



# TEAMCENTER

## Teamcenter Rich Client Installation on Linux

Teamcenter 2412

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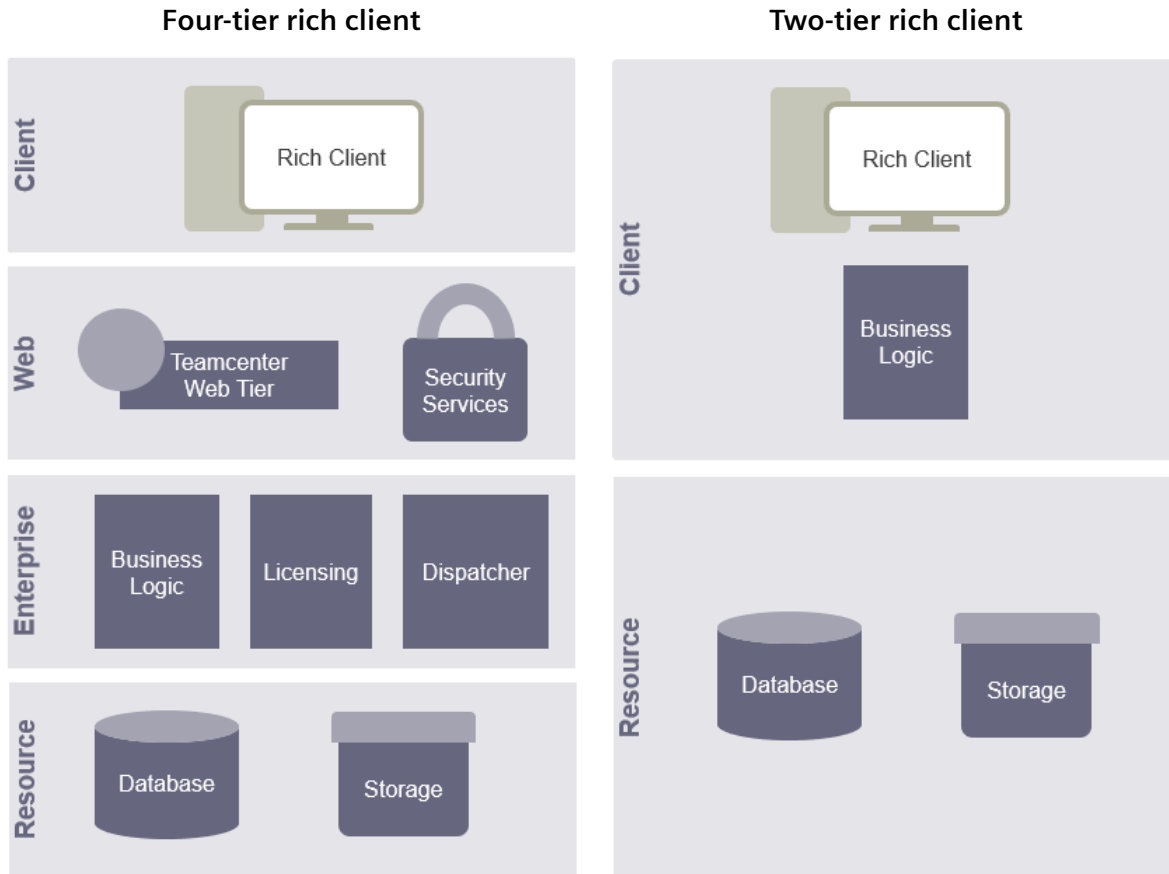
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# 1. Installing the Teamcenter rich client

The Teamcenter rich client is a Java-based desktop client that can be installed in two different logical architectures: four-tier and two-tier.<sup>1</sup> Both architectures provide similar Teamcenter functionality, distributed in different ways, with different advantages:



Suited for high-latency wide-area network (WAN) deployments	Suited for local area network (LAN) deployments.
Highly scalable deployment supports clients outside the local LAN.	Requires low latency between client and resource tiers.
Supports distribution of Teamcenter components on multiple hosts.	Simplified distribution on two tiers, client contains its own business logic server ( <b>TcServer</b> ).
Requires planning for distribution of tier components.	Supports simple, rapid deployment on individual hosts.

<sup>1</sup> These simplified illustrations do not show all components in a Teamcenter environment, but representative groups of components. The Teamcenter four-tier architecture is described in The Teamcenter environment.

Clients communicate with the web tier using HTTP or Teamcenter client communication system (TCCS).	Does not require a web tier. Communicates directly with the resource tier using Teamcenter client communication system (TCCS).
Clients connect to the same web tier.	Clients connect to the same resource tier.

The two-tier and four-tier rich clients are installable using Deployment Center or Teamcenter Environment Manager (TEM). TEM provides an additional option, **Rich Client (Two-Tier and Four-Tier)**, a flexible TCCS-based rich client that can be configured for either two- or four-tier operation.


The rich client is an alternative client to Active Workspace, a web-based Teamcenter client with enhanced search and visualization capabilities.

If you have installed a Teamcenter server and are ready to add the rich client to your environment, decide which rich client deployment type suits your business needs, and get started.

## Installing TCCS for other clients

TCCS is installed automatically with Teamcenter rich clients, but TCCS provides client communication and file transfer capabilities for other Siemens Digital Industries Software clients as well, such as NX and Teamcenter Client for Microsoft Office. You can install *standalone TCCS* for these clients.

## Where do I go from here?

 Administrator	
Preparing a client machine	See <a href="#">System requirements</a>
Learning more about rich client deployment types	See <a href="#">Choose a rich client deployment type</a>
Installing a rich client using Deployment Center	See <a href="#">Installing the rich client using Deployment Center</a>
Installing a rich client using TEM	See <a href="#">Installing the rich client using TEM</a>
Installing standalone TCCS	See <a href="#">Installing TCCS</a>
Install the Security Services Session Agent	See <a href="#">Install the Session Agent using Deployment Center</a>

## 2. Where to start

### Get documentation

Teamcenter documentation is available from two sources:

- **Internet: Support Center**

This is Siemens Digital Industries Software's comprehensive support portal, which provides documentation for all Siemens software products and versions.

You require a Webkey account to access Support Center. However, you can avoid this requirement by installing the *Siemens Documentation Proxy*, which provides secure documentation access using a personalized API key, with no need to log on. Teamcenter clients can be configured to access help through the Documentation Proxy.

- **Intranet: Siemens Documentation Server**

This is a locally installed server that can host documentation for all your Siemens Digital Industries Software products. No Internet access is required. You can configure the server for single-machine use or network-wide access with no Webkey or API key required.

Teamcenter clients can be configured to access the help on the Siemens Documentation Server.

For an orientation to Support Center, see Siemens Software [Support Center videos](#) on YouTube.

### Install the Documentation Proxy or the Documentation Server

Log on to Support Center and open the [Siemens Documentation Server Downloads](#) page:

**Products**→**Siemens Documentation Server**→**Downloads**

Choose how you want to access documentation, and then install the Documentation Proxy or the Documentation Server.

Installing Siemens Documentation Proxy	Installing Siemens Documentation Server
<ol style="list-style-type: none"><li>1. Under <b>Select a Version</b>, choose <b>Documentation Proxy 3</b>, and then click the tile for the latest <b>Documentation Proxy 3.x</b> release.</li><li>2. Download the Documentation Proxy installer:  <b>DocumentationProxy.version.aol</b></li></ol>	<ol style="list-style-type: none"><li>1. Under <b>Select a Version</b>, choose <b>Siemens Documentation Server 3</b>, and then click the tile for the latest <b>Siemens Documentation Server 3.x</b> release.</li></ol>

Installing Siemens Documentation Proxy	Installing Siemens Documentation Server
<p>3. Install the Documentation Proxy according to the <i>Documentation Proxy Installation Guide for Linux</i>, available under <b>Release Documentation</b> on the software download page.</p> <p>Installing the Documentation Proxy requires generating an API key at the <b>Siemens Support Center account site</b>. This may require you to obtain your Siemens site ID from your Teamcenter administrator.</p>	<p>2. Download the Documentation Server installer:</p> <p><b>HelpServer.version.aol</b></p> <p>3. Install the Documentation Proxy according to the <i>Siemens Documentation Server Installation Guide for Linux</i>, available under <b>Release Documentation</b> on the software download page.</p>

Note the machine and port on which you configured the Documentation Proxy or Documentation Server. These are required to configure help access from Teamcenter clients.

## Install the Teamcenter 2412 documentation kit

If you installed the Siemens Documentation Proxy, skip this section.

Teamcenter documentation is delivered in *documentation kits*. Each kit contains documentation content and an installation wizard that automatically installs documentation onto your Documentation Server.

1. Log on to Support Center and open the **Teamcenter Downloads** page:

**Products**→**Teamcenter**→**Downloads**

2. Under **Select a Version**, choose **Teamcenter 2412**, and then click the **Teamcenter 2412** tile.
3. Download the Teamcenter 2412 documentation kit:

**docs-teamcenter-2412-locale.aol**

4. Install the Teamcenter 2412 documentation onto the Documentation Server:

Enter the following commands:

```
sudo chmod 777 docs-teamcenter-2412-locale.aol
sudo teamcenter-2412-locale.aol
```

These commands require administrative privileges.

For more information about installing documentation kits and managing the Documentation Server, see the *Siemens Documentation Server Installation Guide for Linux*.

## Verify documentation access

Open the Teamcenter 2412 documentation from your preferred source:

- Support Center (Webkey logon):

**`https://docs.sw.siemens.com/en-US/doc/282219420/PL20240523460057788.tc_doc_home`**

- Support Center (via Documentation Proxy):

**`http://doc-proxy-host:doc-proxy-port/en-US/doc/282219420/PL20240523460057788.tc_doc_home`**

- Siemens Documentation Server:

**`http://doc-server-host:doc-server-port/en-US/doc/282219420/PL20240523460057788.tc_doc_home`**

## Enable help access in the rich client

### Configure help in the rich client

Configure the **Help** button in the rich client to open Teamcenter help from your preferred source.

#### During installation:

When prompted in the installation tools (Deployment Center or TEM), enter your preferred documentation URL in the **Documentation server URL** box.

#### After installation:

Configure help access in the rich client.

## Get software

1. Log on to Support Center and open the **Teamcenter Downloads** page:

**Products → Teamcenter → Downloads**

2. Under **Select a Version**, choose **Teamcenter 2412**, and then click the **Teamcenter 2412** tile.
3. Download the Teamcenter 2412 software kit for Linux (**Tc2412\_Inx64.zip**).
4. Expand the software kit to a directory that is accessible to the machines on which you install Teamcenter software.

If an update (patch) to Teamcenter 2412 is available, for example, Teamcenter 2412.0001, you can additionally download the update, and apply it during the Teamcenter installation.

### Can I place the software in a remote location?

#### Deployment Center

Your primary repository in Deployment Center must be a local path. However, you can specify additional repository locations, and these may be UNC paths or local file system paths. Mapped drives are not supported for any software repositories in Deployment Center. For more information, see *Deployment Center — Usage*.

#### Teamcenter Environment Manager (TEM)

If you mount software kits on a remote NFS server, you must launch Teamcenter Environment Manager on the local server node.

## Get started

### System requirements

#### Verify system software requirements

1. Log on to Support Center and open the [Support White Papers Certifications](#) page:
  - a. Open **Products**→**Teamcenter**→**Downloads**.
  - b. Under **Select a Version**, choose **Support White Papers**→**Support White Papers Certifications**, and then click the **Support White Papers Certifications** tile.
2. Download the following support documents:

#### **Software Certifications Matrix (Tc2412PlatformMatrix-date.xlsx)**

Contains information about system software certified for Teamcenter, such as operating systems and Java runtime environments (JREs).

#### **Teamcenter Interoperability Matrix (Teamcenter Interoperability Matrix date.xlsx).**

Lists versions of Siemens Digital Industries Software products that are compatible with Teamcenter 2412. It also lists supported Teamcenter paths.

The Teamcenter Interoperability Matrix also correlates versions of Deployment Center with compatible versions of Teamcenter, and shows supported paths for upgrading Deployment Center. For information about upgrading Deployment Center, see *Deployment Center — Usage*.

Make sure you install versions of the required software that are listed in the Software Certifications Matrix and the Teamcenter Interoperability Matrix.

## Platforms

Determine from the following table which Teamcenter 2412 components are supported on your operating system. Check marks (✓) indicate components supported on the given operating system.

Operating system	Corporate server	Web tier	Active Workspace	Rich Client	Business Modeler IDE client	TCCS
Microsoft Windows (desktop platforms)			✓	✓	✓	✓
Microsoft Windows Server	✓	✓			✓	
SUSE Linux	✓	✓	✓	✓	✓	✓
Red Hat Linux	✓	✓	✓	✓	✓	✓

- Linux hosts must have graphics capabilities to run Teamcenter installation tools.

For operating system requirements, see the Hardware and Software Certifications knowledge base article on Support Center.

- Linux hosts must have the **nslookup** utility available to ensure operation of the license server.
- Make sure Linux host names do not exceed 31 characters in length. Host names longer than 31 characters cause Teamcenter corporate server installation to fail during saving of the POM schema file in the *TC\_DATA* directory.

Teamcenter installation tools do not require fully qualified domain names for host names. If your fully qualified domain name exceeds 31 characters, use the server short host name instead.

For more information, see the solutions document 002-7004480 on Support Center.

- Teamcenter Environment Manager (TEM) and Web Application Manager require the ISO8859-1 character set. Make sure this character set is available on your host.

## Database

Teamcenter requires a relational database management system (RDBMS) for storing Teamcenter data. Before you install Teamcenter, you must install an Oracle database server or a Microsoft SQL Server database server.

If your database server is not a supported version, upgrade your database server to a supported version before you install Teamcenter.

Choose a database management system that suits the platforms of your Teamcenter servers and clients, and make sure your Teamcenter corporate server host has access to the database server.

If you use Oracle, set system parameters to recommended values to ensure adequate database performance.

### Java Runtime Environment

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

Note:

If you use open-source Java, you must use a JDK, as some open-source JREs do not contain all required libraries.

Before you launch TEM to install Teamcenter:

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

For certified Java versions, see the Software Certifications Matrix on Support Center.

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

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

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

For example:

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

### Web tier support

If you use the Teamcenter Java EE web tier, install the following software:

#### Java Runtime Environment (JRE)

Install a supported JRE on the host where you build Teamcenter web applications.

#### Java EE application server

Install a supported Java EE application server on the host where you deploy Teamcenter web applications.

Some web application servers require special configuration for use with Teamcenter.

## Web browser

A web browser is required if you use the following:

- Teamcenter online help
- Active Workspace
- Deployment Center

For these products, Teamcenter supports the following web browsers:

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

For supported browser versions, see the Software Certifications Matrix on the [Support White Papers Certifications](#) page on Support Center.

## Teamcenter client components and integrations

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

Some software products require separate licenses from Siemens Digital Industries Software. Purchase the required licenses and install them into the Siemens Common Licensing Server as described in the Teamcenter installation guides for Windows and Linux.

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

- NX integrations

Installing NX is not a prerequisite for installing or using Teamcenter, but if you intend to integrate NX with Teamcenter, install the following software before you install Teamcenter:

- NX

Install NX locally on every workstation according to the installation guide distributed with NX. This is required for NX integrations to function in a rich client environment.

- Teamcenter Integration for NX or NX Integration

Teamcenter Integration for NX and NX Integration provide the same NX user interface and are both installed with NX, but neither can be used until Teamcenter is configured.

When you install Teamcenter Integration for NX, allow the installation to modify system files so that it can create an **installed\_programs.dat** file under the **ugs** directory. You can use this **installed\_programs.dat** file as a sample on other Linux workstations of the same type to access NX and Teamcenter Integration for NX. NX can be installed on a mount point.

If you include the **NX Foundation** feature on your Corporate Server, you must install this feature on every machine where Teamcenter Foundation is installed in the environment. Also, you must install the **NX Rich Client Integration** feature on all two-tier rich clients in your environment.

When you upgrade to a new version of NX, uninstall the **NX Rich Client Integration** feature, then reinstall it, specifying the path to the new NX installation in the **NX Install Location** box in the Teamcenter installation tool (TEM or Deployment Center).

For more information about using Teamcenter with NX, see the installation guides distributed with NX.

- Lifecycle Visualization

Download the Lifecycle Visualization 2412 software kit from Support Center.

- If you use the stand-alone Lifecycle Visualization viewer:

1. Install Lifecycle Visualization using the installation wizard (**setup.exe**) in the software kit.
2. When you install the Teamcenter rich client using TEM or Deployment Center, select the **Teamcenter Visualization (Stand-alone) for Rich Client** application.

- If you use the embedded Lifecycle Visualization viewer:

1. When you install the Teamcenter rich client using Deployment Center or TEM, select the **Teamcenter Visualization (Embedded) for Rich Client** application.
2. In the **Teamcenter Visualization Install Image** box, enter the path to the Lifecycle Visualization software kit.

The installation tool (Deployment Center or TEM) installs the embedded Lifecycle Visualization viewer.

- SCM Integration - ClearCase

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

## About File Management System (FMS) and TCCS

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 install an FMS client cache (FCC) on client hosts. The FCC is part of Teamcenter client communication system (TCCS). TCCS installation 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.

## About Lifecycle Visualization

For enterprise-wide product visualization capability, you can install Teamcenter lifecycle visualization and add a Lifecycle Visualization viewer to your Teamcenter configuration.

Siemens Digital Industries Software provides two Lifecycle Visualization viewers for use with Teamcenter:

- Lifecycle Visualization embedded viewer

The Lifecycle Visualization embedded viewer is embedded in the rich client user interface. The embedded viewer provides full 2D visualization capabilities and 3D viewing and is available to all Teamcenter users.

The embedded viewer is installed on user workstations as part of a rich client configuration. The license level is configured during installation.

- Lifecycle Visualization standalone application viewer

The Lifecycle Visualization standalone application viewer is launched from the Teamcenter rich client user interface. Users can also run it as a stand-alone application. The suite includes the embedded viewer and Teamcenter lifecycle visualization mockup.

The standalone application viewer is individually installed on each client workstation using the Teamcenter lifecycle visualization software kits.

Lifecycle Visualization uses Teamcenter client communication system (TCCS).

If your Teamcenter configuration includes a rich client and a Lifecycle Visualization viewer, Lifecycle Visualization uses Teamcenter volumes and FMS, including the FMS server cache (FSC) and FMS client cache (FCC). (FCC is a component of TCCS.)

When installed as a stand-alone application, Lifecycle Visualization can use Teamcenter volumes and FMS if you install TCCS on the client host.

If you use NX or Teamcenter lifecycle visualization, you can install the FCC and use it to upload files to and download files from the Teamcenter volume.

For information about installing Lifecycle Visualization, see the *Teamcenter lifecycle visualization Installation Guide* in the Lifecycle Visualization online help library.

Lifecycle Visualization features provided with Teamcenter are installed through TEM and Deployment Center. You can also patch Lifecycle Visualization using TEM.

You can configure both Lifecycle Visualization viewers for use with a rich client. If you configure both products, you must install the embedded viewer in a separate directory from the standalone application viewer. The embedded viewer and the standalone application viewer require separate license files.

For more information about software requirements for Lifecycle Visualization, see the Hardware and Software Certifications knowledge base article on Support Center.

# 3. Sharing client components across environments

Using Deployment Center, you can optionally create an environment that contains client components that can be shared across multiple Teamcenter environments. By setting the **Infrastructure Type** option in Deployment Center to **Global**, you create an environment whose components can be imported into environments whose **Infrastructure Type** is set to **Local**.

The following client components are supported for sharing from a Global infrastructure environment:

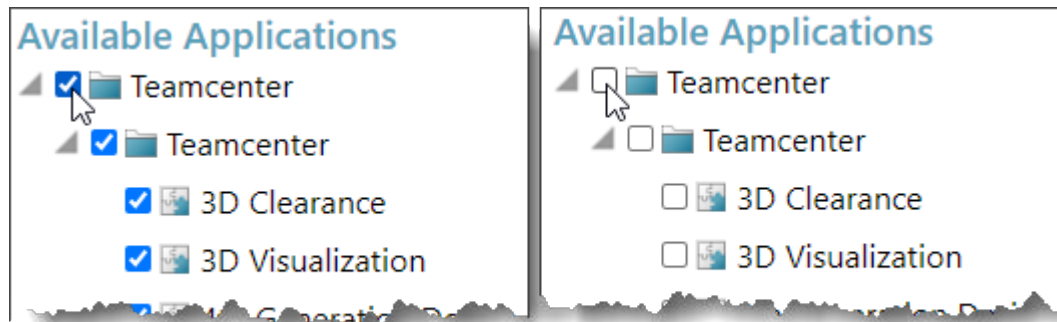
- **Rich client four-tier**
- **Teamcenter client communication system**
- **Teamcenter Security Service Session Agent**

To create a Global infrastructure environment with sharable client components, perform the following steps:

1. In Deployment Center, open the **Environments** page.
2. Click **Add Environment** ⊕.

The new environment appears highlighted in the list.

3. In the **Software** tab, select the Teamcenter 2412 software, and then click **Update Selected Software**.
4. In the **Options** tab, under **Infrastructure Type**, select **Global**, and then click **Save Environment Options**.
5. In the **Applications** tab, clear the **Selected Applications** list:
  - a. Click **Add or Remove Selected Applications** ✎.
  - b. In the **Available Applications** panel, select and then deselect the top-level **Teamcenter** application group.



- c. Click **Update Selected Applications**.

The **Selected Applications** list is cleared.

6. In the **Components** tab, click **Add component to your environment** ⊕.

The **Available Components** list shows components that are sharable from a **Global** infrastructure environment across multiple **Local** infrastructure environments.

7. Select the component or components you want to include in your environment, and then click **Update Selected Components**.
8. In the **Selected Components** list, select a component to view its parameters.
9. Enter required parameters for the component or components you selected.

When you finish configuring a component, click **Save Component Settings**.

**Table 3-1. Rich client four-tier**

Parameter	Description
<b>Enable Mass Client Deploy?</b>	Specifies you want to generate a deployment script that can be run on multiple client machines. If you select this check box, enter an identifier for the mass client instance in the <b>Instance Name</b> box.
<b>Machine Name</b>	Enter the name of the machine on which you want to install TCCS. This box is displayed if <b>Enable Mass Client Deploy?</b> is <i>not</i> selected.
<b>OS</b>	Specifies the operating system of the machine on which you install TCCS.
<b>Teamcenter Installation Path</b>	Specifies the path in which to install TCCS on the target machine. Accept the default path shown, or type a different path.
<b>Applications</b>	Selection list of rich client-compatible applications for which you can optionally add support in your rich client configuration.

**Table 3-2. Teamcenter client communication system**

Parameter	Description
<b>Enable Mass Client Deploy?</b>	Specifies you want to generate a deployment script that can be run on multiple client machines. If you select this check box, enter an identifier for the mass client instance in the <b>Instance Name</b> box.
<b>Machine Name</b>	Enter the name of the machine on which you want to install TCCS. This box is displayed if <b>Enable Mass Client Deploy?</b> is <i>not</i> selected.
<b>OS</b>	Specifies the operating system of the machine on which you install TCCS.
<b>Teamcenter Installation Path</b>	Specifies the path in which to install TCCS on the target machine. Accept the default path shown, or type a different path.

**Table 3-3. Teamcenter Security Service Session Agent**

Parameter	Description
<b>Enable Mass Client Deploy?</b>	Specifies you want to generate a deployment script that can be run on multiple client machines. If you select this check box, enter an identifier for the mass client instance in the <b>Instance Name</b> box.
<b>Machine Name</b>	Enter the name of the machine on which you want to install TCCS. This box is displayed if <b>Enable Mass Client Deploy?</b> is <i>not</i> selected.
<b>OS</b>	Specifies the operating system of the machine on which you install TCCS.
<b>Teamcenter Installation Path</b>	Specifies the path in which to install TCCS on the target machine. Accept the default path shown, or type a different path.
<b>Install XML-RPC libraries</b>	If you have Teamcenter client applications released with Teamcenter 13.2 or earlier that you are not yet updating, select the <b>Install XML-RPC libraries</b> <input checked="" type="checkbox"/> check box. This option ensures Security Services compatibility with earlier Teamcenter versions.

When you have fully configured all components in your environment, the **Deploy** tab is enabled.

- When all components are fully configured, go to the **Deploy** tab. Click **Generate Install Scripts** to generate deployment scripts to update affected machines. When script generation is complete, note any special instructions in the **Deploy Instructions** panel.

Components in the **Global** infrastructure environment can be imported into **Local** infrastructure environments. For information about importing sharable components, see the following topics:

- *Install the four-tier rich client*
- *Install TCCS using Deployment Center*
- *Install TCCS using Deployment Center*



# 4. Installing the rich client

## Choose a rich client deployment type

Teamcenter provides the following rich client components:

- **Teamcenter Rich Client Four-Tier**

Installs a four-tier rich client that connects to the Teamcenter web tier using HTTP protocol or Teamcenter client communication system (TCCS). This client is installable through Deployment Center or TEM.

- **Teamcenter Rich Client Two-Tier**

Installs a two-tier rich client that communicates with the Teamcenter corporate server using TCCS. It supports most Teamcenter features and does not require a web tier. This client is installable through Deployment Center or TEM.

- **Teamcenter Rich Client (Two-Tier and Four-Tier)**

Installs a rich client that supports multiple two-tier and four-tier connections using TCCS.

If configured for two-tier operation, this rich client connects to a Teamcenter corporate server. If configured for four-tier operation, it connects to a Teamcenter web tier. This client is installable through TEM only.

- **Teamcenter Rich Client (Lite Edition)**

Installs a rich client with limited applications and menu commands. This client is installable through Deployment Center or TEM.

Note:

IOP protocol is no longer supported in Teamcenter. The Teamcenter two-tier rich client uses TCCS (Teamcenter client communication system) instead of IOP (Internet Inter-ORB Protocol) to communicate with the corporate server. Existing IOP-based two-tier rich clients are automatically converted to TCCS-based during upgrade.

Before you install the rich client:

- Make sure your client host meets the [system hardware and software requirements](#).
- Obtain your Teamcenter user name and password from the Teamcenter administrator for logging on to the rich client.

## Installing the rich client using Deployment Center

### Install the four-tier rich client

Install a four-tier rich client that connects to the Teamcenter web tier using HTTP protocol or Teamcenter client communication system (TCCS).

Note:

Make sure your Deployment Center is upgraded to Deployment Center 2412. Your version of Deployment Center must be equal to or later than the version of Teamcenter you install.

You can add a rich client when you create a new Teamcenter environment or you can add a rich client to an existing environment. This procedure describes how to add a rich client to an existing environment.

1. Log on to Deployment Center, and then select an existing environment to which you want to add the four-tier rich client.
2. In the **Components** tab, click **Add component to your environment** ⊕ to display the **Available Components** panel.
3. In **Available Components**, select the **Rich client four-tier** component, and then click **Update Selected Components** to add it to the **Selected Components** list.
4. In the **Selected Components** list, select **Rich client four-tier** and then enter parameters for this component:
  - a. If you configured a four-tier rich client in a **Global** infrastructure environment, you can import that client into your **Local** infrastructure environment.

If you have no **Global** infrastructure environments, skip this step and proceed to step **b**.

If you want to import a four-tier rich client configuration, perform the following steps:

- A. Select the **Do you want to import 'Rich client four-tier' from other environments?**  check box.

Deployment Center displays a table of environments that contain a four-tier rich client that can be shared to your environment.

- B. Select the environment from the list that contains the four-tier rich client you want to import. Then, click **Save Component Settings**.

The **Rich client four-tier** component is fully configured (**100%** complete).

- C. Proceed to step **5**.

b. Enter parameter values for the four-tier rich client according to your environment type:


- **Single box**

All required parameters are supplied by existing components in your environment.

- **Distributed**

Enter the required parameters below.

Parameter	Description
<b>Enable Mass Client Deploy?</b>	Specifies you want to generate a deployment script that can be run on multiple client machines. If you select this check box, enter an identifier for the mass client instance in the <b>Instance Name</b> box.
<b>Machine Name</b>	Enter the name of the machine on which you want to install the rich client.  This box is displayed if <b>Enable Mass Client Deploy?</b> is <i>not</i> selected.
<b>OS</b>	Specifies the operating system of the machine on which you install the rich client.
<b>Teamcenter Installation Path</b>	Specifies the path in which to install the rich client on the target machine. Accept the default path shown, or type a different path.

c. If you want to configure optional parameters, click **Show all parameters** , and then enter any values you want to update.

d. When you are satisfied with your parameter values, click **Save Component Settings**.

5. Enter required parameters for the **Teamcenter client communication system** component:

Parameter	Description
<b>Enable Mass Client Deploy?</b>	Specifies you want to generate a deployment script that can be run on multiple client machines. If you select this check box, enter an identifier for the mass client instance in the <b>Instance Name</b> box.
<b>Machine Name</b>	Enter the name of the machine on which you want to install TCCS.  This box is displayed if <b>Enable Mass Client Deploy?</b> is <i>not</i> selected.
<b>OS</b>	Specifies the operating system of the machine on which you install TCCS.
<b>Teamcenter Installation Path</b>	Specifies the path in which to install TCCS on the target machine. Accept the default path shown, or type a different path.

For information about advanced TCCS configuration, see *Teamcenter Administration*.

When you are satisfied with your parameter values, click **Save Component Settings**.

- Enter required parameters for the remaining components added by the four-tier rich client.

For each component, select the component, enter required parameters and any optional parameters you want to configure, and then click **Save Component Settings**.

### Server Manager

Parameter	Description
<b>Machine Name</b>	Enter the name of the machine on which you want to install the server manager.
<b>OS</b>	Specifies the operating system of the machine on which you install the server manager.
<b>Teamcenter Installation Path</b>	Specifies the path in which to install the server manager on the target machine. Accept the default path shown, or type a different path.
<b>Server Pool ID</b>	Specifies a unique ID for the pool of server processes.
<b>Startup Mode</b>	Specifies how you want to start the server manager. Choose <b>Service/Daemon</b> to run the server manager as a service (a system service on Windows or a daemon on Linux). Choose <b>Command Line</b> to run the server manager manually from a command line.

### Server Manager Cluster Configuration

Parameter	Description
<b>Machine Name</b>	Enter the name of the machine on which you want to install the server manager cluster.
<b>OS</b>	Specifies the operating system of the machine on which you install the server manager cluster.
<b>Server Manager Cluster ID</b>	Specifies the path in which to install the server manager cluster on the target machine. Accept the default path shown, or type a different path.
<b>Server Manager Database Creation Settings</b>	Options for creating the server manager database.
<b>Create new database for the Server Manager Cluster</b>	Choose this option to create a new database user and database for the server manager. You must be prepared to enter database system credentials.
<b>Use an existing database for the</b>	Choose this option if you want to use an existing database user and database for the server manager. Your database administrator must create the database user and database before you proceed.

Parameter	Description
Server Manager Cluster	
Server Manager Database Settings	Select your database type ( <b>Oracle</b> or <b>MSSQLServer</b> ), and then enter the required values for the server manager database as appropriate for your database type.  Consult your database administrator for database system values as needed.

### Teamcenter Web Tier (Java EE)

Parameter	Description
Machine Name	Enter the name of the machine on which you want to install the Teamcenter web tier.
OS	Specifies the operating system of the machine on which you install the Teamcenter web tier.
Teamcenter 4-tier URL	Specifies the URL to the Teamcenter web tier. This value is not directly editable, but is constructed from other values in this panel.
Web App Server Machine Name	Specifies the name of the Web tier application.  The default name of the Web tier application is <b>tc</b> .
Teamcenter Web Application Name	Specifies the machine where you deploy the Teamcenter web tier WAR file (typically, <b>tc.war</b> ) in a web application server.
Context Parameters	Here you specify values of context parameters for the Teamcenter web tier application.
Teamcenter Connection Name	Specifies a name for the web tier connection.
Tag	Specifies a tag for the environment that can be used to filter the list of TCCS environments during rich client logon.

### Teamcenter Web Tier (.NET)

Parameter	Description
Machine Name	Enter the name of the machine on which you want to install the Teamcenter web tier.
OS	Specifies the operating system of the machine on which you install the Teamcenter web tier.
Teamcenter Installation Path	Specifies the path in which to install the server manager on the target machine. Accept the default path shown, or type a different path.
Protocol	Specifies the protocol for the web tier connection ( <b>http</b> or <b>https</b> ).

Parameter	Description
<b>Teamcenter 4-tier URL</b>	Specifies the URL to the Teamcenter web tier. This value is not directly editable, but is constructed from other values in this panel.
<b>Virtual Directory Name</b>	Specifies the IIS virtual directory name for Teamcenter Web tier deployment. The default value is <b>tc</b> . Web URLs for Teamcenter four-tier deployments are based on this value.  For example, if you specify the default value as <b>tc</b> , the URLs are of the form: <b>http://host:port/tc/...</b>
<b>Configuration</b>	Here you specify values for identifying the Teamcenter web tier connection.
<b>Teamcenter Connection Name</b>	Specifies a name for the web tier connection.
<b>Tag</b>	Specifies a tag for the environment that can be used to filter the list of TCCS environments during rich client logon.

- If you add other components to your environment, enter required parameters for those components.

Select each component, enter required parameter values, and then click **Save Component Settings**.

If you don't have values for all required parameters, you can save your settings at any time and return to finish them. However, the **Deploy** tab is disabled until all components in the environment show a configuration status of **100%**.

- When all components are fully configured, go to the **Deploy** tab. Click **Generate Install Scripts** to generate deployment scripts to update affected machines. When script generation is complete, note any special instructions in the **Deploy Instructions** panel.
- Locate deployment scripts, copy each script to its target machine, and run each script on its target machine.

For more information about running deployment scripts, see *Deployment Center — Usage*.

## Install the two-tier rich client

Install a Teamcenter two-tier rich client that communicates with the Teamcenter corporate server using Teamcenter client communication system (TCCS). This configuration supports most Teamcenter features and does not require a web tier.

**Note:**

Make sure your Deployment Center is upgraded to Deployment Center 2412. Your version of Deployment Center must be equal to or later than the version of Teamcenter you install.

You can add a rich client when you create a new Teamcenter environment or you can add a rich client to an existing environment. This procedure describes how to add a rich client to an existing environment.

1. Log on to Deployment Center, and then select an existing environment to which you want to add the two-tier rich client.
2. In the **Components** tab, click **Add component to your environment** ⊕ to display the **Available Components** panel.
3. In **Available Components**, select the **Rich client two-tier** component, and then click **Update Selected Components** to add it to the **Selected Components** list.

If your environment is single box (If your environment type specified in the **Options** tab is **Single Box**), Deployment Center automatically adds the **Teamcenter client communication system** component to the **Selected Components** list.

4. In the **Selected Components** list, select **Rich client two-tier** and then enter parameters for this component:
  - a. If you configured a four-tier rich client in a **Global** infrastructure environment, you can import that client into your **Local** infrastructure environment.

If you have no **Global** infrastructure environments, skip this step and proceed to step **b**.

If you want to import a four-tier rich client configuration, perform the following steps:

- A. Select the **Do you want to import 'Rich client four-tier' from other environments?**  check box.

Deployment Center displays a table of environments that contain a four-tier rich client that can be shared to your environment.

- B. Select the environment from the list that contains the four-tier rich client you want to import. Then, click **Save Component Settings**.

The **Rich client four-tier** component is fully configured (**100%** complete).

- C. Proceed to step **5**.
- b. Enter parameter values for the four-tier rich client according to your environment type:


- **Single box**

All required parameters are supplied by existing components in your environment.

- **Distributed**

Enter the required parameters below.

Parameter	Description
<b>Enable Mass Client Deploy?</b>	Specifies you want to generate a deployment script that can be run on multiple client machines. If you select this check box, enter an identifier for the mass client instance in the <b>Instance Name</b> box.
<b>Machine Name</b>	Enter the name of the machine on which you want to install the rich client.  This box is displayed if <b>Enable Mass Client Deploy?</b> is <i>not</i> selected.
<b>OS</b>	Specifies the operating system of the machine on which you install the rich client.
<b>Teamcenter Installation Path</b>	Specifies the path in which to install the rich client on the target machine. Accept the default path shown, or type a different path.

- If you want to configure optional parameters, click **Show all parameters** , and then enter any values you want to update.
- When you are satisfied with your parameter values, click **Save Component Settings**.

If your environment is distributed, Deployment Center automatically adds the **Teamcenter client communication system** component to the **Selected Components** list.

- Enter required parameters for the **Teamcenter client communication system** component:

Parameter	Description
<b>Enable Mass Client Deploy?</b>	Specifies you want to generate a deployment script that can be run on multiple client machines. If you select this check box, enter an identifier for the mass client instance in the <b>Instance Name</b> box.
<b>Machine Name</b>	Enter the name of the machine on which you want to install TCCS.  This box is displayed if <b>Enable Mass Client Deploy?</b> is <i>not</i> selected.
<b>OS</b>	Specifies the operating system of the machine on which you install TCCS.
<b>Teamcenter Installation Path</b>	Specifies the path in which to install TCCS on the target machine. Accept the default path shown, or type a different path.

For information about advanced TCCS configuration, see *Teamcenter Administration*.

When you are satisfied with your parameter values, click **Save Component Settings**.

6. If you add other components to your environment, enter required parameters for those components.

Select each component, enter required parameter values, and then click **Save Component Settings**.

If you don't have values for all required parameters, you can save your settings at any time and return to finish them. However, the **Deploy** tab is disabled until all components in the environment show a configuration status of **100%**.

7. When all components are fully configured, go to the **Deploy** tab. Click **Generate Install Scripts** to generate deployment scripts to update affected machines. When script generation is complete, note any special instructions in the **Deploy Instructions** panel.
8. Locate deployment scripts, copy each script to its target machine, and run each script on its target machine.

For more information about running deployment scripts, see *Deployment Center — Usage*.

## Installing the rich client using TEM

### Install the four-tier rich client using TEM

Install a four-tier rich client that connects to the Teamcenter web tier using HTTP protocol or Teamcenter client communication system (TCCS).

1. Log on to the operating system with the Teamcenter user account you created for installing and maintaining the Teamcenter installation.
2. **Install the prerequisite software** on the client host using an account with administrative privileges. Teamcenter Environment Manager (TEM) does not install the prerequisite software.
3. **Specify the path to a supported Java Runtime Environment (JRE)** by setting the **JRE64\_HOME** environment variable on your host.
4. Start Teamcenter Environment Manager (TEM).

In the Teamcenter 2412 software kit, run the **tem.sh** script.

If you install the rich client from a compact distribution, start TEM from the compact distribution kit.<sup>1</sup>


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<sup>1</sup> A *compact distribution* is a Teamcenter software installation package created by your Teamcenter administrator that contains a selected subset of Teamcenter features. This package is smaller than a full Teamcenter software kit and

5. In the **Welcome to Teamcenter** panel, select **Teamcenter**.
6. In the **Install/Upgrade Options** panel, click **Install**.

Note:

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

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

7. In the **Media Locations** panel, enter paths to any Teamcenter patches you want to apply during installation.

Optionally, add paths to any Teamcenter patches you want to apply during installation.

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

The configuration ID identifies your configuration when you perform maintenance tasks in TEM. Installation log files also reference your configuration by this ID.

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

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

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

Select any additional features you want to include in your rich client configuration. If you select additional features, TEM displays additional panels during installation that are not described in this procedure.

Note:

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

12. In the **File Client Cache (FCC)** panel, specify file caching and communication selections.

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is more easily distributed. However, if you attempt to install a feature not included in the compact distribution, TEM prompts for the location of a full Teamcenter software kit.

- a. Choose whether to use a new or existing FMS client cache (FCC). If you want to create a new FCC using the same settings as an existing FCC on your host, select the **Merge values from an existing FMS\_HOME**  check box.
  - b. Choose the communication protocol. By default, the four-tier rich client uses HTTP to communicate with the corporate server. If you want to use TCCS instead of HTTP, click **Advanced**, and then select the **Use Configurations and Environments**  check box.
13. In the **FCC Parents** panel, enter access information for the FMS server cache (FSC).
- a. Double-click the **Host** box, and then type the host name of the FSC.
  - b. Double-click the **Port** box, and then type the port used by the FSC. The default value is **4544**.
  - c. In the **Protocol** box, select the appropriate protocol used by the FSC.

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

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

You can configure File Management System further after installation.

14. If you chose TCCS instead of HTTP in step 11, skip this step and proceed to step 14.

In the **4-tier server configurations** panel, specify communication settings for the four-tier rich client. 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.

If you use HTTP instead of TCCS for client-server communication, skip to step 21.

**Note:**

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

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

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

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

16. In the **Forward Proxy Settings** panel, enter information about the TCCS forward proxy.

Value	Description
<b>Do not use forward proxy</b>	Specifies that you do not want to use a forward proxy.
<b>Use web browser settings</b>	Specifies that you want to use proxy settings from your web browser.
<b>Detect settings from network</b>	Specifies that you want to use proxy settings from your local network.
<b>Retrieve settings from URL</b>	Specifies that you want to obtain settings from a proxy autoconfiguration (PAC) file.
<b>Proxy URL</b>	Specifies the URL to the PAC file from which you want to obtain proxy settings.
<b>Configure settings manually</b>	Specifies that you want to enter proxy settings manually.
<b>All Protocols Host</b>	Specifies a name of a valid proxy to use for all protocols. In the accompanying <b>Port</b> box, type the port used by the proxy host.
<b>HTTP Proxy Host</b>	Specifies the host of a forward proxy server for the HTTP protocol. In the accompanying <b>Port</b> box, type the port used by the proxy host.
<b>HTTPS Proxy Host</b>	Specifies the host of a forward proxy server for the HTTPS protocol. In the accompanying <b>Port</b> box, type the port used by the proxy host.
<b>Exceptions</b>	<p>Specifies a semicolon-delimited list of host names and IP addresses to exempt. This box is optional.</p> <p>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.</p>

**Note:**

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

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

To add an environment to the table of TCCS environments, click **Add**, and then type the required values to configure the TCCS environment.

Value	Description
<b>Name</b>	Specifies a name for the TCCS environment.
<b>URI</b>	Specifies the URL to the rich client middle tier. Type a URL of the following form: <b>http://host:port/tc</b> .
<b>Tag</b>	<p>(Optional) Specifies a tag for the environment that can be used to filter the list of TCCS environments during rich client logon.</p> <p>In the <b>Client Tag Filter</b> panel during rich client installation, you can optionally provide a pattern to filter the list of environments displayed in the rich client to those environments that match the pattern.</p> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p>Example:</p> <p>You create 10 environments, three on <b>Server1</b> with Security Services, three on <b>Server1</b> without Security Services, and four on <b>Server2</b>.</p> <p>Tag the environments <b>SSO</b>, <b>no SSO</b>, and <b>Server2</b>, respectively.</p> </div>
<b>SSO App ID</b>	Specifies a Security Services (SSO) application ID. Type an application ID if you want to add a Security Services environment to your TCCS environment.
<b>SSO Login URL</b>	<p>Specifies the logon URL to the Security Services environment.</p> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p>Note:</p> <p>You must set up the Security Services environment before you configure TCCS.</p> <p>For example, in the <b>SSO App ID</b> box, type the value of the <b>SSO_APPLICATION_ID</b> context parameter from the web tier installation. In the <b>SSO Login URL</b> box, type the value of the <b>SSO_LOGIN_SERVICE_URL</b> context parameter.</p> </div>

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

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

18. Proceed to the **Reverse Proxy Settings** panel.

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

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

*Header\_Name1, Header\_Value1, Header\_Name2, Header\_Value2,...:Form\_Action*

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

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

- a. Click **Add**.

Note:

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

- b. In the **Criteria Details** table, add HTTP header names and values for criterion you want to add.
- c. In the **Form Action** box, specify a form action.
- d. Click **OK** to add the criterion or **Cancel** to abandon your changes.

Note:

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

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

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

This is required because the settings in the deployed **reverseproxy\_cfg.xml** override the default WebSEAL configuration.

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

19. In the **Secure socket layer (SSL) settings** panel, enter SSL settings.

Value	Description
<b>Disable SSL</b>	Specifies you want to disable SSL authentication.
<b>Configure Certificate Store Manually</b>	Specifies you want to manually configure the certificate store for Teamcenter.
<b>Configure trust store</b>	Contains options for manually configuring the certificate store for Teamcenter.
<b>Use trust store</b>	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.
<b>Accept untrusted certificates</b>	Specifies you want to accept untrusted certificates.
<b>Configure key store</b>	Specifies you want to configure a keystore for Teamcenter. If you select the <b>Use key store</b> check box, enter keystore configuration values.
<b>File</b>	Specifies the path to the keystore file.
<b>Type</b>	Specifies the file type. Choose <b>JKS</b> or <b>PLCS12</b> . The default file type is <b>JKS</b> .

Further configuration of SSL for Teamcenter is described in *Security Services Configuration*.

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

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

For example, if the **Client Tag Filter** value is set to **13.\*** in the rich client, all TCCS environments with **Tag** values beginning with **13.** are available to the rich client. Environments with **Tag** values beginning with **12** are not available.

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

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

**`https://domain/en-US/doc/282219420/PL20240523460057788.xid1899404/html/xid1899405`**

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

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

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

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

22. If you want to specify Security Services settings or other advanced rich client settings, click **Advanced** in the **Rich Client Settings** panel.
23. 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.

Start the rich client by changing to the directory where the rich client is installed and entering the **start\_portal** command.

Note:

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

### Install the two-tier rich client using TEM

Install a Teamcenter two-tier rich client that communicates with the Teamcenter corporate server using Teamcenter client communication system (TCCS). This configuration supports most Teamcenter features and does not require a web tier.

Note:

IOP protocol is no longer supported in Teamcenter. The Teamcenter two-tier rich client uses TCCS (Teamcenter client communication system) instead of IOP (Internet Inter-ORB Protocol) to communicate with the corporate server. Existing IOP-based two-tier rich clients are automatically converted to TCCS-based during upgrade.

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

2. **Install the prerequisite software** on the client host using an account with administrative privileges. Teamcenter Environment Manager (TEM) does not install the prerequisite software.
3. **Specify the path to a supported Java Runtime Environment (JRE)** by setting the `JRE64_HOME` environment variable on your host.
4. Start Teamcenter Environment Manager (TEM).


In the Teamcenter 2412 software kit, run the `tem.sh` script.

If you install the rich client from a compact distribution, start TEM from the compact distribution kit.<sup>2</sup>

5. In the **Welcome to Teamcenter** panel, select **Teamcenter**.
6. In the **Install/Upgrade Options** panel, click **Install**.

Note:

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

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

7. In the **Media Locations** panel, enter paths to any Teamcenter patches you want to apply during installation.

Optionally, add paths to any Teamcenter patches you want to apply during installation.

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

The configuration ID identifies your configuration when you perform maintenance tasks in TEM. Installation log files also reference your configuration by this ID.

9. In the **Solutions** panel, select **Rich Client 2-tier**.
10. Proceed to the **Features** panel. In the **Installation Directory** box, enter the path and directory in which you want to install the rich client. The directory must not exist. (TEM creates the directory.)
11. The **Teamcenter Rich Client 2-tier** feature is selected by default.

<sup>2</sup> A *compact distribution* is a Teamcenter software installation package created by your Teamcenter administrator that contains a selected subset of Teamcenter features. This package is smaller than a full Teamcenter software kit and is more easily distributed. However, if you attempt to install a feature not included in the compact distribution, TEM prompts for the location of a full Teamcenter software kit.

Select any additional features you want to include in your rich client configuration. If you select additional features, TEM displays additional panels during installation that are not described in this procedure.

Make sure you select the features included in your corporate server configuration, including custom features. This ensures all associated run-time server components and rich client plugins are available in the rich client. For example, if your corporate server contains the **NX Foundation** feature, you must select the **NX Rich Client Integration** feature in your two-tier rich client. If you do not select all required client features, TEM prompts you later in the installation process to return to the **Features** panel and select them.

Note:

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

12. Proceed to the **Key Manager Configuration** panel. If you use Key Manager, select the **Enable Key Manager**  check box and enter the required values. Otherwise, leave the check box cleared.
13. In the **File Client Cache (FCC)** panel, choose whether to use a new or existing FMS client cache (FCC).

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

14. In the **FCC Parents** panel, enter access information for the FMS server cache (FSC).
  - a. Double-click the **Host** box, and then type the host name of the FSC.
  - b. Double-click the **Port** box, and then type the port used by the FSC. The default value is **4544**.
  - c. In the **Protocol** box, select the appropriate protocol used by the FSC.

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

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

You can configure File Management System further after installation.

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

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

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

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

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

Value	Description
<b>Name</b>	Specifies a name for the TCCS environment.
<b>TC_DATA</b>	Enter the path to the data directory ( <b>TC_DATA</b> ) where you want Teamcenter Environment Manager to create shared data subdirectories and files. <sup>3</sup>
<b>Tag</b>	(Optional) Specifies a tag for the environment that can be used to filter the list of TCCS environments during rich client logon.  In the <b>Client Tag Filter</b> panel during rich client installation, you can optionally provide a pattern to filter the list of environments displayed in the rich client to those environments that match the pattern.

<sup>3</sup> This can be the network path to the **TC\_DATA** directory on your corporate server.

Value	Description
	<p>Example:</p> <p>You create 10 environments, three on <b>Server1</b> with Security Services, three on <b>Server1</b> without Security Services, and four on <b>Server2</b>.</p> <p>Tag the environments <b>SSO</b>, <b>no SSO</b>, and <b>Server2</b>, respectively.</p>
<b>SSO App ID</b>	Specifies a Security Services (SSO) application ID. Type an application ID if you want to add a Security Services environment to your TCCS environment.
<b>SSO Login URL</b>	<p>Specifies the logon URL to the Security Services environment.</p> <p>Note:</p> <p>You must set up the Security Services environment before you configure TCCS.</p> <p>For example, in the <b>SSO App ID</b> box, type the value of the <b>SSO_APPLICATION_ID</b> context parameter from the web tier installation. In the <b>SSO Login URL</b> box, type the value of the <b>SSO_LOGIN_SERVICE_URL</b> context parameter.</p>
<b>TcServer Character Encoding Canonical Name</b>	<p>Specifies the canonical name of the character encoding set Teamcenter clients use to access the database.</p> <p>Caution:</p> <p>To prevent data corruption, this character encoding set must match the encoding set used by the Teamcenter database.</p>
<b>Single Server</b>	Specifies whether to force all client sessions for the given user to use the same <b>tcserver</b> process. If set to <b>true</b> , all client sessions use the same <b>tcserver</b> . Setting it to <b>false</b> allows clients to control sharing of <b>tcserver</b> processes.

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

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

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

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

For example, if the **Client Tag Filter** value is set to **13.\*** in the rich client, all TCCS environments with **Tag** values beginning with **13**. are available to the rich client. Environments with **Tag** values beginning with **12** are not available.

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

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

```
https://domain/en-US/doc/282219420/PL20240523460057788.xid1899404/html/
xid1899405
```

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

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

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

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

19. If you want to specify Security Services settings or other advanced rich client settings, click **Advanced** in the **Rich Client Settings** panel.
20. 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.

Start the rich client by changing to the directory where the rich client is installed and entering the **start\_portal** command.

Note:

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

## Install the rich client (two-tier and four-tier) using TEM

Install a Teamcenter rich client that is configurable for two-tier or four-tier operation. This rich client supports multiple connections using Teamcenter client communication system (TCCS). In two-tier

connections, this client connects to the Teamcenter server. In four-tier connections, it connects to the Teamcenter rich client web tier.

1. Log on to the operating system with the Teamcenter user account you created for installing and maintaining the Teamcenter installation.
2. **Install the prerequisite software** on the client host using an account with administrative privileges. Teamcenter Environment Manager (TEM) does not install the prerequisite software.
3. **Specify the path to a supported Java Runtime Environment (JRE)** by setting the **JRE64\_HOME** environment variable on your host.
4. Start Teamcenter Environment Manager (TEM).


In the Teamcenter 2412 software kit, run the **tem.sh** script.

If you install the rich client from a compact distribution, start TEM from the compact distribution kit.<sup>4</sup>

5. In the **Welcome to Teamcenter** panel, select **Teamcenter**.
6. In the **Install/Upgrade Options** panel, click **Install**.

Note:

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

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

7. In the **Media Locations** panel, enter paths to any Teamcenter patches you want to apply during installation.

Optionally, add paths to any Teamcenter patches you want to apply during installation.

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

The configuration ID identifies your configuration when you perform maintenance tasks in TEM. Installation log files also reference your configuration by this ID.

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

---

<sup>4</sup> A *compact distribution* is a Teamcenter software installation package created by your Teamcenter administrator that contains a selected subset of Teamcenter features. This package is smaller than a full Teamcenter software kit and is more easily distributed. However, if you attempt to install a feature not included in the compact distribution, TEM prompts for the location of a full Teamcenter software kit.

10. Proceed to the **Features** panel. In the **Installation Directory** box, enter the path and directory in which you want to install the rich client. The directory must not exist. (TEM creates the directory.)
11. The **Teamcenter Rich Client (2-tier and 4-tier)** feature is selected by default.

Select any additional features you want to include in your rich client configuration. If you select additional features, TEM displays additional panels during installation that are not described in this procedure.

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

Note:

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

12. Proceed to the **Key Manager Configuration** panel. If you use Key Manager, select the **Enable Key Manager**  check box and enter the required values. Otherwise, leave the check box cleared.
13. In the **File Client Cache (FCC)** panel, specify file caching and communication selections.
  - a. Choose whether to use a new or existing FMS client cache (FCC). If you want to create a new FCC using the same settings as an existing FCC on your host, select the **Merge values from an existing FMS\_HOME**  check box.
  - b. Choose the communication protocol. By default, the four-tier rich client uses HTTP to communicate with the corporate server. If you want to use TCCS instead of HTTP, click **Advanced**, and then select the **Use Configurations and Environments**  check box.
14. In the **FCC Parents** panel, enter access information for the FMS server cache (FSC).
  - a. Double-click the **Host** box, and then type the host name of the FSC.
  - b. Double-click the **Port** box, and then type the port used by the FSC. The default value is **4544**.
  - c. In the **Protocol** box, select the appropriate protocol used by the FSC.

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

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

You can configure File Management System further after installation.

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

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

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

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

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

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

### Two-tier deployment

Value	Description
<b>Name</b>	Specifies a name for the TCCS environment.
<b>TC_DATA</b>	Enter the path to the data directory ( <b>TC_DATA</b> ) where you want Teamcenter Environment Manager to create shared data subdirectories and files. <sup>5</sup>

Value	Description
<b>Tag</b>	<p>(Optional) Specifies a tag for the environment that can be used to filter the list of TCCS environments during rich client logon.</p> <p>In the <b>Client Tag Filter</b> panel during rich client installation, you can optionally provide a pattern to filter the list of environments displayed in the rich client to those environments that match the pattern.</p> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p>Example:</p> <p>You create 10 environments, three on <b>Server1</b> with Security Services, three on <b>Server1</b> without Security Services, and four on <b>Server2</b>.</p> <p>Tag the environments <b>SSO</b>, <b>no SSO</b>, and <b>Server2</b>, respectively.</p> </div>
<b>SSO App ID</b>	Specifies a Security Services (SSO) application ID. Type an application ID if you want to add a Security Services environment to your TCCS environment.
<b>SSO Login URL</b>	<p>Specifies the logon URL to the Security Services environment.</p> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p>Note:</p> <p>You must set up the Security Services environment before you configure TCCS.</p> <p>For example, in the <b>SSO App ID</b> box, type the value of the <b>SSO_APPLICATION_ID</b> context parameter from the web tier installation. In the <b>SSO Login URL</b> box, type the value of the <b>SSO_LOGIN_SERVICE_URL</b> context parameter.</p> </div>
<b>TcServer Character Encoding Canonical Name</b>	<p>Specifies the canonical name of the character encoding set Teamcenter clients use to access the database.</p> <div style="border: 1px solid orange; padding: 10px; margin-top: 10px;"> <p>Caution:</p> <p>To prevent data corruption, this character encoding set must match the encoding set used by the Teamcenter database.</p> </div>
<b>Single Server</b>	Specifies whether to force all client sessions for the given user to use the same <b>tcserver</b> process. If set to <b>true</b> , all client sessions use the same <b>tcserver</b> . Setting it to <b>false</b> allows clients to control sharing of <b>tcserver</b> processes.

### Four-tier deployment

5 This can be the network path to the **TC\_DATA** directory on your corporate server.

Value	Description
<b>Name</b>	Specifies a name for the TCCS environment.
<b>URL</b>	Specifies the URL to the rich client middle tier. Type a URL of the following form: <b>http://host:port/tc.</b>
<b>Tag</b>	<p>(Optional) Specifies a tag for the environment that can be used to filter the list of TCCS environments during rich client logon.</p> <p>In the <b>Client Tag Filter</b> panel during rich client installation, you can optionally provide a pattern to filter the list of environments displayed in the rich client to those environments that match the pattern.</p> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p>Example:</p> <p>You create 10 environments, three on <b>Server1</b> with Security Services, three on <b>Server1</b> without Security Services, and four on <b>Server2</b>.</p> <p>Tag the environments <b>SSO</b>, <b>no SSO</b>, and <b>Server2</b>, respectively.</p> </div>
<b>SSO App ID</b>	Specifies a Security Services (SSO) application ID. Type an application ID if you want to add a Security Services environment to your TCCS environment.
<b>SSO Login URL</b>	Specifies the logon URL to the Security Services environment.
	<div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p>Note:</p> <p>You must set up the Security Services environment before you configure TCCS.</p> </div>

Value	Description
	For example, in the <b>SSO App ID</b> box, type the value of the <b>SSO_APPLICATION_ID</b> context parameter from the web tier installation. In the <b>SSO Login URL</b> box, type the value of the <b>SSO_LOGIN_SERVICE_URL</b> context parameter.

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

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

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

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

For example, if the **Client Tag Filter** value is set to **13.\*** in the rich client, all TCCS environments with **Tag** values beginning with **13.** are available to the rich client. Environments with **Tag** values beginning with **12** are not available.

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

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

**`https://domain/en-US/doc/282219420/PL20240523460057788.xid1899404/html/xid1899405`**

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

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

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

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

19. If you want to specify Security Services settings or other advanced rich client settings, click **Advanced** in the **Rich Client Settings** panel.
20. 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.

Start the rich client by changing to the directory where the rich client is installed and entering the **start\_portal** command.

Note:

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

### Install the rich client lite edition

The rich client lite edition contains limited applications and menu commands.

1. Start TEM and create a new Teamcenter configuration in the same manner as if you were installing a full Teamcenter rich client.
2. Proceed to the **Features** panel. Under **Base Install**, select **Teamcenter Rich Client (Lite Edition)**.
3. Proceed through the remaining panels in TEM to complete the installation.

## Configure rich client features

### Configuring client display language

#### Choose a display language for the rich client

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

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.

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/start_portal -nl locale-code
```

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

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

```
/tc/rac/start_portal -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 (**\$HOME/Teamcenter**<sup>6</sup>).

If you find that Asian multibyte characters do not display correctly when you start the rich client, set your system font to a font that supports Asian multibyte characters. For example, on Windows systems other than Windows 10, the **Arial Unicode MS** font can be set to **Message Box** to correct this problem.

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

**Caution:**

If you use the Lifecycle Visualization embedded viewer, do *not* use the `-nl` argument when you launch the rich client.

For the embedded viewer to work properly, the operating system locale and the rich client runtime locale must match. The `-nl` argument overrides the Java locale and can cause incorrect behavior in the embedded viewer.

## Add multibyte character support in an English rich client

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

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

2. Open the **customer.properties** in a plain text editor.
3. Add the following line to the file to set the **UseDefaultSwingFonts** property.

```
UseDefaultSwingFonts=true
```

<sup>6</sup> **\$HOME** is your user home directory.

4. Save the file and exit the text editor.
5. Change to the **racregistry** directory.
6. Run the **genregxml.bat** utility to register the change.

When you run Teamcenter in a multibyte environment, make sure the **TC\_XML\_ENCODING** environment variable is set to **UTF-8** and the **UGII\_UTF8\_MODE** environment variable is set to **1**.


### Configure online help access

To enable online help for the rich client, you must first **install the required online help software**.

To configure the rich client to access online help, set the **online help URL** in the client configuration.

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

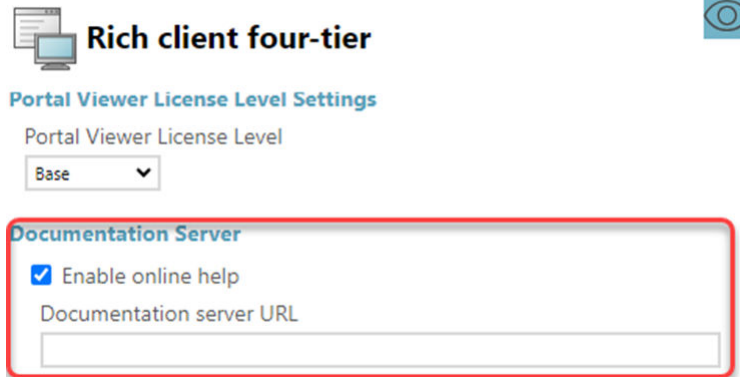
### Set online help URL in Deployment Center

1. In the **Rich client four-tier** or **Rich client two-tier** component, click **Show All Parameters** .
2. Select the **Enable Online Help**  check box, and then enter the **online help URL** in the **Documentation server URL** box:

**`https://domain/en-US/doc/282219420/PL20240523460057788.tc_doc_home`**

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

- Support Center (via Webkey): **docs.sw.siemens.com**
- Support Center (via Documentation Proxy): *doc-proxy-host:doc-proxy-port*
- Siemens Documentation Server: *doc-server-host:doc-server-port*



## Set online help URL in TEM

1. Launch TEM in maintenance mode and proceed to the **Feature Maintenance** panel.
2. Under the appropriate rich client type,<sup>7</sup> select **Modify settings**.
3. In the **Rich Client Settings** panel, select the **Enable Online Help**  check box, and then type the appropriate **online help URL** in the **Documentation server URL** box:

**`https://domain/en-US/doc/282219420/PL20240523460057788.tc_doc_home`**

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

- Support Center (via Webkey): **`docs.sw.siemens.com`**
- Support Center (via Documentation Proxy): `doc-proxy-host:doc-proxy-port`
- Siemens Documentation Server: `doc-server-host:doc-server-port`

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

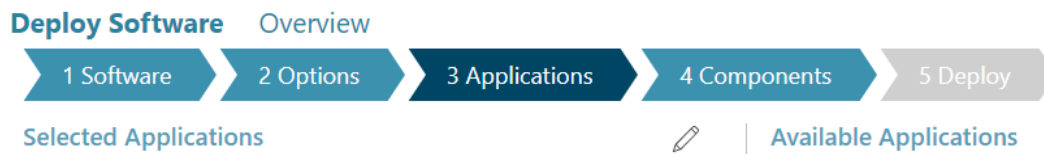
After you complete these steps, online help is available from the **Help**→**Help Library** menu option (or control-F1) in the rich client.

## Add applications


*Applications* contain administration data, software modules, and parameters that add specialized functionality to the Teamcenter environment.

<sup>7</sup> The rich client type may be **Teamcenter Rich Client 2-tier**, **Teamcenter Rich Client 4-tier**, or **Teamcenter Rich Client (2-tier and 4-tier)**.

## Adding applications using Deployment Center



Select the **Applications** tab to choose applications. The list of available applications is determined by the software you selected in the **Software** tab. Some applications are automatically selected based on your **Selected Software**. For example, if you choose Active Workspace, the **Selected Applications** list includes applications that are required for an Active Workspace installation.

1. In Deployment Center, select your existing environment.
2. In the **Applications** tab, click **Add or Remove Selected Applications** .

The **Available Applications** panel displays the available applications.

3. In **Available Applications**, choose the applications to install. If an application has dependent applications, Deployment Center automatically selects those additional applications.
4. Click **Update Selected Applications** to add them to the **Selected Applications** list.

The added applications show **Pending Install** status in the **Selected Applications** list.

To remove an application that is not yet installed, deselect the application in the **Available Applications** list, and then click **Update Selected Applications**.

5. When your **Selected Applications** list is complete, go to the **Components** tab.
6. In the **Components** tab, note any components whose configuration status is not **100%**. These are either dependent components for your selected applications or components with parameters added by your selected applications.

For each component, enter required parameter values, and then click **Save Component Settings**.

Enter required parameter values until all components in the environment show a configuration status of **100%**.

7. Go to the **Deploy** tab. Click **Generate Install Scripts** to generate deployment scripts to update affected machines. When script generation is complete, note any special instructions in the **Deploy Instructions** panel.
8. Locate deployment scripts, copy each script to its target machine, and run each script on its target machine.

For more information about running deployment scripts, see *Deployment Center — Usage*.

## Adding applications using TEM

1. Start Teamcenter Environment Manager (TEM):
  - a. Change to the **install** directory in the Teamcenter application root directory for your Teamcenter installation.
  - b. Run the **tem.sh** script.
2. In the **Maintenance** panel, choose **Configuration Manager**.
3. In the **Configuration Maintenance** panel, choose **Perform maintenance on an existing configuration**.
4. In the **Old Configuration** panel, select the configuration you want to modify.
5. In the **Feature Maintenance** panel, select **Add/Remove Features**.

Options in the **Feature Maintenance** panel vary depending on the features in your configuration.


6. In the **Features** panel, select applications to add to the configuration.

If an application has dependent components, you must first select those components to enable the application. Hover over the application name in the feature list to display the required components below the feature list. Find and select the required components to enable the desired application, and then select the application.

To find an application or component by name, enter a search string in the **Search** box in the **Features** panel, and then click the search button.

For information about an application, see the list of Teamcenter features.

7. Proceed through the remaining panels in TEM, entering the required parameters for the applications you selected.

For information about each panel, click the help button .

8. When TEM displays the **Confirmation** panel, click **Start** to begin installation.

## Can I remove an application after it is installed?

Caution:

If you installed an application using Deployment Center, *do not* attempt to uninstall it using TEM. Deployment Center does not populate the uninstall information required by TEM. Uninstalling an application using TEM may not remove it in Deployment Center, or may cause inconsistencies in the environment in Deployment Center.

## Migrate TEM to a different JRE

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

Caution:

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

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

1. If you changed the password for the Teamcenter administrative user after you installed the FMS server cache (FSC) service, update the logon credentials for the FSC service to specify the current password.
2. Start Teamcenter Environment Manager (TEM):
  - a. Change to the **install** directory in the Teamcenter application root directory for the Teamcenter installation or configuration you want to modify.
  - b. Run the **tem.sh** script.
3. In the **Maintenance** panel, select **Migrate Teamcenter to another JRE** and then click **Next**.
4. The **Migrate Teamcenter to another JRE** panel lists Teamcenter services that depend on the JRE and must be shut down before the migration can begin.

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

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

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

**Caution:**

Make sure you specify a 64-bit JRE.

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

If you encounter problems migrating Teamcenter to the new JRE, see the available [troubleshooting solutions](#).

## Configure Design Context for GM Overlay

- Set the following environment variables in the server startup script before starting the server broker service:

Environment variables	Comment
<code>QPL_USER=qpl-user ; export QPL_USER</code>	Replace <i>qpl-user</i> with the site QPL user name; the default is <b>qpl</b> .
<code>UGII_QPL=qpl-server-host-name: qpl-server-port; export UGII_QPL</code>	Replace <i>qpl-server-host-name</i> with the name of the QPL server host; the default is <b>your.qpl.server.com</b> . Replace <i>qpl-server-port</i> with the port number of the QPL server; the default is <b>14730</b> .
<code>QPL_DB_CONNECT=\${QPL_USER}: pwd@oracleSID ; export QPL_DB_CONNECT</code>	Replace <i>{QPL_USER}</i> ; the default is <b>\$TC_DB_CONNECT</b> .
<code>TNS_ADMIN=tnsadmin.ora-dir ; export TNS_ADMIN</code>	Replace <i>tnsadmin.ora-dir</i> with the path to the directory containing the Oracle <b>tnsadmin.ora</b> file; the default is <b>\$TC_DATA</b> .

- Install a central QPL server on **your.qpl.server.com**.
- Populate QPL builds for **CORP\_Vehicle Revisions**.
- Verify the QPL builds. A fine tuning may be necessary as the spacemap accuracy and range may have an impact on the results of Design Context filters.

## Setting default editors for Linux installations of rich client

**Pre-installation** For installing rich client on Linux platforms, the default editors for various file types are specified in the file `TC_ROOT/install/gmo/mailcap.hm`.

**Installed client**      The file specifying the text editor can be found in the file *TC\_ROOT/bin/tc\_edit*.

### 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.

# 5. Creating a custom distribution

## Overview of custom distributions

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

- Silent distribution

A *silent distribution* is an XML-based configuration file you can use to install Teamcenter *silently* (without user interaction) on another host. Silent installation suppresses most installation prompts and requires minimal user interaction. As an alternative to installing and configuring Teamcenter on individual hosts in your network, silent installation provides an efficient way to deploy Teamcenter on multiple hosts in your network.

The silent installation configuration file records the selections and values you enter during a Teamcenter installation and enables TEM to perform these steps noninteractively on other hosts. You can modify a silent configuration file to change certain Teamcenter settings before installation.

Silent distributions are supported for Teamcenter servers, two-tier rich clients, and four-tier rich clients.

- Compact distribution

A *compact distribution* is an installable package with a selected subset of Teamcenter client features. It is much smaller than a full Teamcenter software kit and is more easily distributed to multiple hosts in an organization.

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

Compact distributions are supported for Teamcenter two-tier and four-tier rich clients.

## Create a silent distribution

### Create a silent installation configuration file

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

2. Start Teamcenter Environment Manager (**tem.sh**) from the Teamcenter software kit.
3. In the **Welcome to Teamcenter** panel, select **Teamcenter**.
4. In the **Install/Upgrade Options** panel, select the **Create custom distribution**  check box, and then click **Install**.
5. In the **Custom Distribution Options** panel, select **Create silent configuration file**, and then specify the path to the silent installation file, for example, **silent.xml**. The specified path must be to an existing directory and the file name must end in **.xml**.
6. Proceed through the remaining panels to complete the Teamcenter installation.

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

Teamcenter Environment Manager creates a silent installation file (**.xml**) and a decryption key file (**.dat**) with the name you specified in step 5, for example, **silent.xml** and **silent.dat**. To reproduce your installation on another host, copy *both* of these files to the target machine, then **install the rich client silently**.

Caution:

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

## Install the rich client silently

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

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

```
tem.sh -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 **installxxx.log** file under the **install** directory in the Teamcenter application installation directory.

**Note:**

Before you launch the silent installation, make sure the **prerequisite software** is installed on the client machine. The silent installation script does not install the prerequisite software.

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

## Modify the silent installation configuration file

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

**Caution:**

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

## Sample silent installation configuration file

```

<?xml version="1.0" encoding="UTF-8"?>
<root>
<tem engine="2008.0.0" />
  <settings>
    <installDir value="C:\\Program Files\\Siemens\\Teamcenter2412" />
    <sourceDir value="D:\\kits\\tc2412\\win64" />
    <application value="tceng" />
    <silentMaintenance value="false" />
    <installingUser value="osuser" />
    <installLanguage value="ENGLISH" />
    <aboutFullVersion value="2412" />
    <version value="12000.1.0.20181207" />
  </settings>
  <sourceLocations>
    <coreLocations>
      <directory value="D:/kits/tc2412/win64" />
    </coreLocations>
    <browsedLocations />
  </sourceLocations>
  <config name="My Configuration 1" id="config1">
    <mode type="install" clone="false">
      <checkpoints>
        <checkpoint value="featureProperties">
          <point value="vcruntimes:vc2005,latest" />
          <point value="minMSSQL2005Version:10.50" />
          <point value="coreTemplate:foundation_template.xml" />
          <point value="feature_id:datamodel,rtserver" />
          <point value="vcruntimes:latest" />
          <point value="template_file:foundation_template.xml" />
          <point value="minDB2Version:9.7.4" />
          <point value="minOracleVersion:11.2.0.1" />
          <point value="template_name:foundation" />
          <point value="typeAnalysis:true" />
        </checkpoint>
      </checkpoints>
    </mode>
    <comments />
    <data>
      <adminUser guid="2E53CFC3AC75665E50FF0F207D1D013B">
        <password value="holrvvg6fpj40nGt7ZlCM2Q" encrypt="true" />
        <user value="tcdba" />
      </adminUser>
      <director guid="661AA2A766CA975D998EBE61455F3EA3">
        <saveStateOnFail value="true" />
        <status value="0" />
        <script>
          <temBase />
          <copyFeature name="Microsoft Visual C++ Runtimes"
feature="AOCF69C3A0BC61770EB81BD22667EA52" />
          <copyFeature name="Business Modeler IDE"
feature="A9CECD82127A11DB9804B622A1EF5492" />
          <copyFeature name="VC 2008 Redistributables"
feature="DPBL8RC6MUS0LCPS10NIPGR85RI7HPHQ" />
          <copyFeature name="Teamcenter File Services"
feature="BC76F9D1AB7C93A848D0FE3602F59097" />
          <copyFeature name="Flex License Server"

```

```

feature="D1d683A8B2CE1EB821B97CD2EE5D7627" />
  <copyFeature name="VC 2005 Redistributables"
feature="UDR4NG0DEZ1TN9XHKG7Z8AFDPVVTZXL2" />
  <copyFeature name="VC 2013 Redistributables"
feature="NJCMQH3ZMYTPPPGA8BS4Q1C7OV6IXVXU" />
  <copyFeature name="VC 2010 Redistributables"
feature="R08U30BA5KZYSNDFKMGXKKHWEYOVD7V" />
  <copyFeature name="VC 2012 Redistributables"
feature="Z9ICW073V9QXU4H5F8BK6CXG6KIFYWBQZ" />
  <copyFeature name="Business Modeler Templates"
feature="A909338A1CB411DB8AF6B622A1EF5492" />
  <copyFeature name="Digital Dashboard"
feature="A9CECD82127A11DB9804B622A1EF5599" />
  <copyFeature name="FMS Server Cache"
feature="90C2A1C96F6A61FAB397AF88ABE4AAC1" />
  <copyFeature name="Teamcenter Foundation"
feature="8C061DD51E13E0CB9DC4687B1A3348BE" />
  <copyFeature name="NX Part Family Classification Integration"
feature="B176F6B6E9E91D9804EFB0D2
010FD613" />
  <copyFeature name="Server Manager" feature="BF0E78AFE4280DCB08594EA2F3671BE8" />
.
.
.
  <unpack name="Microsoft Visual C++ Runtimes"
feature="A0CF69C3A0BC61770EB81BD22667EA52" />
  <unpack name="FMS Server Cache" feature="90C2A1C96F6A61FAB397AF88ABE4AAC1" />
  <unpack name="Teamcenter Foundation"
feature="8C061DD51E13E0CB9DC4687B1A3348BE" />
  <unpack name="NX Part Family Classification Integration"
feature="B176F6B6E9E91D9804EFB0D2010FD
613" />
  <preInstall name="Microsoft Visual C++ Runtimes"
feature="A0CF69C3A0BC61770EB81BD22667EA52" />
  <preInstall name="FMS Server Cache" feature="90C2A1C96F6A61FAB397AF88ABE4AAC1" />
  <preInstall name="Teamcenter Foundation"
feature="8C061DD51E13E0CB9DC4687B1A3348BE" />
  <preInstall name="NX Part Family Classification Integration"
feature="B176F6B6E9E91D9804EFB0D20
10FD613" />
  <install name="Microsoft Visual C++ Runtimes"
feature="A0CF69C3A0BC61770EB81BD22667EA52" />
  <install name="FMS Server Cache" feature="90C2A1C96F6A61FAB397AF88ABE4AAC1" />
  <install name="Teamcenter Foundation"
feature="8C061DD51E13E0CB9DC4687B1A3348BE" />

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

```

```

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

```

```

</flexClient>
<signatureCertificate guid="RRK3WTCSY4020QSZO90QFJWMISFAC2AX">
  <replaceCerts value="false" />
  <certificates value="" />
</signatureCertificate>
<foundationSettings guid="LHBY67ZMYHSHKED26FHDNDHFJTZD84I7">
  <templatesToBeInstalled value="" />
  <genClientCache value="generate all" />
  <genServCache value="" />
  <productionEnvironment value="true" />
  <requestMetaCacheRebuild value="true" />
  <enableGenServCache value="true" />
  <quickClone value="false" />
</foundationSettings>
<transientVolume guid="983980098FF188A8C4BF08E8168A32A8">
  <windowsVolume value="C:\\Temp\\transientVolume_tcdbuser" />
  <unixVolume value="/tmp/transientVolume_tcdbuser" />
</transientVolume>

<TcOracleSystem guid="1EF0859AC04962CBFA41C4C8C84499A1">
  <password value="WsRDrEfD0/4vnL00/mj2wA" encrypt="true" />
  <user value="system" />
  <tablespaces
value="tcdbuser_IDATA:90;tcdbuser_ILOG:5;tcdbuser_INDX:5;tcdbuser_TEMP:5;tcdbuser_MM
V:5" />
  <tablespacePath value="/db/oradata/tc/tcdbuser" />
</TcOracleSystem>
<security guid="ZUG630E2YRNFD1VY13KCEZM52XFJP45D">
  <adminDirectory value="$TC_ROOT\\security" />
</security>
<volume guid="1F16971107DE44C0C7827F800EE4AEF8">
  <port value="4544" />
  <fscModel value="Simple Model" />
  <location value="C:\\Program Files\\Siemens\\volume" />
  <name value="volume" />
  <hostName value="tchost" />
  <fscId value="FSC_tchost_osuser" />
</volume>
<TcOracleEngine guid="F4F7C0852B27D6E56B8C64BE77FFA14C">
  <port value="1521" />
  <createUser value="true" />
  <host value="dbhost" />
  <flush value="false" />
  <populate value="true" />
  <service value="tc" />
  <uTF8Enabled value="true" />
  <password value="AdxT7Jmz2/WbYF60/eqX9g" encrypt="true" />
  <user value="tcdbuser" />
  <create value="true" />
</TcOracleEngine>
</data>
<features>
  <add feature="A0CF69C3A0BC61770EB81BD22667EA52" name="Microsoft Visual C++
Runtimes" />
  <add feature="90C2A1C96F6A61FAB397AF88ABE4AAC1" name="FMS Server Cache" />
  <add feature="8C061DD51E13E0CB9DC4687B1A3348BE" name="Teamcenter Foundation" />
  <add feature="B176F6B6E9E91D9804EFB0D2010FD613" name="NX Part Family
Classification Integration"

```

```

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

```

## Create a compact distribution

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

1. Log on to the Teamcenter corporate server host and change to the root directory of the Teamcenter software kit.
2. Start TEM (**tem.sh**) from the Teamcenter software kit.
3. Proceed to the **Install/Upgrade Options** panel, select the **Create custom distribution** check box, and then click **Install**.
4. In the **Custom Distribution Options** panel, select **Create compact deployable media**. Enter the path in which to create the compact distribution and a file name for the package, for example, **temp/tc.zip**.

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

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

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

### Caution:

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

## Embedding Active Workspace in a high-security environment

In case the rich client host does not have an internet connection, an administrator can replace the distributed WV2R with a "Fixed" distribution to provide necessary support for Active Workspace functionality.

Functionality of Active Workspace when embedded in the rich client depends on the Microsoft Edge WebView2 Runtime (WV2R). The type of WV2R distributed with Teamcenter is Evergreen, which automatically provides regular platform updates and security patches through an internet connection.

Use the following procedure to configure the Fixed version of WebView2.

1. Download the Fixed version of the **WebView2 Runtime** package from the Microsoft site <https://developer.microsoft.com/microsoft-edge/webview2#download-section>.
2. Decompress the WebView2 Runtime package using the command-line command **expand {path to the package} -F:\* {path to the destination folder}** or by using a decompression tool such as WinRAR.

Avoid decompressing through File Explorer. It may not generate the correct folder structure.

3. Include all the decompressed Fixed Version binaries in your app package for deployment on the target machine.
4. During your app's installation on the client machine, set the **org.eclipse.swt.browser.EdgeDir** system property to the location of the WebView2 destination folder.

## Embedded Active Workspace user data location

The default location for the WV2R user data cache is **%LOCALAPPDATA%\richclient\ActiveWorkspaceBrowser**. If for some reason a different location for the user data cache is desired, set the **com.siemens.splm.browser.interop.AWDataDir** system property to the desired location.



# 6. Installing TCCS

## What is TCCS?

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

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

Teamcenter provides three ways to install TCCS:

Stand-alone installation wizard	<p>Provides a step-by-step interface that installs TCCS on a single host. This wizard does not install a Teamcenter client.</p> <p>If you do not use the rich client or Client for Office, and you use NX or Lifecycle Visualization, you can optionally install TCCS on your workstation using the stand-alone installation wizard.</p> <p>You can optionally use the stand-alone installation wizard to <b>install TCCS silently</b>, without prompts.</p>
Deployment Center	<p>Add the <b>Teamcenter client communication system</b> component in the <b>Components</b> tab in Deployment Center. This component is also added automatically when you add the rich client to your environment.</p>
Teamcenter Environment Manager (TEM)	<p>If you install a four-tier rich client and do not configure TCCS during installation, you can <b>enable and configure TCCS</b> after rich client installation.</p> <p>For other rich client installation types, TCCS is installed and configured during rich client installation.</p>

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

**Note:**

The FCC requires an FMS server cache (FSC) to which to connect. Your Teamcenter administrator must provide you connection information for the FSC.

Each FCC requires a parent FSC to provide it with FMS configuration information upon startup. In small deployments, the parent file server cache also provides the client cache with access to files.

## Preparing to install TCCS

To install TCCS, you must have a certified version of Java installed on your client host. TCCS installation or configuration may fail if a certified Java version is not present. For minimum required versions of Java,

see the Software Certifications Matrix on the [Support White Papers Certifications](#) page on Support Center.

You must also know the following values to enter during installation:

- **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:

- 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, obtain the following values from your Teamcenter administrator:
  - **TCCS environment**

Obtain 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.

Note:

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

- **Forward proxy**

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

- **Reverse proxy**

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

## Install TCCS using the stand-alone installation wizard

### Launch the installer

1. On the Teamcenter 2412 software kit, change to the **additional\_applications/tccs\_install** directory.
2. In the **tccs\_install** directory, enter the **tccsinst.bin** command to launch the TCCS installation program.

**Note:**

If your home directory does not have sufficient temporary space for the installation process, the program asks you to specify a different temporary directory.

Restart the installation specifying a temporary directory on the **tccsinst.bin** command:

```
tccsinst.bin -is:tempdir /mnt/path
```

3. Proceed to the **License Agreement** dialog box. Select the option to accept the terms of the agreement.
4. In the **JRE Path** dialog box, enter a path to a supported Java Runtime Environment (JRE), or accept the JRE path shown.

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

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

**Note:**

If the installation program cannot find the **fcc.zip** file, the program prompts for the displays the **FCC File Location** dialog box, which prompts you to enter the path to the **fcc.zip** file.

## FCC settings

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

Value	Description
<b>Protocol</b>	Specifies the communication protocol of the parent FSC. The default value is <b>HTTP</b> .
<b>Host</b>	Specifies the host name of the parent FSC.
<b>Port</b>	Specifies the number of the port used by the parent FSC.
<b>Path</b>	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.

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

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

## Advanced Configuration

If you selected the **Advanced Configuration** check box in the **Setup Type** dialog box, enter advanced configuration settings. Otherwise, skip this section and proceed to **Complete the installation**.

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

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

You can configure TCCS environments further after installation is complete.

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

Value	Description
<b>Do not use forward proxy</b>	Specifies that you do not want to use a forward proxy.
<b>Use web browser settings</b>	Specifies that you want to use proxy settings from your web browser.
<b>Detect settings from network</b>	Specifies that you want to use proxy settings from your local network.
<b>Retrieve settings from URL</b>	Specifies that you want to obtain settings from a proxy autoconfiguration (PAC) file.
<b>Proxy URL</b>	Specifies the URL to the PAC file from which you want to obtain proxy settings.
<b>Configure settings manually</b>	Specifies that you want to enter proxy settings manually.
<b>All Protocols Host</b>	Specifies a name of a valid proxy to use for all protocols. In the accompanying <b>Port</b> box, type the port used by the proxy host.
<b>HTTP Proxy Host</b>	Specifies the host of a forward proxy server for the HTTP protocol. In the accompanying <b>Port</b> box, type the port used by the proxy host.
<b>HTTPS Proxy Host</b>	Specifies the host of a forward proxy server for the HTTPS protocol. In the accompanying <b>Port</b> box, type the port used by the proxy host.
<b>Exceptions</b>	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

Value	Description
	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.

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

- 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
<b>Name</b>	Specifies the name of a the TCCS environment.
<b>URI</b>	Specifies the URI to the TCCS environment.
<b>Tag</b>	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 <b>Client Tag Filter</b> value to filter the list of environments displayed in the rich client to those environments that match the filter.  For example, if the client <b>Client Tag Filter</b> value is <b>9*</b> , all TCCS environments with <b>Tag</b> values beginning with <b>9</b> are available to the client host. Environments with <b>Tag</b> values beginning with <b>10</b> are not available.
<b>SSO Login URL</b>	Specifies the URL to the Security Services application you use with TCCS.
<b>SSO APP ID</b>	Specifies the ID of the Security Services application you use with TCCS.

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

You can configure TCCS environments further after installation is complete.

- 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.<sup>1</sup>

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:

<sup>1</sup> The installer writes criteria definitions to the **reverseproxy\_cfg.xml** file.

*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**.

You can click **Remove** to remove an existing criterion from the table, or click **Edit** to edit an existing criterion.

- b. In the **Criteria Details** table, add HTTP header names and values for criterion you want to add.
  - c. In the **Form Action** box, specify a form action.
  - d. Click **OK** to add the criterion or **Cancel** to abandon your changes.
  - e. **Configure your reverse proxy server** if necessary.
5. In the **Secure socket layer (SSL) settings** dialog box, enter SSL settings.

Value	Description
<b>Disable SSL</b>	Specifies you want to disable SSL authentication.
<b>Configure Certificate Store Manually</b>	Specifies you want to manually configure the certificate store for Teamcenter.
<b>Configure trust store</b>	Contains options for manually configuring the certificate store for Teamcenter.
<b>Use trust store</b>	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.
<b>Accept untrusted certificate</b>	Specifies you want to accept untrusted certificates.
<b>Configure key store</b>	Specifies you want to configure a keystore for Teamcenter. If you select the <b>Configure key store</b> <input checked="" type="checkbox"/> check box, type the path to the keystore file in the file path box.
<b>Type</b>	Specifies the file type. Choose <b>JKS</b> or <b>PLCS12</b> . The default file type is <b>JKS</b> .

Further configuration of SSL for Teamcenter is described in *Security Services Configuration*.

## Complete the installation

1. 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.
2. When installation is complete, click **Done** to close the installation wizard.
3. If you install TCCS on a Windows 10 host, restart the system to enable the **FMS\_HOME** environment variable.

## Configure a reverse proxy server

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.

## Install TCCS using Deployment Center

You can install TCCS on a client machine by including the **Teamcenter client communication system** component in your environment. If you install the rich client in your environment, this component is added automatically.

1. In Deployment Center, select your environment and proceed to the **Components** tab.
2. Click **Add component to your environment** ⊕.

the **Teamcenter client communication system** component in the **Components** tab in Deployment Center. If you install the rich client in your environment, this component is added automatically.

3. In the **Available Components** panel, select **Teamcenter client communication system**.

Alternatively, if you want to add a rich client to your environment, select a rich client component. This automatically adds the **Teamcenter client communication system** component.

Click **Update Selected Components**.

4. In the **Selected Components** list, select **Teamcenter client communication system** and then enter parameters for this component:
  - a. If you configured TCCS in a **Global** infrastructure environment, you can import that component into your **Local** infrastructure environment.

If you have no **Global** infrastructure environments, skip this step and proceed to step **b**.

If you want to import a TCCS configuration, perform the following steps:

- A. Select the **Do you want to import 'Teamcenter Client Communication System' from other environments?**  check box.

Deployment Center displays a table of environments that contain a TCCS component that can be shared to your environment.


- B. Select the environment from the list that contains the TCCS component you want to import. Then, click **Save Component Settings**.

The **Teamcenter client communication system** component is fully configured (**100%** complete).

- C. Proceed to step **5**.

- b. Enter the following required parameters:

Parameter	Description
<b>Enable Mass Client Deploy?</b>	Specifies you want to generate a deployment script that can be run on multiple client machines. If you select this check box, enter an identifier for the mass client instance in the <b>Instance Name</b> box.
<b>Machine Name</b>	Enter the name of the machine on which you want to install TCCS. This box is displayed if <b>Enable Mass Client Deploy?</b> is <i>not</i> selected.
<b>OS</b>	Specifies the operating system of the machine on which you install TCCS.
<b>Teamcenter Installation Path</b>	Specifies the path in which to install TCCS on the target machine. Accept the default path shown, or type a different path.

- c. To configure optional advanced parameters, click **Show all parameters** . In the all parameters view, you can configure settings for forward or reverse proxy, secure sockets layer (SSL), and other settings.
- d. After you complete entering parameters, click **Save Component Settings**.

Proceed to the **Deploy** tab.

5. In the **Deploy** tab, generate deployment scripts for affected machines in your environment.

When script generation is complete, Deployment Center displays the **Deploy Instructions** panel.


6. Locate deployment scripts, copy each script to its target machine, and run each script on its target machine as instructed in the **Deploy Instructions** panel.

## Enable TCCS for a four-tier rich client using TEM

If you installed a four-tier rich client using TEM and did not configure it to use TCCS, you can enable TCCS by modifying the configuration.

The **Teamcenter Rich Client 2-tier** and **Teamcenter Rich Client (2-tier and 4-tier)** components use TCCS by default, but the **Teamcenter Rich Client 4-tier** component uses HTTP communication by default.

- If you selected the **Use Configurations and Environments**  checkbox during installation of the four-tier rich client, the rich client is configured to use TCCS and you can skip the following procedure.
- If you did *not* select this checkbox and you want to enable TCCS for the four-tier rich client, perform the following steps.
  1. Start Teamcenter Environment Manager (TEM) in maintenance mode:
    - a. Change to the **install** directory in the Teamcenter application root directory for your Teamcenter installation.
    - b. Run the **tem.sh** script.
  2. In the **Maintenance** panel, choose **Configuration Manager**.
 

For more information about any panel in TEM, click the help button .
  3. In the **Configuration Maintenance** panel, select **Perform maintenance on an existing configuration**.
  4. In the **Old Configuration** panel, select the configuration that contains the four-tier rich client.

5. In the **Feature Maintenance** panel, under **Client Communication System**, select **Use Configurations and Environments**.
6. In the **Client Communication System Switch** panel, select the **Use Configurations and Environments** check box.
7. In the **Configuration Selection for Client Communication System** panel, select **Private (non-existing, modifiable)**.
8. 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**.

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

Value	Description
<b>Name</b>	Specifies the name of a the TCCS environment. This name is displayed in the TCCS logon dialog after configuration is complete.
<b>URI</b>	Specifies the URI to the TCCS environment. This is the endpoint URI for the web tier deployment, for example, <b>http://host:port/tc</b> .  If your network uses IPv6 (128-bit) addresses, use the hostname in URIs and do not use the literal addresses, so the domain name system (DNS) can determine which IP address should be used.
<b>Tag</b>	Specifies a string identifier for the TCCS environment.
<b>SSO App ID</b>	Specifies the ID of the Security Services application you use with TCCS.
<b>SSO Login URL</b>	Specifies the URL to the Security Services application you use with TCCS.  If you use Security Services in applet-free mode, include <b>/tccs</b> at the end of the URL, for example:  <b>http://host:port/app-name/tccs</b>

10. In the **Reverse Proxy Settings** panel, accept the default values.
11. Proceed to the **Secure Socket Layer (SSL) Settings** panel.

If you use SSL, specify SSL settings.

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

Value		Description
		This option is available only on Windows hosts.
<b>Disable SSL</b>		Specifies you want to disable SSL authentication.
<b>Configure Certificate Store Manually</b>		Specifies you want to manually configure the certificate store for Teamcenter.
	<b>Configure trust store</b>	Contains options for manually configuring the certificate store for Teamcenter.
	<b>Use trust store</b>	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.
	<b>Accept untrusted certificates</b>	Specifies you want to accept untrusted certificates.
	<b>Configure key store</b>	Contains options for configuring the keystore for Teamcenter.
	<b>Use key store</b>	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 <b>JKS</b> .

Additional configuration of SSL for Teamcenter is described in *Security Services Configuration*.

- In the **Client Tag Filter** panel, accept the default value or type a different value.
- In the **Confirmation** panel, review the settings you entered and click **Start** to apply the configuration changes.

## Install TCCS silently

Install Teamcenter client communication system (TCCS) silently, without prompts, from a command line.

### Prerequisites

Make sure your TCCS machine has the required Java installed and that you know the **required values to install TCCS**.

### Procedure

- Open an administrator command prompt.
- Copy the *kit-location/additional\_applications/tccs\_install.zip* file to a local directory and unzip its contents

Replace *kit-location* with the path to the Teamcenter 2412 software kit.

3. Run the TCCS installer with the `-r` argument to generate a silent properties file:

```
tccsinst.exe -r properties-file-path
```

If you do not specify the *properties-file-path*, the utility creates a properties file named **install.properties** in the current directory.

For example:

```
c:\tccsinst.exe -r c:\temp\tccsinstaller.properties
```

4. Using the silent properties file to do the silent installation:

```
tccsinst.exe -i properties-file-path
```

If you do not specify the *properties-file-path*, the utility uses the default **install.properties** file in the current directory.

For example:

```
c:\tccsinst.exe -i c:\temp\tccsinstaller.properties
```

## Set permissions for a shared TCCS configuration

If you created a shared TCCS configuration, set permissions on the **etc/Siemens** directory to ensure the shared TCCS configuration is available to other users:

- If other users of the shared TCCS configuration are in the *same* group as the user who created the configuration, set permissions on the **etc/Siemens** directory and all subdirectories to **775**.
- If other users of the shared TCCS configuration are in *different* groups from the user who created the configuration, set permissions on the **etc/Siemens** directory and all subdirectories to **777**.

# 7. Installing the Teamcenter Security Services Session Agent

## Install the Session Agent using Deployment Center

The **Teamcenter Security Service Session Agent** provides authentication and single sign-on capability for Teamcenter desktop based clients and integrations.

This procedure assumes you have an existing Teamcenter environment with the required Teamcenter software kits in your software repository in Deployment Center.

1. Log on to Deployment Center and select your Teamcenter environment.
2. Proceed to the **Components** tab and click **Add component to your environment** ⊕ to display the **Available Components** panel.
3. Select **Teamcenter Security Service Session Agent**, and then click **Update Selected Components**.
4. In the **Selected Components** list, select **Teamcenter Security Service Session Agent** and then enter parameters for this component:
  - a. If you configured the Session Agent in a **Global** infrastructure environment, you can import that component into your **Local** infrastructure environment.

If you have no **Global** infrastructure environments, skip this step and proceed to step **b**.

If you want to import a Teamcenter Security Services Session Agent configuration, perform the following steps:

- A. Select the **Do you want to import 'Teamcenter Security Service Session Agent' from other environments?**  check box.

Deployment Center displays a table of environments that contain a Teamcenter Security Services Session Agent component that can be shared to your environment.

- B. Select the environment from the list that contains the Session Agent component you want to import. Then, click **Save Component Settings**.

The **Teamcenter Security Service Session Agent** component is fully configured (**100%** complete).

- C. Proceed to step **5**.

b. Enter parameter values as appropriate for your environment type:

- **Single box**

All required parameters are supplied by existing components in your environment.

- **Distributed**

Enter the required parameters below.

Parameter	Description
<b>Enable Mass Client Deploy?</b>	Specifies you want to generate a deployment script that can be run on multiple client machines. If you select this check box, enter an identifier for the mass client instance in the <b>Instance Name</b> box.
<b>Machine Name</b>	Enter the name of the machine on which you want to install the rich client.  This box is displayed if <b>Enable Mass Client Deploy?</b> is <i>not</i> selected.
<b>OS</b>	Specifies the operating system of the machine on which you install the rich client.
<b>Teamcenter Installation Path</b>	Specifies the path in which to install the rich client on the target machine. Accept the default path shown, or type a different path.
<b>Install XML-RPC libraries</b>	If you have Teamcenter client applications released with Teamcenter 13.2 or earlier that you are not yet updating, select the <b>Install XML-RPC libraries</b> <input checked="" type="checkbox"/> check box. This option ensures Security Services compatibility with earlier Teamcenter versions.

c. Click **Save Component Settings** to submit the Session Agent configuration values.

a. Complete configuration of any remaining components.

5. When all components are fully configured, go to the **Deploy** tab. Click **Generate Install Scripts** to generate deployment scripts to update affected machines. When script generation is complete, note any special instructions in the **Deploy Instructions** panel.
6. Locate deployment scripts, copy each script to its target machine, and run each script on its target machine.

For more information about running deployment scripts, see *Deployment Center — Usage*.

## Install the Session Agent using the stand-alone installation wizard

The Security Services Session Agent replaces Java applets (session agent, session detector, and status reporter), making Security Services applet-free. Install the Session Agent on client machines to provide a single sign-on experience without Java applets.

1. Close all programs before you begin installing the Session Agent.
2. Copy Session Agent installation files to your Teamcenter client host.
  - a. In the Teamcenter software kit, change to the following location:

*kit-location*/additional\_applications/sso

- b. Copy the following files to your Teamcenter client host:

**install.bin**  
**TEAMCENTER\_SSO\_COMMON.zip**  
**TEAMCENTER\_SSO\_SESSIONAGENT.zip**  
**TEAMCENTER\_SSO\_SESSIONAGENT\_COMPAT.zip**

3. On your Teamcenter client host, type the **install.bin** command to launch the Session Agent installation program.
4. Choose a language for the installation wizard, and then click **OK**.<sup>1</sup>
5. Proceed to the **License Agreement** dialog box, and select the check box to accept the terms of the license agreement.
6. In the **Choose Install Folder** dialog box, enter a destination folder for the installation.

If you accept the default path, the Session Agent automatically installs in a hidden folder.

On Windows systems, if you select a path in the **Program Files** folder, the location is available to any user logging onto the system.

7. Proceed to the **Compatibility Settings** panel.

If you have Teamcenter client applications released with Teamcenter 13.2 or earlier that you are not yet updating, select the **Install XML-RPC libraries**  check box. This option ensures Security Services compatibility with earlier Teamcenter versions.

8. In the **Pre-Installation Summary** dialog box, verify your selections, and then click **Install** to install the Session Agent.
9. If the installation is successful, a dialog window indicates the location where the Session Agent files were installed. Click **Done** to close the installation wizard.

---

<sup>1</sup> The list of available languages depends on your operating system locale. If the language you need is not in the list, change your operating system locale to the correct language and restart the installation wizard.

On Windows systems, you can verify the installation of the Session Agent by locating **Teamcenter Security Services Session Agent** in the list of installed programs on the machine.

# 8. Deploying localized versions of Teamcenter

## Deploying rich client localizations

### Deploy rich client localizations

If you change the strings of a localized rich client user interface, you must convert the files to Unicode and regenerate the Java archive (JAR) file.

To identify the localized user interface files you need, look for the language and country identifier added to the base resource file. For example, for the **aif\_locale.properties** English resource file, which must remain in English, the equivalent Japanese file is named **aif\_locale\_ja\_JP.properties**.

Convert native **.properties** files to Unicode as follows:

1. Copy the base file to a temporary file name, for example, from **aif\_locale.properties** to **aif\_locale\_temp.properties**.
2. Edit the **base\_locale\_temp.properties** file, modifying the values to the correct native language.
3. Save the file.
4. Run the **native2ascii** utility against the temporary properties file to convert it to a Unicode properties file.

The **native2ascii** utility is in the **\bin** directory of Java SDK 1.4.

For more information, access the following URL:

<http://download.oracle.com>

For example, to convert the properties file from Japanese to Unicode, enter the following command from the command line:

```
native2ascii -encoding SJIS aif_locale_temp.properties aif_locale_ja_JP.properties
```

The final locale-specific properties file or the output of the **native2ascii** file must have the **base\_locale\_locale-id\_language-id.properties** file format.

The rich client finds the value of a key in the following order:

**BASE\_user.properties**

**BASE\_locale-ID\_language-ID.properties**  
**BASE\_locale.properties**  
**BASE.properties**

5. Recompile the JAR file.
6. Install fonts if necessary.

For information about fonts, see the Oracle Java web site.

For more information about converting files to Unicode, see the Unicode Consortium web site:

<http://www.unicode.org/>

### Display Siemens Digital Industries Software-provided rich client localizations

To display a Siemens Digital Industries Software-provided localized rich client user interface, set the locale of the client workstation to one of the Siemens Digital Industries Software-provided locales. No other steps are required.

In addition to English, Siemens Digital Industries Software provides the Teamcenter rich client user interface localized for the following languages:

- Chinese (Simplified)
- Chinese (Traditional)
- Czech
- French
- German
- Italian
- Japanese
- Korean
- Polish
- Portuguese (Brazilian)
- Russian
- Spanish

### Updating rich client localized text

If you change the strings of a localized rich client user interface, you must convert the files to Unicode and regenerate the Java archive (JAR) file.

To identify the localized user interface files you need, look for the language and country identifier added to the base resource file. For example, for the **aif\_locale.properties** English resource file, which must remain in English, the equivalent Japanese file is named **aif\_locale\_ja\_JP.properties**.

Convert native **.properties** files to Unicode as follows:

1. Copy the base file to a temporary file name, for example, from **aif\_locale.properties** to **aif\_locale\_temp.properties**.
2. Edit the **base\_locale\_temp.properties** file, modifying the values to the correct native language.
3. Save the file.
4. Run the **native2ascii** utility against the temporary properties file to convert it to a Unicode properties file.

The **native2ascii utility** is in the **\bin** directory of Java SDK 1.4.

For example, to convert the properties file from Japanese to Unicode, enter the following command from the command line:

```
native2ascii -encoding SJIS aif_locale_temp.properties aif_locale_ja_JP.properties
```

The final locale-specific properties file or the output of the **native2ascii** file must have the **base\_locale\_locale-id\_language-id.properties** file format.

The rich client finds the value of a key in the following order:

```
BASE_user.properties
BASE_locale-ID_language-ID.properties
BASE_locale.properties
BASE.properties
```

5. Recompile the JAR file.
6. Install fonts if necessary.

For information about fonts, see the Oracle Java web site.

For more information about converting files to Unicode, see the Unicode Consortium web site:

<http://www.unicode.org/>

## Configuring client display language

### Choose a display language for the rich client

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

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.

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/start_portal -nl locale-code
```

Replace *TC\_ROOT* with the Teamcenter home directory, and replace *locale-code* with the desired locale code .

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

```
/tc/rac/start_portal -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 (**\$HOME/Teamcenter<sup>1</sup>**).

If you find that Asian multibyte characters do not display correctly when you start the rich client, set your system font to a font that supports Asian multibyte characters. For example, on Windows systems other than Windows 10, the **Arial Unicode MS** font can be set to **Message Box** to correct this problem.

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

**Caution:**

If you use the Lifecycle Visualization embedded viewer, do *not* use the **-nl** argument when you launch the rich client.

For the embedded viewer to work properly, the operating system locale and the rich client runtime locale must match. The **-nl** argument overrides the Java locale and can cause incorrect behavior in the embedded viewer.

## Add multibyte character support in an English rich client

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

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

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

---

<sup>1</sup> **\$HOME** is your user home directory.

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

```
UseDefaultSwingFonts=true
```


4. Save the file and exit the text editor.
5. Change to the **rac\registry** directory.
6. Run the **genregxml.bat** utility to register the change.

When you run Teamcenter in a multibyte environment, make sure the **TC\_XML\_ENCODING** environment variable is set to **UTF-8** and the **UGII\_UTF8\_MODE** environment variable is set to **1**.



# 9. Upgrading Teamcenter clients

## Upgrading a two-tier rich client

Upgrade a two-tier rich client using Teamcenter Environment Manager (TEM). Depending on the features in your configuration, TEM may display additional panels that are not described in the following steps. For help with any panel in TEM, click the help button .

If you use Teamcenter Integration for NX, when you upgrade to a new version of NX, uninstall the **NX Rich Client Integration** feature in TEM, and then reinstall this feature after upgrade, specifying the path to the new NX installation in the **NX Install Location** box in TEM.

1. Specify the path to the required Java 64-bit Runtime Environment (JRE) by setting the **JRE64\_HOME** environment variable on your host.
2. Start Teamcenter Environment Manager (TEM) by navigating to the root directory of the Teamcenter 2412 software kit and running **tem.bat** (Windows systems) or **tem.sh** (Linux systems).

On Windows systems, right-click the **tem.bat** program icon and choose **Run as administrator**.

Note:

When you upgrade to Teamcenter 2412, the **TcRS Multisite Enablement** feature is installed. This enables multisite collaboration for OOTB objects between Teamcenter and Teamcenter Rapid Start.

3. Proceed to the **Welcome to Teamcenter** panel and click **Teamcenter**.
4. In the **Install / Upgrade Options** panel, select **Upgrade**.
5. Complete the **Media Locations** panel.
  - The Teamcenter release from which you launched TEM is listed in the **Update Location** list.
  - In the **Update Location** list, click **Browse** to add the location of any patches to install. You must include all releases installed in your production environment.

TEM applies updates in the order you specify. If updates contain different versions of the same software component, the update closest to the bottom of the list takes precedence. To change the order in which updates are applied, select an update in the list and click **Shift Up** or **Shift Down**.
6. In the **Old Application Root** panel, enter the path to the root directory of the two-tier rich client to be upgraded.

7. In the **Old Configuration** panel, select the configuration that contains the two-tier rich client you want to upgrade.
8. In the **Configuration** panel, type an ID and a description for the new rich client configuration.
9. Proceed to the **New Application Root** panel. In the **New Application Root Directory** box, enter the new application root in which to install the upgraded two-tier rich client.
10. In the **2-tier server settings** panel, specify values required for the rich client to access your Teamcenter server. Make sure that the **TC\_DATA** value points to the *TC\_DATA* directory for your upgraded corporate server.
11. In the **File Client Cache (FCC)** panel, specify FMS client cache (FCC) settings.

Value	Description
<b>Use current FCC</b>	Select this option if you want to keep your existing FCC location.
<b>Use new FCC</b>	Select this option if you want to use the proposed new FCC location.

TEM sets the **FMS\_HOME** environment variable on this host to point to the selected location.

To specify advanced settings for Teamcenter client communication system (TCCS), click **Advanced**.

In current versions of Teamcenter, FMS supports UTF-8 encoding. Client applications can use existing 8-bit encoding (native), UTF-8 encoding (8-bit Unicode) or Unicode wide character (**wchar**) APIs. The UTF-8 and Unicode (**wchar**) FCC and FSC and UTF-8 APIs operate consistently with any client locale or native encoding. After a client application migrates to the new Unicode APIs, the native encodings of the FCC and FSC no longer need to match that of the Unicode client application.

12. In the **FCC Parents** panel, specify settings for the parent FMS server caches (FSCs) used by the FMS client cache (FCC). FSCs are used in the priority you specify.

The **FSC assignment mode** box specifies how you want to assign FSCs.

To add an FSC to the list, click **Add**. TEM adds a row to the table of FSC values. Double-click the **Protocol**, **Host**, **Port**, or **Priority** boxes to enter values.

To modify a value in the table, double-click the box and enter the new value.

To remove an FSC from the table, select the row and click **Delete**.

13. In the **Rich Client Settings** panel, specify settings for online help access.

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

14. In the **Confirmation** panel, review your selections. If you need to make a change, click **Back**. When you are ready to begin upgrade, click **Start**.


The **Upgrade** panel displays the status of the upgrade.

15. If the upgrade is successful, close TEM.

If the upgrade is not successful, click **Navigate Logs** to open the upgrade log viewer.

## Upgrade a four-tier rich client

Note:

- Depending on the features in your configuration, TEM may display additional panels that are not described in the following procedures.
- If you use Teamcenter Integration for NX, when you upgrade to a new version of NX, uninstall the **NX Rich Client Integration** feature in TEM, and then reinstall this feature after upgrade, specifying the path to the new NX installation in the **NX Install Location** box in TEM.
- For help with any panel in TEM, click the help button .

1. Specify the path to the required Java 64-bit Runtime Environment (JRE) by setting the **JRE64\_HOME** environment variable on your host.
2. Start Teamcenter Environment Manager (TEM) by navigating to the root directory of the Teamcenter 2412 software kit and running **tem.bat** (Windows systems) or **tem.sh** (Linux systems).

On Windows systems, right-click the **tem.bat** program icon and choose **Run as administrator**.

Note:

When you upgrade to Teamcenter 2412, the **TcRS Multisite Enablement** feature is installed. This enables multisite collaboration for OOTB objects between Teamcenter and Teamcenter Rapid Start.

3. Proceed to the **Welcome to Teamcenter** panel and click **Teamcenter**.
4. In the **Install / Upgrade Options** panel, select **Upgrade**.
5. Complete the **Media Locations** panel.
  - The Teamcenter release from which you launched TEM is listed in the **Update Location** list
  - In the **Update Location** list, click **Browse** to add the location of the location of any patches to install. You must include all releases installed in your production environment.

TEM applies updates in the order you specify. If updates contain different versions of the same software component, the update closest to the bottom of the list takes precedence. To change the order in which updates are applied, select an update in the list and click **Shift Up** or **Shift Down**.

6. In the **Old Application Root** panel, enter the path to the root directory of the four-tier rich client to be upgraded.
7. In the **Old Configuration** panel, select the configuration that contains the four-tier rich client you want to upgrade.
8. In the **Configuration** panel, type an ID and a description for the configuration.
9. Proceed to the **New Application Root** panel. In the **New Application Root Directory** box, enter the new application root in which to install the upgraded four-tier rich client.
10. Proceed to the **File Client Cache (FCC)** panel and specify FMS client cache (FCC) settings.

Value	Description
<b>Use current FCC</b>	Select this option if you want to keep your existing FCC location.
<b>Use new FCC</b>	Select this option if you want to use the proposed new FCC location.

TEM sets the **FMS\_HOME** environment variable on this host to point to the selected location.

To specify advanced settings for Teamcenter client communication system (TCCS), click **Advanced**.

In current versions of Teamcenter, FMS supports UTF-8 encoding. Client applications can use existing 8-bit encoding (native), UTF-8 encoding (8-bit Unicode) or Unicode wide character (**wchar**) APIs. The UTF-8 and Unicode (**wchar**) FCC and FSC and UTF-8 APIs operate consistently with any client locale or native encoding. After a client application migrates to the new Unicode APIs, the native encodings of the FCC and FSC no longer need to match that of the Unicode client application.

11. In the **FCC Parents** panel, specify settings for the parent FMS server caches (FSCs) used by the FMS client cache (FCC). FSCs are used in the priority you specify.

The **FSC assignment mode** box specifies how you want to assign FSCs.

To add an FSC to the list, click **Add**. TEM adds a row to the table of FSC values. Double-click the **Protocol**, **Host**, **Port**, or **Priority** boxes to enter values.

To modify a value in the table, double-click the box and enter the new value.

To remove an FSC from the table, select the row and click **Delete**.

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

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

13. In the **Rich Client Settings** panel, specify settings for online help access.

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

14. In the **Confirmation** panel, review your selections. If you need to make a change, click **Back**. When you are ready to begin upgrade, click **Start**.

The **Upgrade** panel displays the status of the upgrade.

15. If the upgrade is successful, close TEM.

If the upgrade is not successful, click **Navigate Logs** to open the upgrade log viewer.



# A. Troubleshooting

## Troubleshooting rich client installation

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

Problem	Possible cause	Solution
Embedded visualization fails to launch	<p>The versions of the <b>singleEmbeddedViewer.jar</b> file in the rich client and lifecycle visualization locations do not match. The rich client may display an error message similar to the following:</p> <pre>The SingleEmbeddedViewer.jar file, rich-client-path, does not match the SingleEmbeddedViewer.jar, lifecycle-visualization-path ... Embedded Visualization will be disabled until this inconsistency is resolved.</pre>	<p>Make sure the version of your Lifecycle Visualization software kit matches the version for your Teamcenter software kit.</p> <ul style="list-style-type: none"><li>• If the versions do not match, download and install the correct version of Lifecycle Visualization.</li><li>• If the versions match, run the Teamcenter installation tool (TEM or Deployment Center) and install one of the following applications:<ul style="list-style-type: none"><li>• <b>Teamcenter Visualization (Embedded) for Rich Client</b></li><li>• <b>Teamcenter Visualization (Stand-alone) for Rich Client</b></li></ul></li></ul> <p>This ensures the correct version of the <b>SingleEmbeddedViewer.jar</b> file is installed.</p>
TEM does not start, reports JRE not found.	JRE path is not set in the system environment.	<p><b>Set the JRE_HOME or JRE64_HOME environment variable</b> to specify the path to the required Java Runtime Environment (JRE).</p>

**Note:**

The **JRE\_HOME** or **JRE64\_HOME** environment variables are not used by TEM in maintenance mode.

Problem	Possible cause	Solution
	JRE path is set incorrectly in the system environment.	<p>Make sure the path specified in the <b>JRE_HOME</b> or <b>JRE64_HOME environment variable</b> is correct.</p> <div style="border: 1px solid black; padding: 5px;"> <p>Note:</p> <p>The <b>JRE_HOME</b> or <b>JRE64_HOME</b> environment variables are not used by TEM in maintenance mode.</p> </div>
	The specified JRE has been removed from the system.	<p>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 <b>JRE_HOME</b> or <b>JRE64_HOME</b> is set correctly.</p> <p>To resolve this problem, perform the following steps.</p> <ol style="list-style-type: none"> <li>1. Open the following file in a plain text editor: <p style="text-align: center;"><b><i>TC_ROOT/install/tem_init.sh</i></b></p> </li> <li>2. Locate the following line in the file: <p style="text-align: center;"><i>set TC_JRE_HOME=jre_location</i></p> </li> <li>3. Replace <i>jre_location</i> with the path to the new JRE.</li> <li>4. Save and close the file.</li> <li>5. <b>Migrate Teamcenter to the new JRE.</b></li> </ol> <p>To avoid this problem in the future, do not remove your previous JRE until after you complete migrating Teamcenter to the new JRE.</p>
Teamcenter displays an error message when you attempt to access Teamcenter online help	Online help is not configured correctly for the rich client.	Configure online help access for the rich client.
Relogon to a four-tier rich client is slow.	If the Teamcenter enterprise tier runs on a Windows server host with a firewall	Possible resolutions include disabling the firewall and configuring the firewall not to suppress TCP connection reset ( <b>RST</b> ) packets in response

Problem	Possible cause	Solution
	that silently ignores <b>TCP SYN</b> messages to ports that are not open, there can be a significant delay (20-40 seconds) in Teamcenter request processing in certain cases. In particular, a delay is likely if a user logs off and then logs back on within a short time period or if a user's Teamcenter server has timed out and the client reconnects. Trend Micro Personal Firewall and the stealth mode of Windows Firewall are known to exhibit this behavior.	to connection attempts to closed ports. A workaround for the rich client is to turn off SOA shared sessions (set <b>shareSession=false</b> in the <b>site_specific.properties</b> file).

## Resolving rich client display problems

The Teamcenter rich client uses the SWT browser widget to display HTML documents. When you launch the Teamcenter rich client, if any of the following problems occur, you must correctly configure your system for the SWT browser:

- **Application tooltips do not display**

When you point to an application button in left-hand navigation pane, the following error is shown in the console or in the Teamcenter rich client log:

```
org.eclipse.swt.SWTError: No more handles
[Unknown Mozilla path (MOZILLA_FIVE_HOME not set)]
```

- **Rich client crashes**

When you point to an application button multiple times, the following error message is displayed or reported in the Teamcenter rich client log:

```
org.eclipse.core.runtime - org.eclipse.ui - 0 - Unhandled event loop
exception
org.eclipse.swt.SWTError: XPCOM error 0x80004005 at
org.eclipse.swt.browser.Mozilla.error(Mozilla.java:2642) at
org.eclipse.swt.browser.Mozilla.initXULRunner(Mozilla.java:2608) at
org.eclipse.swt.browser.Mozilla.create(Mozilla.java:684) at
org.eclipse.swt.browser.Browser.<init>(Browser.java:99)
```

- **Java error when using Date widget**

When using the date selection widget (jQuery Datepicker) in the My Teamcenter application, the system displays the following error:

```
callHost(firstDay) threw external.callJava is not a function
```

To resolve these problems, see the [instructions for running the SWT browser within Eclipse on Linux](#). Then, configure the XULRunner run-time engine using the appropriate steps for your platform:

### Red Hat Linux

1. Verify XULRunner is installed:

```
which xulrunner
```

2. From the output of the **which xulrunner** command, find the absolute path to xulrunner. The target path must contain the **xulrunner** executable and the **libxpcor.so** library.

If the command returns **/usr/bin/xulrunner** and this path does not contain the necessary XULRunner files, the path may be a soft link to **/etc/alternatives/xulrunner**. Check that path for the necessary XULRunner files.

3. If XULRunner is not installed, install it:
  - a. Download the latest XULRunner ESR 64-bit with root privileges (using the **sudo** command).
  - b. Expand the compressed file into a local directory (for example, **/usr/local/xulrunner\_new**) with root privileges (using the **sudo** command). Make sure non-root users have read and execute privileges on the host.
4. Update the rich client launch file.
  - a. Open the **start\_portal.sh** file in a plain text editor.
  - b. Locate the following line:

```
-vmargs -Xmx%VM_XMX% -XX:MaxPermSize=128m
```

Insert the following lines after this line:

```
-Dorg.eclipse.swt.browser.XULRunnerPath=xulrunner-path
-Dorg.eclipse.swt.browser.DefaultType=Mozilla
```

For example:

```
-Dorg.eclipse.swt.browser.XULRunnerPath=/usr/local/xulrunner_new/
xulrunner
-Dorg.eclipse.swt.browser.DefaultType=Mozilla
```

- c. Save the file.
5. Delete the client cache and restart the Teamcenter rich client.

## SUSE Linux 11

1. Verify XULRunner 1.9.2 is installed:

```
which xulrunner
```

2. From the output of the **which xulrunner** command, find the absolute path to XULRunner. The target path must contain the **xulrunner** executable and the **libxpcom.so** library.

If the command returns **/usr/bin/xulrunner** and this path does not contain the necessary XULRunner files, the path may be a soft link to **/etc/alternatives/xulrunner**. Check that path for the necessary XULRunner files.

3. If XULRunner 1.9.2 is not installed, install it:

```
sudo /sbin/yast -i mozilla-xulrunner192
```

**Note:**

XULRunner 1.9.2 is included in SUSE Linux 11.

4. Update the rich client launch file.
  - a. Open the **start\_portal.sh** file in a plain text editor.
  - b. Locate the following line:

```
-vmargs -Xmx%VM_XMX% -XX:MaxPermSize=128m
```

Insert the following lines after this line:

```
-Dorg.eclipse.swt.browser.XULRunnerPath=xulrunner-path
-Dorg.eclipse.swt.browser.DefaultType=Mozilla
```

For example:

```
-Dorg.eclipse.swt.browser.XULRunnerPath=/usr/local/xulrunner_new/
xulrunner
-Dorg.eclipse.swt.browser.DefaultType=Mozilla
```

- c. Save the file.
5. Delete the client cache and restart the Teamcenter rich client.

## SUSE Linux 12

1. Verify XULRunner 1.9.2 is installed:

```
which xulrunner
```

2. From the output of the **which xulrunner** command, find the absolute path to XULRunner. The target path must contain the **xulrunner** executable and the **libxpcor.so** library.

If the command returns **/usr/bin/xulrunner** and this path does not contain the necessary XULRunner files, the path may be a soft link to **/etc/alternatives/xulrunner**. Check that path for the necessary XULRunner files.

3. If XULRunner 1.9.2 is not installed, install it:
  - a. Download the XULRunner 1.9.2.13 (64-bit) with root privileges (using the **sudo** command).
  - b. Expand the compressed file into a local directory (for example, **/usr/local/xulrunner\_new**) with root privileges (using the **sudo** command). Make sure non-root users have read and execute privileges on the host.
4. Update the rich client launch file.
  - a. Open the **start\_portal.sh** file in a plain text editor.
  - b. Locate the following line:

```
-vmargs -Xmx%VM_XMX% -XX:MaxPermSize=128m
```

Insert the following lines after this line:

```
-Dorg.eclipse.swt.browser.XULRunnerPath=xulrunner-path
-Dorg.eclipse.swt.browser.DefaultType=Mozilla
```

For example:

```
-Dorg.eclipse.swt.browser.XULRunnerPath=/usr/local/xulrunner_new/
xulrunner
-Dorg.eclipse.swt.browser.DefaultType=Mozilla
```

- c. Save the file.

5. Delete the client cache and restart the Teamcenter rich client.



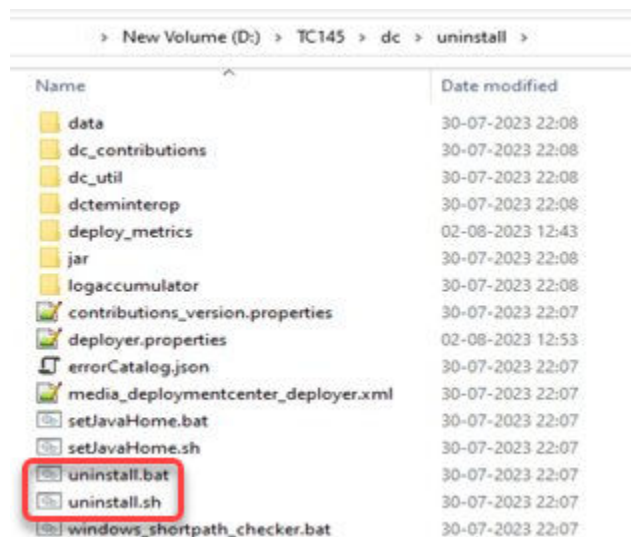
# B. Uninstalling Teamcenter

## Uninstall the rich client

### Uninstall the rich client using the uninstall script

If you install the rich client using Deployment Center and configure it for mass client deploy, Deployment Center generates an uninstall script when you generate deploy scripts.

The uninstall script is in the **dc\uninstall** folder in the deployment package for the mass client.



To uninstall a rich client, run this script using the following command:

```
uninstall.bat -uninstall
```

If you want to test the uninstall script to identify potential problems, you can perform a dry run of the uninstall:

```
uninstall.bat -uninstall -dryRun
```

### Uninstall the rich client using TEM

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

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

1. Log on to the operating system using the user account under which you installed Teamcenter.
2. Start Teamcenter Environment Manager (TEM):
  - a. Change to the **install** directory in the Teamcenter application root directory for your Teamcenter installation.
  - b. Run the **tem.sh** script.
3. In the **Configuration Maintenance** panel, select **Remove Configuration (uninstall)**, then click **Next**.
4. In the **Old Configuration** panel, select the configuration you want to remove, then click **Next**.
5. In the **Uninstall** panel, select **Yes** to confirm that you want to uninstall the configuration. Click **Next**.
6. In the **Uninstall Teamcenter** panel, select the **Advanced Uninstall Options** check box if you want to view additional uninstall options. Otherwise, click **Next**.
7. In the **Confirmation** panel, click **Start** to begin the uninstallation.

## Uninstall 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. Change to the **bin** directory in the TCCS installation directory.
  - b. Type the following command to stop the FCC process:

```
fccstat -stop
```

2. Change to the **\_uninst** directory in the TCCS installation directory.
3. Type the following command:

```
uninstaller.bin
```

This launches the TCCS uninstallation wizard. Follow the instructions in the wizard to uninstall TCCS.

4. Log off and log back on to the system to unset the **FMS\_HOME** environment variable.