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

4. Expand the Teamcenter patch ZIP file to a local directory. This location is referenced as *patch-dir*.

5. Expand the contents of the *patch-dir***\tc\office2007.zip** file into the *TcExt-dir* location. Overwrite existing files if prompted.

   Note Expand the contents of **office2007.zip** directly into *TcExt-dir*, not into any subdirectory.

6. Double-click the *TcExt-dir***\regasm.bat** program icon.

   This file opens a command prompt and runs several commands.

   Note The **regasm.bat** file is available in the Teamcenter software distribution image when you install Extensions for Office. It is not in the Teamcenter patch ZIP file.

When the **regasm.bat** program completes, Excel Live functionality is available in Extensions for Office.

Chapter

5 *Installing TCCS*

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Chapter

5 Installing TCCS

What is TCCS?

Teamcenter client communication system (TCCS) manages communication and file transfers between Teamcenter clients and servers. TCCS contains the FMS 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 provides the following advantages:

- Improved file transfer performance
- File streaming

  The FCC supports the Lifecycle Visualization file streaming technology, which downloads portions of JT files over the network as they are needed and improves network performance.

Siemens PLM 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 the thin client with 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 through TEM. • To enable TCCS *after* rich client installation, perform the steps in *Enable TCCS using TEM*. • To enable TCCS *during* rich client installation, click **Advanced** in the **File Client Cache (FCC)** panel, and then select the **Use Configurations and Environments** check box in the **Client Communication System Switch** panel. For more information, see *Teamcenter Environment Manager Help*.

Over-the-Web Installer	If you install the rich client or Teamcenter Client for Microsoft Office using the Over-the-Web Installer, TCCS is configured automatically according to the settings in the rich client distribution instance created by your Teamcenter administrator. If you install a Teamcenter client using the Over-the-Web Installer, contact your Teamcenter administrator to obtain the URL to the distribution instance. For information about configuring TCCS in a rich client distribution instance, see the appropriate Teamcenter server installation guide (for Windows or UNIX/Linux).

Note

- The rich client and Client for Office are not supported on Macintosh platforms.
- The FCC requires an FMS server cache (FSC) to connect to. 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.
- For more information about TCCS and File Management System (FMS), see the *System Administration Guide*.

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 Siemens PLM Software certification database:

http://support.industrysoftware.automation.siemens.com/certification/teamcenter.shtml

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 Whether your network uses IPv6 (128-bit) or IPv4 (32-bit) addresses, use host names in URLs wherever possible so the domain name system (DNS) can determine which IP address to use.

- 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 as described in *Installing the rich client*.
2. Launch Teamcenter Environment Manager. In the Windows start menu, choose **Programs→Teamcenter 10.1**, 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.

Value	Description
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** Whether your network uses IPv6 (128-bit) or IPv4 (32-bit) addresses, use host names in URIs wherever possible so the domain name system (DNS) can determine which IP address to use. If you must use IP addresses and your network uses IPv6 addresses, enclose the literal IPv6 address in square brackets, for example: **http://[2001:db8:ffff:1:101:12ff:de13:1322]:9043/tc**
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**.

Value	Description
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 checkbox. *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.
- For more information about Kerberos authentication in Teamcenter and using Security Services in applet-free mode, see the *Security Services Installation/Customization* guide.
- A Kerberos configuration file (**krb5.ini**) must exist on the client host to use Kerberos authentication. The following is an example of a Kerberos configuration file (**krb5.ini**):

```
[libdefaults]
default_realm = TCSS2.NET
default_tkt_enctypes = aes128-cts rc4-hmac des3-cbc-sha1 des-cbc-md5 des-cbc-crc
default_tgs_enctypes = aes128-cts rc4-hmac des3-cbc-sha1 des-cbc-md5 des-cbc-crc

[realms]
TCSS2.NET = {
 kdc = myhost1.TCSS2.net
}
TCSSO.NET = {
 kdc = myhost2.TCSSO.net
}
TCTCSS.NET = {
 kdc = myhost3.TCTCSS.net
}
TCTCSS-CHILD.TCTCSS.NET = {
    kdc = myhost4.net.acmecorp.com
}

[domain_realm]
.TCSS2.net = TCSS2.NET
.TCTCSS.net = TCTCSS.NET
.TCTCSS-child.TCTCSS.net = TCTCSS-CHILD.TCTCSS.NET
.TCSSO.net=TCSSO.NET

[capaths]
TCTCSS.NET = {
      TCSSO.NET = .
}
```

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. This option is available only on Windows hosts.

Value	Description
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**.

For more information about configuring SSL for Teamcenter, see the *Security Services Installation/Customization* guide.

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 using the stand-alone installation wizard

1. On the Teamcenter software distribution image, browse to the **additional_applications\tccs_install** directory.

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

3. In the **License Agreement** dialog box, read the terms of the license agreement. Select the option to accept the terms of the agreement, and then continue.

4. 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 information about required versions of the JRE for Teamcenter, see the Siemens PLM Software certification database:

   http://support.industrysoftware.automation.siemens.com/certification/teamcenter.shtml

5. Proceed to the **Choose Install Folder** dialog box.

6. In the **Choose Install Folder** dialog box, enter the location in which 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 or for the TCCS environment, select the **Advanced Configuration** check box.

9. If you selected the **Advanced Configuration** check box in step 8, enter advanced configuration settings. Otherwise, skip this step and proceed to step 11.

   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.

      For more information about managing TCCS environments, see the *System Administration Guide*.

   b. 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.
Manually configure proxy settings	Specifies that you want to enter proxy settings manually.
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.

Note Whether your network uses IPv6 (128-bit) or IPv4 (32-bit) addresses, use host names in URLs wherever possible so the domain name system (DNS) can determine which IP address to use.

If you must use IP addresses and your network uses IPv6 addresses, enclose the literal IPv6 address in square brackets, for example:

http://[2001:db8:ffff:1:101:12ff:de13:1322]:9043/tc

For more information about managing TCCS environments, see the *System Administration Guide*.

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 Whether your network uses IPv6 (128-bit) or IPv4 (32-bit) addresses, use host names in URLs wherever possible so the domain name system (DNS) can determine which IP address to use.

If you must use IP addresses and your network uses IPv6 addresses, enclose the literal IPv6 address in square brackets, for example:

http://[2001:db8:ffff:1:101:12ff:de13:1322]:9043/tc

For more information about managing TCCS environments, see the *System Administration Guide*.

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 Information** 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.

Value	Description
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**.
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 checkbox. *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. 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.

The following is an example of a Kerberos configuration file (**krb5.ini**):

```
[libdefaults]
default_realm = TCSS2.NET
default_tkt_enctypes = aes128-cts rc4-hmac des3-cbc-sha1 des-cbc-md5 des-cbc-crc
default_tgs_enctypes = aes128-cts rc4-hmac des3-cbc-sha1 des-cbc-md5 des-cbc-crc

[realms]
TCSS2.NET = {
 kdc = myhost1.TCSS2.net
}
TCSSO.NET = {
 kdc = myhost2.TCSSO.net
}
TCTCSS.NET = {
 kdc = myhost3.TCTCSS.net
}
TCTCSS-CHILD.TCTCSS.NET = {
    kdc = myhost4.net.acmecorp.com
}

[domain_realm]
.TCSS2.net = TCSS2.NET
.TCTCSS.net = TCTCSS.NET
.TCTCSS-child.TCTCSS.net = TCTCSS-CHILD.TCTCSS.NET
.TCSSO.net=TCSSO.NET

[capaths]
```

```
TCTCSS.NET = {
      TCSSO.NET = .
}
```

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. 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** checkbox, 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**.

For more information about configuring SSL for Teamcenter, see the *Security Services Installation/Customization* guide.

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.

Appendix

A Troubleshooting

Appendix

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). For more information, see *Java Runtime Environment*.
	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. For more information, see *Java Runtime Environment*.
	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. Perform the steps in *Migrate Teamcenter to a different JRE*.

Problem	Possible cause	Solution
		To avoid this problem in the future, do not remove your previous JRE until after you complete migrating Teamcenter to the new JRE.
Cannot install four-tier rich client over-the-Web	Java Plug-in incorrectly installed	Ensure that the Java Plug-in is installed correctly. For assistance, go to the following Web sites: http://java.sun.com/products/plugin/index.html#download http://java.com/en/download/help/enable_browser.jsp http://java.com/en/download/help/enable_panel.jsp
FCC does not start on Windows	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).
Errors when uploading or downloading files	**FMS_HOME** environment variable does not point to the location of the File Management System (FMS) client executables Incomplete installation of FMS client cache executables Incompatible configurations of FMS	Uninstall the rich client as described in *Uninstall the rich client*. Then reinstall the rich client. **Caution** Always uninstall a rich client using this procedure before installing a new rich client. 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.

Problem	Possible cause	Solution
Teamcenter displays an error message when you attempt to access Teamcenter online help	Teamcenter administrator did not include online help when configuring your rich client	Contact the Teamcenter administrator.
Unable to view or to search Teamcenter online help	Web browser you are using does not meet requirements to view and search Teamcenter online help	Make sure you are using a Siemens PLM Software-supported Web browser. For information about supported Web browsers, see the Siemens PLM Software Certification Database.

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 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.

Appendix

B Enabling multiple client sessions

Overview of multiple client sessions B-1

Installing support services for multiple client sessions B-1

Uninstalling multiple client support services B-2

Appendix

B Enabling multiple client sessions

Overview of multiple client sessions

If you need 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 configure the two-tier rich client for multiple client support (by setting the activation mode to **PER_CLIENT** in Teamcenter Environment Manager), 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 in the two-tier rich client is deprecated and will be removed in a future version of Teamcenter.

Installing support services for multiple client sessions

1. Launch Teamcenter Environment Manager (TEM) to install the two-tier rich client as described in *Install a two-tier rich client*.

   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**.

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.

Uninstalling multiple client support services

- Browse to the **IIOP_SERVER_CONFIG_FOLDER** directory.
- 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.

Appendix

C Uninstalling Teamcenter

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Appendix

C Uninstalling Teamcenter

Uninstall the rich client

The process for uninstalling the rich client depends on how you installed the rich client.

- Over-the-Web Installer

  If you installed a four-tier rich client using the Over-the-Web Installer, uninstall it using the **otwuninstall.bat** script.

- Teamcenter Environment Manager (TEM)

  If you installed the rich client using TEM, uninstall it using the program list in the Windows Control Panel. Find **Teamcenter 10.1** or **Teamcenter 10.1 (x64)** (for the 64-bit rich client) in the program list and uninstall the program.

Uninstall the four-tier rich client using the uninstallation script

If you installed a four-tier rich client using the Over-the-Web Installer, uninstall it using the uninstallation script (**otwuninstall.bat**).

Caution The uninstallation script removes *all* Teamcenter clients installed using the Over-the-Web Installer. For example, if you installed the four-tier rich client *and* Client for Office using the Over-the-Web Installer, both clients are removed.

1. Stop the FMS client cache (FCC) process:
   a. Open a command prompt.
   b. Change to the **4tRAC\tccs\bin** directory in the rich client root installation directory.

      If you do not know the rich client root installation directory, contact your Teamcenter administrator.

   c. Type the following command:

      ```
      fccstat -stop
      ```

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

      Close the command prompt.
2. Browse to the **4tRAC\otw** directory in the rich client root installation directory.
3. Double-click the **otwuninstall.bat** program icon.

4. After the uninstallation script is finished, remove the rich client root installation directory.

5. Remove the Teamcenter rich client icon from your desktop.

6. Remove the **FCCCache** directory from your workstation.

   If you do not know the location of the **FCCCache** directory, contact your Teamcenter administrator.

7. Delete the **FMS_HOME** environment variable on your client host.

Uninstall Microsoft Office interfaces

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.
Uninstallation script	If you installed Microsoft Office interfaces using the Over-the-Web Installer, uninstall them using the uninstallation script (**otwuninstall.bat**).

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 10.1→Environment Manager

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

3. 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**.

     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 Microsoft Office interfaces using the uninstallation script

If you installed Microsoft Office interfaces using the Over-the-Web Installer, uninstall them using the uninstallation script (**otwuninstall.bat**). This script is in the **otw** directory under the Teamcenter home directory on your system.

For more information, see *Uninstall the four-tier rich client using the uninstallation script*.

Caution The **otwuninstall.bat** uninstallation script removes *all* Teamcenter clients installed using the Over-the-Web Installer. For example, if you installed the four-tier rich client *and* Client for Office using the Over-the-Web Installer, both clients are removed.

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\Teamcenter10\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.

Uninstall Engineering Process Management rich client

If your workstation has an installation of an Engineering Process Management rich client, uninstall it before installing the Teamcenter 10.1 rich client.

1. Stop the FMS client cache (FCC) process:
   a. Open a Windows command prompt window.
   b. Change to the following directory in the rich client root installation directory:

      Portal\fms\bin

If you do not know the rich client root installation folder, contact your Teamcenter administrator.

c. Type the following command:

```
fccstat -stop
```

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

2. Remove the **FCCCache** folder from your workstation.

   If you do not know the location of the **FCCCache** folder, contact your Teamcenter administrator.

3. If your rich client includes Engineering Process Management Lifecycle Visualization, remove the **UGS Engineering Process Management Lifecycle Visualization** application using the **Add/Remove Programs** dialog box in the Windows Control Panel.

4. If your rich client includes Engineering Process Management Lifecycle Visualization, use the **Add/Remove Programs** dialog box in the Windows Control Panel to remove all Lifecycle Visualization applications.

5. Delete the **FMS_HOME** environment variable definition on your workstation using the Windows Control Panel.

6. Restart the operating system to deactivate the **FMS_HOME** variable.

7. Remove the rich client root installation folder.

8. Remove the Teamcenter rich client icon from your desktop.

Appendix

D Glossary

Appendix

D Glossary

A

assigned FSC
FMS server cache assigned as the volume or cache server for an FMS client cache. Each FMS client cache requires an assigned FSC to provide it with access to files. An assigned FSC is typically the FSC nearest to the client host. In small deployments, an assigned FSC can also serve as the parent FSC.

C

certified platform
Platform the base product is certified to operate on. Compare with *supported platform*.

ClearCase Integration
Teamcenter integration to the IBM Rational ClearCase software configuration management tool.

E

environment variables script
Teamcenter script (**tc_profilevars**) that sets variables for the Teamcenter environment. This script sets all Teamcenter environment variables except **TC_ROOT** and **TC_DATA**.

F

facility
Physical location in an enterprise (for example, manufacturing plant or design center). One facility can comprise multiple sites. Compare with *site*.

FCC
See *FMS client cache (FCC)*.

FCC configuration file
File that configures an individual FMS client cache (**fcc.xml**). The FCC configuration file defines such values as the parent FMS server cache location and the location and size of the client caches. Values defined in the FCC configuration file can override default values defined in the FSC configuration file.

File Management System (FMS)
System that manages uploading and downloading file data between clients and volumes in both two-tier and four-tier architecture deployments.

- FMS provides volume servers for file management, a shared server-level performance cache for shared data access between multiple users, a client-based private user cache for rich clients, and a transient datastore mechanism for transporting reports, PLM XML, and other nonvolume data between the enterprise and client tiers.

- FMS file caching enables placing the data close to the user, while maintaining a central file volume and database store.

FMS client cache (FCC)
FMS process that runs on a client host, uploading files to an FMS server cache process, requesting files from an FMS server cache process, and caching files on the client host. The FCC process manages two caches of whole files: a write cache containing files uploaded to a Teamcenter volume and a read cache containing files downloaded from a Teamcenter volume. It also manages one segment file cache for Teamcenter lifecycle visualization. Each Teamcenter rich client host requires a local FMS client cache.

FMS master configuration file
File that configures FMS (**fmsmaster.xml**). The FMS master configuration file describes the FMS network and defines groups of server caches. It can also define default values for server caches and client caches, such as maximum sizes. Values defined in the server cache configuration file and in the client cache configuration file can override the default values defined in the master configuration file.

FMS master host
Host that contains the FMS master configuration file (**fmsmaster.xml**). This file is optionally mounted at each FSC server.

FMS server cache (FSC)
FMS process that runs on a server host and performs as a volume server (when running on a host where a volume is located or directly mounted) or a cache server (when running on a host where a volume is not located or directly mounted) and a configuration server. As a volume or cache server, the FSC checks all file access requests for a ticket that Teamcenter generates to authorize file access. As a cache server, it manages two segment file caches, one for downloading files and one for uploading files. As a configuration server, it provides FMS configuration information to file client caches and other FSCs. As a transient server, it delivers PLM XML and other transient files to clients. A minimum of one FSC must be deployed in any Teamcenter installation. Multiple FSCs can be deployed, with each FSC performing one designated purpose as either a volume, a cache, or a configuration server.

four-tier architecture
Teamcenter architecture that includes four tiers: resource tier, client tier, Web tier, and enterprise tier. Contrast with *two-tier architecture*.

four-tier deployment
Deployment of the Teamcenter four-tier architecture. The Web tier, enterprise tier, resource tier, and client tier can each be hosted on the same or separate computers.

FSC
See *FMS server cache (FSC)*.

FSC configuration file
File that configures an individual FMS server cache (**fsc.xml**). The FSC configuration file defines such values as the address of the master FSC, the maximum sizes of the segment file caches, and the upload time-out value. It can also define default values for FCCs and other FSCs.

FSC group
Group of server caches defined in the FMS master configuration file.

L

Lifecycle Visualization
Visualization components available in the rich client, the thin client, and as a stand-alone application. A scalable solution for the viewing and analysis of 2D and 3D product data, Lifecycle Visualization is available in a number of configurations to meet the requirements of different organizations.

M

master FSC
FMS server cache that reads the master configuration file directly from the FMS master host. An FSC is configured either to read the master configuration file directly from the master host or to download it from another FSC with access to it.

Multi-Site Collaboration
Teamcenter capability that allows the exchange of data objects among several Teamcenter databases. Transfer of objects among databases is controlled by daemon processes running on designated servers. Objects are replicated by exporting them from their original database and importing them into the requesting database. Configuration of Multi-Site Collaboration is optional.

Multi-Site Collaboration network
Network of independent Teamcenter sites that are within the same enterprise and share data using Multi-Site Collaboration.

My Teamcenter
In the Teamcenter rich client and thin client, application that is the main access point for managing product information. My Teamcenter provides the functionality for creating objects in the Teamcenter database, querying the database for objects, checking in and checking out objects, and managing tasks. Users can also open objects, automatically launching the related application.

Each user has a personal My Teamcenter window that displays product information as graphical objects. Although users share product information across the enterprise, they organize this information individually in personal workspaces.

N

NX Integration
Integration between Teamcenter and NX. NX Integration users have full access to the Teamcenter user interface from NX, and they can also access NX from the Teamcenter user interface.

Teamcenter Integration for NX and NX Integration have the identical user interface in NX. The difference between the two products is the level of Teamcenter

functionality available. Teamcenter Integration for NX excludes certain Teamcenter functionality, such as workflow and product structure editing.

O

Oracle home
Directory in which Oracle software is installed on the Oracle server node.

Oracle server
Single installation of Oracle able to service queries from several Teamcenter workstations. The **ORACLE_SERVER** environment variable defines this Oracle service node. For large-scale installations, the Oracle server is typically a dedicated high performance workstation that is optimized specifically for running Oracle software.

Oracle system identifier (SID)
Alphanumeric word used to identify a collection of processes and associated memory structures as belonging to a particular Oracle database instance. The **ORACLE_SID** environment variable defines the Teamcenter-Oracle system identifier.

Over-the-Web Installer
Installation program that downloads the rich client software from a distribution server instance to the user's workstation over the Web.

P

preference
Configuration variable stored in a Teamcenter database and read when a Teamcenter session is initiated. Preferences allow administrators and users to configure many aspects of a session, such as user logon names and the columns displayed by default in a properties table.

R

remote workflow
Teamcenter component that enables users to create links between Teamcenter objects and objects in other Teamcenter products, such as Teamcenter portfolio, program and project management. Users can then launch the linked Teamcenter product from within either the rich client or the thin client.

rich client
Java-based user interface to Teamcenter installed on user workstations. The rich client accesses Teamcenter databases using a remote or local server. Compare to *thin client*.

S

site
Individual installation of Teamcenter comprising a single Teamcenter database, all users accessing that database, and additional resources such as hardware, networking capabilities, and third-party software applications (tools) required to implement Teamcenter at that site.

site ID
Unique identifier of a Teamcenter site. The site ID is used to generate internal identifiers for Teamcenter objects that must be unique throughout an enterprise. Once established, site IDs should not be modified.

site name
Unique name of a Teamcenter site stored in the database as a user-defined character string.

site preference
Teamcenter preference that applies to the entire site.

supported platform
Platform configuration supported by GTAC.

system administrator
Teamcenter user who is a member of the system administration group.

T

Teamcenter application root directory
Directory location of the Teamcenter shared binary executables. The **TC_ROOT** environment variable defines this location. Generally, the contents of this directory change only with a new version of Teamcenter.

Teamcenter data directory
Directory location of the Teamcenter shared data subdirectories and files. The **TC_DATA** environment variable defines this location. Each data directory is associated with a single database instance.

Teamcenter Engineering Visualization
Optional Teamcenter rich client component that provides enterprise-wide product visualization capabilities and is embedded in the rich client interface. Four Teamcenter Engineering Visualization products provide different visualization capabilities. Teamcenter Engineering Visualization Base provides basic 2D and 3D viewing. Teamcenter Engineering Visualization Standard, Teamcenter Engineering Visualization Base, and Teamcenter Engineering Professional provide increasing functionality.

Teamcenter Environment Manager (TEM)
Tool with a wizard-style interface that installs Teamcenter servers and two-tier and four-tier rich clients. TEM also performs maintenance operations, such as upgrading servers, applying maintenance packs, and installing patches. Teamcenter installers launch TEM using the **tem.bat** command (on Windows systems) or the **tem.sh** command (on UNIX or Linux systems).

Teamcenter file structure
File structure of an installed Teamcenter node; it separates homogeneously shared binary executables from heterogeneously shared data.

Teamcenter Integration for NX
NX-based entry-level set of Teamcenter data management functions, such as vaulting, checking in, checking out, revision management, attribute synchronization, and searching CAD data. Teamcenter Integration for NX manages NX files and

their data without exposing the user to full Teamcenter functionality. Teamcenter Integration for NX users have only limited access to the Teamcenter user interface.

Teamcenter Integration for NX and NX Integration have the identical user interface in NX. The difference between the two products is the level of Teamcenter functionality available. Teamcenter Integration for NX excludes certain Teamcenter functionality, such as workflow and product structure editing.

Teamcenter manufacturing process management
Teamcenter manufacturing process design and management system. Teamcenter manufacturing process management comprises several user applications, for example, Plant Designer, Manufacturing Process Planner, Part Planner, Report Generator, and Resource Manager.

TEM
See *Teamcenter Environment Manager (TEM)*.

thin client
Teamcenter user interface that provides a streamlined browser-based view of product information stored in a Teamcenter database. The thin client is configured in the Web tier, which creates and serves its Web pages to the client. Compare to *rich client*.

transient volume
Operating system directory controlled by Teamcenter and used to store temporary data for transport of reports, PLM XML, and other nonvolume data between the Web tier and client tier in a deployment of the Teamcenter four-tier architecture.

two-tier architecture
Teamcenter architecture that includes a resource tier and a client tier. The resource tier comprises the database server and database. The client tier comprises the Teamcenter rich client, third-party applications that integrate with the rich client, and a local server. This architecture supports only the Teamcenter rich client. Contrast with *four-tier architecture*.

two-tier deployment
Deployment of the Teamcenter two-tier architecture. In a typical deployment of the two-tier architecture, the rich client and its local server are installed on a user's workstation as are third-party applications that integrate with the rich client. The database server and the Teamcenter corporate server are installed on one or more separate computers.

U

user preference
Teamcenter preference applying to a specific user.

V

visualization
Ability to display a realistic, real time, graphical visualization of geometric data.

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