

TCI Release 3.15
Installation Manual

T Systems

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T-Systems International GmbH
Business Unit Product Lifecycle Management
Fasanenweg 5
70771 Leinfelden-Echterdingen
Germany

Contacts

web: http://www.cmi-support.com

email: cmi_support@t-systems.com

phone: +49 (0) 40 30600-5544

Brief details

Installation manual for TCI.

This guide describes the installation of TCI.

Before using this guide, be sure you understand:

- the administration of 3DEXPERIENCE,
- the administration of Teamcenter.

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3DEXPERIENCE is a registered trademark of Dassault Systèmes.

Teamcenter is a registered trademark of Siemens Digital Industries Software.

Oracle is a registered trademark of Oracle Corporation.

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1 Overview

1.1 System and Software Requirements

TCI Installation on the following minimum operation systems and software prerequisites:

- Windows Server 2016
- Java runtime environment 21 for Windows x64
- Apache Tomcat 9.0.x

For the file cache, at least 500GB of disk space are recommended.

Each 3DEXPERIENCE batch server must have a graphics card, please consult the Dassault Systèmes recommendations:

https://media.3ds.com/support/certified_hardware/Windows_11_64-bit.html

The following systems are supported:

- 3DEXPERIENCE R2023x
- 3DEXPERIENCE R2024x
- 3DEXPERIENCE R2025x
- 3DEXPERIENCE R2026x
- 3DEXPERIENCE Public Cloud
- Teamcenter 12 (4-tier)
- Teamcenter 13 (4-tier)
- Teamcenter 14 (4-tier)
- Teamcenter 2312 (4-tier)
- Teamcenter 2406 (4-tier)
- Teamcenter 2412 (4-tier)
- Teamcenter 2506 (4-tier)
- Teamcenter 2512 (4-tier)
- Teamcenter 2606 (4-tier)
- Teamcenter Active Workspace 6.2
- Teamcenter Active Workspace 6.3
- Teamcenter Active Workspace 2312
- Teamcenter Active Workspace 2406
- Teamcenter Active Workspace 2412
- Teamcenter Active Workspace 2506

- Teamcenter Active Workspace 2512
- Teamcenter Active Workspace 2606

The following DBMS are supported:

- Oracle Database 11g Release 2 and above
- H2 DB 1.4
- MS SQL Server 2012 and above

1.1.1 3DEXPERIENCE licenses and user rights

Required licenses depend on use case and 3DEXPERIENCE technology used.

It is recommended to **not** assign an MDG or similar license to the TCI 3DEXPERIENCE user. This allows you to use the same user for batches on multiple CAD hosts for scalability under Dassault Systèmes licensing restrictions.

1.1.1.1 On Premise: licenses

Product	Trigram
Collaborative Business & Industry Innovation, includes: CSV (Platform Contributor) IFW (Platform Member)	PCS
Engineering Adapter for X-PDM	MUX (not required for XPDM import with POWER'BY) A mux license is required for each engineering user.
Engineering Data Exchange Manager	EXH (not required for XPDM import with POWER'BY)
Optional	
Product Manager	PDM (for Configuration / Variant Management) (required for authoring only)
Collaborative Designer for CATIA V5	UE5 (for CATIA V5 POWER'BY import)
Collaborative Designer for NX	UDN (for NX POWER'BY import)
Conversion Data Integrator	FO* (for XCAD conversion of specific format, e.g. FOJ for JT support)

Table 1: Required 3DEXPERIENCE licenses in On Premise environment.

1.1.1.2 On Premise: User rights

1.1.1.2.1 3DEXPERIENCE 2024x and later

The 3DEXPERIENCE user executing the import and export operations needs to have Owner role assigned in the Collaborative Spaces to / from which data is transferred.

The Owner role must be enabled to do XPDM exports and imports, using MQL:

```
modify command vplm::EXPORT add user VPLMProjectAdministrator;
```

The user should **not** have admin privileges.

1.1.1.2.2 3DEXPERIENCE 2023x or lower:

The 3DEXPERIENCE user executing the import and export operations needs to have Leader role assigned in the Collaborative Spaces to / from which data is transferred.

The user needs business and system administrator privileges as required by Dassault Systèmes. These rights can only be assigned using MQL:

```
modify person username access all admin all type system type business;
```

1.1.1.3 On Public Cloud: licenses

Required licenses depend on use case and 3DEXPERIENCE technology used.

Product	Trigram
Collaborative Business & Industry Innovator Package: IFW-OC (Collaborative Business Innovator) CSV-OC (Collaborative Industry Innovator)	PCS-OC
Enterprise IP Exchange Manager	XXH-OC (only for EIF STEP export/import)
Enterprise IP Exchange Package	XXK-OC (only for EIF STEP export)
Engineering Data Exchange Manager	EXH-OC (only for file batch export)

Table 2: Required 3DEXPERIENCE licenses in Public Cloud environment

1.1.1.4 CATIA V5 CAD Pre- and Postprocessing

Batch processing of native CAD file data may be required for 3DEXPERIENCE import (preprocessing) and 3DEXPERIENCE export (postprocessing). A CATIA V5 license for the respective CAD system e.g. for example HD2, M3D, PX1 (optional), EHI (optional for electric data support).

1.1.2 Teamcenter licenses and user rights

TCI requires a dedicated user in Teamcenter. User rights depend on the use case – i..e. if data will be created in Teamcenter, an authoring license is necessary, and the user must be member of all groups that TCI is expected to store data for. Usually, the dcproxy user is a good template.

Specific licenses may be required for advanced functionality. Eg. to be able to create configuration context, the necessary Product Configurator Author license is required.

1.1.3 Software Requirements for Oracle Database

Copy the OJBDC driver matching your database version (e.g. ojdbc8.jar) from your Oracle installation or download it from Oracle website. Place the driver in the lib folder of the Tomcat that runs TCI.

The recommended database character set is **`al32utf8`**.

1.1.4 Software Requirements for MS SQL Server

Download the JDBC driver for your database and Java runtime version from Microsoft (e.g. mssql-jdbc-11.2.1.jre8.jar) and place the .jar file in the lib folder of the Tomcat that runs TCI.

MS SQL Server must be configured with TCP connections enabled.

1.2 Shipment

The software delivery contains the following parts:

- TCI
- TCI Converter Server (XCI_CS)
- TCI File Cache (XCI_FC)
- TCI Teamcenter Rich Client Plugin (TCI_TC_UI)
- TCI Teamcenter Active Workspace Client Plugin (TCI_AWC_UI)
- TCI 3DEXPERIENCE Rich Client Extension (TCI_3DX_UI)
- XCI 3DEXPERIENCE Batch (XCI_3DX_BATCH)
- COM/ReconV5 (COMReconV5)
- Licman21
- TCI documentation

The product makes use of 3rd Party and Open Source Software. A list of the used products and its licenses is distributed with the software.

2 Infrastructure Overview

2.1 Overview

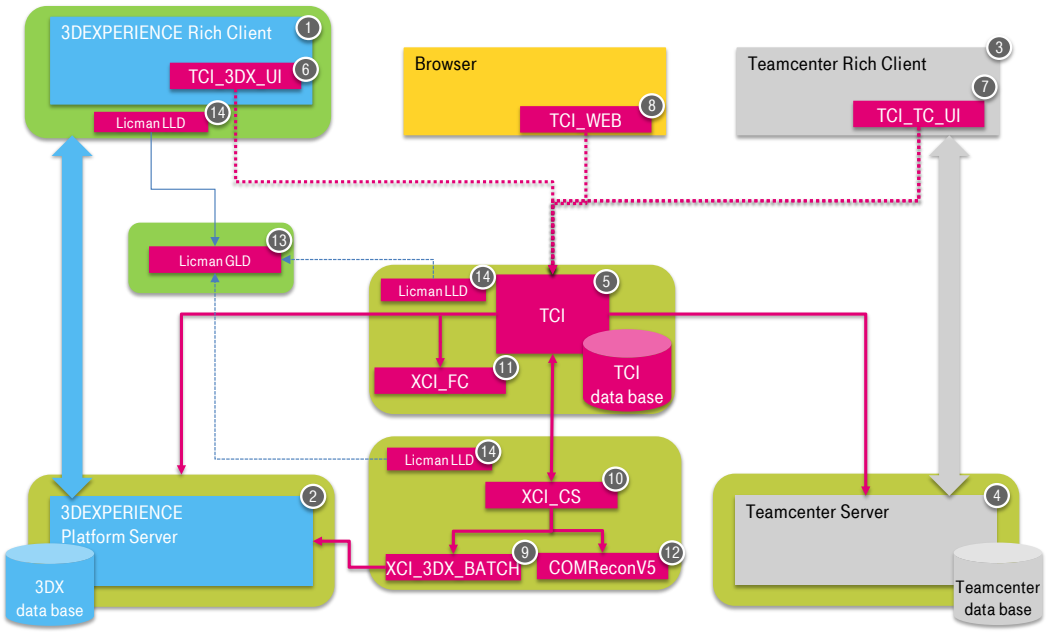


Figure 1: TCI Infrastructure Overview

1. 3DEXPERIENCE Rich Client
2. 3DEXPERIENCE Server
3. Teamcenter Rich Client
4. Teamcenter Server
5. TCI Server
6. TCI 3DEXPERIENCE Rich Client Extension
7. TCI Teamcenter Rich Client Plugin
8. TCI Web Client
9. XCI 3DEXPERIENCE Batch
10. TCI Converter Server (XCI_CS)
11. TCI File Cache (XCI_FC)
12. CATIA V5 CAD data processing (COM/ReconV5) Batch
13. LICMAN Server (GLD)
14. LICMAN Client (LLD)

2.2 Infrastructure Remarks

The XCI 3DEXPERIENCE Batch must be installed at each TCI Converter Server that is used to run 3DEXPERIENCE utilities. A 3DEXPERIENCE rich client environment (CATIA V6) is a prerequisite.

If CATIA V5 Preprocessing or CATIA V5 Postprocessing is enabled, the COMReconV5 package must be installed at the configured hosts. A CATIA V5 client environment with the same CATIA V5 version is a prerequisite.

3 Installing TCI

3.1 Prerequisites

3.1.1 Enable secure communication via https

You can skip this step if no secure communication (HTTP) is used.

It is recommended to setup TCI application servers with HTTPS to secure communication between TCI components.

For secure communication (HTTPS) with the connected servers (Teamcenter and 3DEXPERIENCE) make sure that the necessary certificates are installed at the TCI host. The certificates must be copied from the Teamcenter server and the 3DEXPERIENCE server respectively and imported into the Java installation.

Open a command shell as administrator and check or set the proper Java home directory:

Use the keytool.exe in your Java installation. The default password is “changeit”.

```
set JRE_HOME=<yourJavaDir>
"%JRE_HOME%\bin\keytool.exe" -import -keystore
"%JRE_HOME%\lib\security\cacerts" -storepass changeit -noprompt -
trustcacerts -alias <yourAlias> -file <yourFile.crt>
```

3.1.2 Teamcenter

The Teamcenter 4-tier server has been installed.

The following values will be used in the next steps:

Setting Name	Setting Value
Teamcenter 4-tier URL	https://my.tc-server.url:8080/tc

Table 3: Teamcenter settings

3.1.2.1 Teamcenter SOA Client

The Teamcenter SOA Client libraries of the file **soa_client.zip** of the Teamcenter installation package must be extracted to a directory, e.g. **C:\TC2312\soa_client**.

This directory will be called **<SOA_CLIENT>** in this document.

3.1.2.2 Teamcenter file handling

Teamcenter can use FileServerCache (FSC) or FileClientCache (FCC), see Teamcenter -> FileManagement settings.

For FileClientCache the Teamcenter TCCS package must be installed on the TCI server host, e.g. **C:\TC2312\tccs**. This directory will be called **<FMS_HOME>** in this document.

3.1.3 3DEXPERIENCE

3.1.3.1 Direct access to 3DEXPERIENCE server (On Premise)

TCI requires access to the 3DEXPERIENCE server. As a prerequisite the following libraries must be copied from the 3DEXPERIENCE server installation:

```
<3DEXPERIENCE install path>\3DSpace\win_b64\docs\javaserver\
  eMatrixServletRMI.jar
<3DEXPERIENCE install path>\3DSpace\win_b64\docs\javaserver\
  FcsClient.jar
```

to a directory on the TCI server host, for example **`C:\TCI\3dexp-lib`**. This directory will be called **`<3DEXP-LIB>`** in this document.

3.2 TCI setup

This section describes how you should install the TCI, XCI_FC, and XCI_CS web applications.

3.2.1 Setup TCI as web application

TCI will be deployed to a web application server.

TCI will be installed in a directory on the host machine. This directory will be called **`<TCI_INSTALL_DIR>`** in the following steps.

For example:

```
C:\TCI
```

The web application server Tomcat must be installed. We recommend installing Tomcat and other packages (e.g. XCI 3DEXPERIENCE Batch) in **`<TCI_INSTALL_DIR>`** to keep all components in one place.

For example, for Tomcat this is then:

```
C:\TCI\apache-tomcat-9.0.89.
```

The Tomcat installation directory will be called **`<CATALINA_HOME>`** in this document.

3.2.1.1 Package

Locate the package **`XCI_TC_<TC Version>_3DX_<3DX Version>-<TCI Version>.zip`** (for example **`XCI_TC_2312_3DX_2024x-3.11.0.0.01.zip`**) and unzip to temporary location.

In the next steps we will move and edit some of the delivered files.

3.2.1.2 XCI_HOME directory

Copy the XCI_HOME directory from the software package to **`<TCI_INSTALL_DIR>`** and remove the **`.sample`** from **`XCISettings.xml.sample`** and **`XCIAdminSettings.xml.sample`**.

This directory will be the main working directory for TCI. The settings files controls behavior of TCI.

3.2.1.3 Tomcat: Teamcenter and 3DEXPERIENCE libraries

The web application must have access to the Teamcenter and 3DEXPERIENCE libraries in the classpath (see sections 3.1.2.1 and 3.1.3.1). Therefore, the following lines must be added to the Tomcat configuration file **<CATALINA_HOME>/conf/context.xml** in the Resources section:

```
…
<Resources>
  <PostResources
      className="org.apache.catalina.webresources.DirResourceSet"
      base="<SOA_CLIENT>/java/libs"
      webAppMount="/WEB-INF/lib">
  </PostResources>
  <PostResources
      className="org.apache.catalina.webresources.DirResourceSet"
      base="<SOA_CLIENT>/java/libs/com.teamcenter.rac.external_2312"
      webAppMount="/WEB-INF/lib">
  </PostResources>
  <PostResources
      className="org.apache.catalina.webresources.JarResourceSet"
      base="<3DEXP-LIB>/eMatrixServletRMI.jar"
      webAppMount="/WEB-INF/classes">
  </PostResources>
  <PostResources
      className="org.apache.catalina.webresources.JarResourceSet"
      base="<3DEXP-LIB>/FcsClient.jar"
      webAppMount="/WEB-INF/classes">
  </PostResources>
</Resources>
…
```

Where **<3DEXP-LIB>** needs to be replaced by the absolute or relative path to the 3DEXPERIENCE library locations (see chapter 3.1.3.1). **<SOA_CLIENT>** is the location of the extracted JAR files from the Teamcenter SOA Client libraries distributed with Teamcenter (see chapter 3.1.2.1).

If TCI has been customized using the Java customization endpoints, please add additional entry pointing to the directory containing the customization .jar file.

```
<PostResources
      className="org.apache.catalina.webresources.DirResourceSet"
      base="<XCI_HOME>/custom"
      webAppMount="/WEB-INF/lib">
</PostResources>
```

3.2.1.4 Tomcat: database connection

TCI makes use of a database to store and keep track of required data. The used database must be configured using the resource definition of the application server. TCI will read the resource defined as **jdbc/xciDB**.

The resource must be configured at the Tomcat application server in **<CATALINA_HOME>/conf/context.xml**.

Database drivers should be copied to **<CATALINA_HOME>/lib.** See 1.1.3 for Oracle database and 1.1.4 for MS SQL Server.

If the resource is not defined at the application server, a local and file based H2DB will be created in the home directory.

Example resource definition for Oracle:

```
<Resource name="jdbc/xciDB"
          type="javax.sql.DataSource"
          auth="Container"
          driverClassName="oracle.jdbc.OracleDriver"
          maxTotal="100"
          maxIdle="10"
          maxWaitMillis="-1"
          url="jdbc:oracle:thin:@my.db-server-url.com:1521:orcl"
          username="XCI"
          password="XCI" />
```

Example resource definition for MS SQL:

```
<Resource name="jdbc/xciDB"
          type="javax.sql.DataSource"
          auth="Container"
          driverClassName="com.microsoft.sqlserver.jdbc.SQLServerDriver"
          maxTotal="100"
          maxIdle="10"
          maxWaitMillis="-1"
          url="jdbc:sqlserver://my.db-server-url.com\SQLEXPRESS;databaseName=XCI"
          username="XCI"
          password="XCI" />
```

Example resource definition for H2:

```
<Resource name="jdbc/xciDB"
          type="javax.sql.DataSource"
          auth="Container"
          driverClassName="org.h2.Driver"
          maxTotal="100"
          maxIdle="10"
          maxWaitMillis="-1"
          url="jdbc:h2:C:\XCI\XCI_HOME\xciDB\xciDB;AUTO_SERVER=TRUE"
          username="XCI"
```

```
        password="XCI" />
```

3.2.1.5 Tomcat: start script

Copy the sample start script **start-tomcat.bat.sample** from the software package to **<TCI_INSTALL_DIR>** and remove the **.sample** file extension. This script is used to start Tomcat.

Set the following environment variables in the start script. The **FMS_HOME** environment is needed only if TCI is configured to use FCC (see section 3.1.2.2).

Environment Variable	Example Value	Description
XCI_HOME	C:\TCI\XCI_HOME	XCI home directory
FMS_HOME	C:\TC2312\tccs	Teamcenter FMS home directory for using the FCC, not the FSC.
CATALINA_HOME	C:\TCI\apache-tomcat-9.0.89	Tomcat Catalina home directory
JRE_HOME	C:\Program Files\Java\jre-21	JRE home directory.
JAVA_OPTS	%JAVA_OPTS% -Djava.library.path=%FMS_HOME%;%FMS_HOME%/lib -Xms256m -Xmx2048m	Additional Java Options (-Djava.library.path only needed if TCI is configured with FCC)

Table 4: TCI web application environment variables

3.2.1.6 Deploy TCI web application

From the software package, copy the main application **XCI.war**, to the **webapps** directory of the web application server: **<CATALINA_HOME>\webapps**.

3.2.2 Setup XCI_FC as web application

The XCI_FC module provides a file cache for 3DEXPERIENCE export.

If 3DEXPERIENCE export file caching is configured, XCI_FC must be deployed to a web application server as described in the next steps.

3.2.2.1 Package

Locate the package **XCI_FC-<TCI Version>.webapp.zip** (for example **XCI_FC-3.9.0-01.zip**) and unzip to temporary location.

In the next steps we will move and edit some of the delivered files.

3.2.2.2 XCI_FC_HOME directory

Copy the XCI_FC_HOME directory from the software package to **<TCI_INSTALL_DIR>**.

This directory will be the main working directory for the file cache.

3.2.2.3 Tomcat: start script

If XCI_FC is deployed in the same Tomcat as TCI, then edit the Tomcat start script described in previous chapter and set the **XCI_FC_HOME** variable.

If XCI_FC is deployed in a different Tomcat, create the start script as described next.

Copy the sample start script **start-fc-tomcat.bat.sample** from the software package to **<TCI_INSTALL_DIR>** and remove the **.sample** file extension. This script is used to start Tomcat.

Set the following environment variables in the start script.

Environment Variable	Example Value	Description
XCI_FC_HOME	C:\TCI\XCI_FC_HOME	XCI_FC home directory
CATALINA_HOME	C:\TCI\apache-tomcat-9.0.89	Tomcat Catalina home directory
JRE_HOME	C:\Program Files\Java\jre-21	JRE home directory
JAVA_OPTS	%JAVA_OPTS% -Xms128m -Xmx512m	Additional Java Options

Table 5: XCI_FC web application environment variables

3.2.2.4 Deploy XCI_FC web application

From the XCI_FC software package, copy the main application **XCI_FC.war**, to the **webapps** directory of the web application server: **<CATALINA_HOME>\webapps**.

3.2.3 Setup XCI_CS as web application

The XCI_CS module is used to distribute batch processing loads like COMRecon or XCI 3DEXPERIENCE Batch to different hosts.

3.2.3.1 Package

Locate the package **XCI_CS-<TCI Version>.webapp.zip** (for example **XCI_CS-3.11.0.0.01. zip**) and unzip to temporary location.

In the next steps we will move and edit some of the delivered files.

3.2.3.2 XCI_CS_HOME directory

Copy the XCI_CS_HOME directory from the software package to **<TCI_INSTALL_DIR>.**

This directory will be the main working directory for the Converter Server.

3.2.3.3 Tomcat: start script

If XCI_CS is deployed in the same Tomcat as TCI, then edit the Tomcat start script described in previous chapter and set the **XCI_CS_HOME** variable.

If XCI_CS is deployed in a different Tomcat, create the start script as described next.

Copy the sample start script **`start-cs-tomcat.bat.sample`** from the software package to **`<TCI_INSTALL_DIR>`** and remove the **`.sample`** file extension. This script is used to start Tomcat.

Set the following environment variables in the start script.

Environment Variable	Example Value	Description
XCI_CS_HOME	C:\TCI\XCI_CS_HOME	XCI_CS home directory
CATALINA_HOME	C:\TCI\apache-tomcat-9.0.89	Tomcat Catalina home directory
JRE_HOME	C:\Program Files\Java\jre-21	JRE home directory
JAVA_OPTS	%JAVA_OPTS% -Xms128m -Xmx512m	Additional Java Options

Table 6: XCI_CS web application environment variables

3.2.3.4 Deploy XCI_CS web application

From the XCI_CS software package, copy the main application **`XCI_CS.war`**, to the **`webapps`** directory of the web application server: **`<CATALINA_HOME>\webapps`**.

4 Installing the COMReconV5 package

If V5ToV6Preprocessing or V6ToV5Postprocessing for CATIA V5 data is enabled, the COMReconV5 package must be installed.

4.1 Installation

The COMReconV5 package is delivered as a zip file (e.g. **`COMReconV5_R34.zip`**).

4.1.1 Unzip the COMReconV5 package

Unzip the package to disk (e.g. **`C:\TCI\COMReconV5_R34`**) at the TCI install host (where the TCI web application or conversion server is installed).

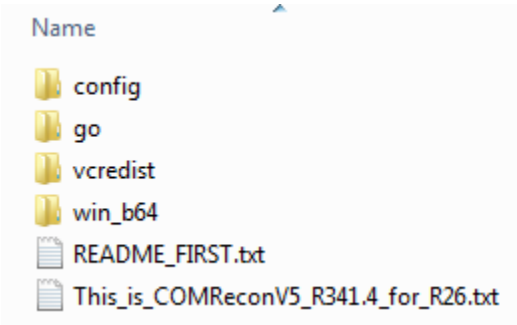


Figure 2: COMReconV5 package content

4.1.2 Create CATIA V5 environment file

Copy the CATIA V5 environment file to the config folder. Open the copied Environment file and enhance the PATH variable with the win_b64 folder as shown in the following example.

```
PATH=C:\TCI\COMReconV5_R34\win_b64;C:\Program Files\Dassault
Systemes\B34\win_b64\code\bin;…
```

4.1.3 Configuration

Then open the go\COMReconV5.bat file for edit and customize the four environment variables to your environment and save the file.

```
rem ------------------------------------------------------------------
rem Please customize following variables for your environment.
rem
rem Installation directory of COMReconV5.
rem Example: C:\TCI\COMReconV5_R34
set COMRECONV5_INSTALL_DIR=C:\TCI\COMReconV5_R34
rem
rem Installation directory of CATIA.
rem Example: C:\Program Files\Dassault Systemes\B34
set CATIA_BASEDIR=C:\Program Files\Dassault Systemes\B34
```

```
rem
rem Directory where to find CATIA env-files.
rem Example: C:\TSI\CATEnv
set CONVERTER_ENVDIR=C:\TCI\COMReconV5_R34\config
rem
rem Filename (without extension) that will be used by CATIA batch
client.
rem Example: COMReconV5_R34
set CONVERTER_ENVFILE=COMReconV5_R34
…
```

4.1.3.1 Option File in 3DEXPERIENCE Cloud import scenario

Settings for COMReconV5 are configured in two option files in the go subdirectory in the COMReconV5 installation. If data is imported into 3DEXPERIENCE Cloud, an additional option must be set tin the XCI_V5_V6.opt file for preprocessing V5 files before 3DEXPERIENCE import:

```
# import stepx file – cloud
# set the Name (title as partnumber in the V5 file
# the Importer uses the partnumber for the Title
-MetaDataAddtlPropsProduct=(Name::<Part Number>)
```

4.1.4 Install Microsoft Visual C++ Redistributable Packages

Login as user with administrative rights and install all the Microsoft Visual C++ Redistributable Packages from the vcredist folder.

5 Installing the COMReconNX package

If NX preprocessing for NX files is used, COMReconNX must be installed.

5.1 Installation

The COMReconNX package is delivered as a zip file (e.g. **`COMReconNX_R2306.zip`**).

5.1.1 Unzip the COMReconNX package

Unzip the package to disk (e.g. **`C:\TCI\COMReconNX_R2306`**) at the TCI install host (where the TCI web application or conversion server is installed).

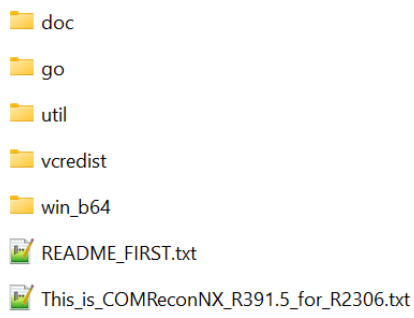


Figure 3: COMReconNX package content

5.2 Configuration

Then open the go\COMReconNX.bat file for edit and customize the 2 environment variables at the top of the file to your environment and save the file.

```
rem ------------------------------------------------------------------
rem Please customize following variables for your environment.
rem
rem Setup the path INSTALL_DIR to the COM/Recon install path
rem (This is the directory containing a 'README_FIRST.txt' file)
rem **** PLEASE AVOID BLANKS IN THIS INSTALLATION PATH ! ****
set INSTALL_DIR=
rem
rem Setup the NX installation path, typically like:
C:\Progra~1\Siemens\NX2306
rem IT IS HIGHLY RECOMMENDED TO HAVE NX INSTALLED IN A PATH NOT
CONTAINING BLANKS !
rem ------------------------------------------------------
set UGII_BASE_DIR=
set UGII_ENV_SCRIPT=%UGII_BASE_DIR%\UGII\ugiicmd.bat
rem
rem STOP EDIT HERE
rem ------------------------------------------------------
```

6 Installing the XCI 3DEXPERIENCE Batch

The XCI 3DEXPERIENCE Batch must be installed on any host that you configure to export or import from 3DEXPERIENCE.

As a prerequisite the 3DEXPERIENCE Rich Client needs to be installed.

The XCI 3DEXPERIENCE Batch utility requires licman21 as its license manager.

For detailed information about installation and configuration of the XCI 3DEXPERIENCE Batch after installation also see the Readme files in the doc directory of the installation.

6.1 Installation

You should perform the following steps with your 3DEXPERIENCE administrator.

Locate the downloaded archive file (**`XCI_3DX_BATCH_R[xxxxx]_V[xxx].zip`**). Extract the content of the archive file to a temporary location, e.g.

`"C:\temp\XCI_3DX_BATCH_R2024x_V3.11.0.0"`.

Inside the temporary installation location, locate the folder **`"XCI_3DX_BATCH_R[xxxxx]_V[xxx]\install\windows_64"`** for the installation.

Start the installation by double-clicking **`"Setup.exe"`** and follow the instructions. The 3DEXPERIENCE values will be pre-filled from the registry if possible.

In the installation directory the file **`Report.txt`** is stored. It describes where the customized 3DEXPERIENCE environment for the batch can be found.

Make sure that the %JAVA_HOME% in your 3DEXPERIENCE environment is set correctly and points to a valid Java runtime.

You should add the following best practice settings to the environment:

XPG_ACTIVATE_3DPART=1	activate the 3D Part support
XPG_ACTIVATE_NONCADDOC=1	activate the Non-CAD document support
XPG_ACTIVATE_MAPPED_REVISIONFAMILY=1	activate the mapped Revision Family support
XPG_ACTIVATE_DECOUPLINGEXPORT=1	activate variant and evolution effectivity export
DBDI_ActivatePnOandMaturity=1	Enable to set Maturity for applicative objects
ENABLE_DETAILED_REPORT=1	enable a detailed report
CATForceNotCertifiedGraphics=1	ignore outdated graphic card driver warning

OnPremise, only for 3DEXPERIENCE R2023x and lower:

TCIXpgPostProcess_SETMATURITYOFAPPCHILD=FORCE

6.2 Additional Configuration for Post Processing for XPDM (3DX OnPremise only)

Additional configuration steps are required if you import any files to 3DEXPERIENCE or export via XPDM.

6.2.1 Copy required library from the 3DEXPERIENCE environment

This is only needed if "Set Maturity of Rep Children", "Set Maturity of Rep" or "Add configured material" is configured.

Copy the file **eMatrixServletRMI.jar** to

```
...\XCI_3DX_BATCH_R<XXXX>_V<XXX>\win_b64\fromServer\docs\java
```

You can find this file on the 3DEXPERIENCE server host:

```
<3DEXPERIENCE installation directory>\server\win_b64\docs\java
```

In some cases, the following files in

```
...\XCI_3DX_BATCH_R<XXXX>_V<XXX>\win_b64\fromServer\code\bin
```

may have to be replaced with updated files from your 3DEXPERIENCE Server installation after installation of a 3DEXPERIENCE Fix Pack (you can check the installation with CheckServerConnection.bat):

- **mxUtil.dll**, **vgalaxy7k.dll** from **<3DEXPERIENCE installation directory>\studio\win_b64\code\bin**
- **eMatrixMqlU.dll** from **<3DEXPERIENCE installation directory>\adk\win_b64\code\bin**

6.2.2 Configuration of the TSI 3DEXPERIENCE xPDM Post Process behavior

TSI 3DEXPERIENCE xPDM Post Process comes with the configuration file

```
...\XCI_3DX_BATCH_R<XXXX>_V<XXX>\win_b64\reffiles\TCIXpgConfig.xml
```

The TCI Server URL must be configured in **TCIXpgConfig.xml** file. The **TCIXpgPostProcess_SERVERURL** attribute must point to the TCI installation:

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<TCIXpgConfig>
<Attribute name="TCIXpgPostProcess_SERVERURL"
     value="http://my.tci-integration-server.url:port/XCI"/>
</TCIXpgConfig>
```

The following connectivity information for the Enovia server must be provided is specific options are used (eg. **TCIXpgPostProcess_REPAIRINSTANCE=ON**):

Server URL of 3DEXPERIENCE server (https://enovia-server.url:port/3dspace)

```
TCIXpgPostProcess_ENOVIASERVERURL=<3DEXPERIENCE Server URL>
```

- It is mandatory to include the port in the URL. :443 for https and :80 for http if you did not choose a different port.

3DEXPERIENCE username

This 3DEXPERIENCE user has to be ENOVIA business and system administrator. You should use the same 3DEXPERIENCE user that is used for the XPDM import.

```
TCIXpgPostProcess_ENOVIAUSER=<3DEXPERIENCE username>
```

Encrypted 3DEXPERIENCE password

```
TCIXpgPostProcess_ENCRYPTEDENOVIAPASSWORD=<encrypted password>
```

3DEXPERIENCE Vault (optional)

```
TCIXpgPostProcess_ENOVIAVAULT=<3DEXPERIENCE Vault>
```

If 3DPassport is used to check the 3DEXPERIENCE credentials:

```
TCIXpgPostProcess_USE3DPASSPORT=ON
```

6.2.3 Encrypting the password for the TSI 3DEXPERIENCE xPDM Post Process

This step is only required if "Repair Instance" or "Set Maturity of Rep Children" is configured in the TSI 3DEXPERIENCE xPDM Post Process.

The TSI 3DEXPERIENCE xPDM Post Process needs a direct (MQL) login to the 3DEXPERIENCE server. To use the post-processing it is necessary to store the login information in the environment. As it is not allowed to store a plain password, TSI 3DEXPERIENCE xPDM Post Process uses an encrypted password.

Use the script "**EncryptPassword.bat**" to encrypt the 3DEXPERIENCE password. If you use the 3DEXPERIENCE environment file **<Your Path>\XCI_3DX_BATCH_<3DX-version>_<XCI-version>\config\XCI_3DX_BATCH_Env.txt** (created during the installation of this batch utility collection) you can just double click the batch file. If you use a different environment file you drag and drop your environment file on the script "EncryptPassword.bat", or use a command window:

```
C:\<Your Path>\XCI_3DX_BATCH_<3DX-version>_<XCI-
version>\config\EncryptPassword.bat <path>\<your env-file.txt>
```

You must encrypt the password using the same Windows OS user that runs the XPDM import/export (XPGClientBatch service, or TSI3DXBatch). The encrypted password can be used on different hosts, as long as the import uses the same Windows user.

You will be asked for the password to encrypt:

```
Encrypt 3DEXPERIENCE password
```

```
type password:
```

After typing in your password the encryption is executed:

```
starting encryption ...
Encrypting password: **************************************************
Encrypted  password: <26e5d4eencrpted331846533ppassworddcbe21975ssample>
Insert encrypted password in TCIXpgConfig.xml
Press any key to continue . . .
```

Insert the password in the configuration file TCIXpgConfig.xml.

6.2.4 Test the TSI 3DEXPERIENCE xPDM Post Process environment

This step is only required if "Repair Instance" or "Set Maturity of Rep Children" is configured in the TSI 3DEXPERIENCE xPDM Post Process!

Use the script "**CheckServerConnection.bat**" to test your installation.

If you use the 3DEXPERIENCE environment file **<Your Path>\TCI_3DX_XPP_<3DX-version>_<XCI-version>\config\XCI_3DX_BATCH_Env.txt** (created during the installation of this batch utility collection) you can just double click the batch file. If you use a different environment file you drag and drop your environment file on the script "**EncryptPassword.bat**", or use a command window:

```
C:\<Your Path>\XCI_3DX_BATCH_<3DX-version>_<XCI-
version>\config\EncryptPassword.bat <path>\<your env-file.txt>
```

You will get a warning if a needed library could not be loaded, or if one of the following settings is missing in the TCIXpgConfig.xml

- TCIXpgPostProcess_ENOVIASERVERURL
- TCIXpgPostProcess_ENOVIAUSER
- TCIXpgPostProcess_ENCRYPTEDENOVIAPASSWORD

If you get the message "login: Cannot get instance of matrix/db/Context", please check the following settings:

- wrong setting TCIXpgPostProcess_ENOVIASERVERURL
- wrong TCIXpgPostProcess_ENOVIAUSER / TCIXpgPostProcess_ENCRYPTEDENOVIAPASSWORD combination
- wrong / missing certificate (in case of https)
- wrong setting TCIXpgPostProcess_USE3DPASSPORT

This command also warns if the 3DEXPERIENCE user does not have the 3DEXPERIENCE privileges "system administrator" and "business administrator". These 3DEXPERIENCE privileges are required to repair an instance and to set the maturity of an imported object to a specified state:

```
TCIMQL Library build:   Mar 31 2016 16:18:16
3DEXPERIENCE server version:  3DEXPERIENCE R2015x HotFix 5
!!! User MigratUsr does not have required ENOVIA business privileges !!!
```

```
!!! User MigratUsr does not have required ENOVIA system privileges !!!
```

7 TCI configuration

This section covers initial configuration based on the .sample settings that are part of the software package. For a reference of available settings, please check the separate “Settings Reference Manual”.

7.1 Password encryption

Passwords and Login Tickets need to be configured in TCI settings for accessing Teamcenter and 3DEXPERIENCE or the TCI web client. Passwords can be stored encrypted or unencrypted.

To encrypt passwords, use the encryption utility provided in the TCI software package. The sample XCI_HOME folder from the software package contains an “encrypt” folder.

- generate-password-key.bat

  This will generate an encryption key which is used for password encryption and decryption. The key should be stored in the XCI_HOME folder. Access to the key should be limited.

  Update JAVA_HOME to your Java installation and KEY_OUTPUT_FOLDER to your XCI_HOME directory.

- encrypt.bat

  This script will use the generated encryption key and encrypt a password. The encrypted password is displayed in the command line window and can be copied to the TCI settings.

  Update JAVA_HOME to your Java installation and KEY_FILE to the previously generated key file.

7.2 Administration settings

In XCIAdminSettings.xml provide connection information for Teamcenter, 3DEXPERIENCE and any batch installations.

When connecting to 3DEXPERIENCE Cloud, use the .3dx-cloud.sample file as basis.

In Administration define whether Teamcenter uses an **`alphabetical`** (A, B, C, …) or **`numerical`** (1, 2, 3, …) revision scheme. This will be used for mapping revisions between Teamcenter and 3DEXPERIENCE. If Teamcenter has a custom revision scheme, a customization of TCI needs to be implemented to map revisions correctly.

```
<Administration>
  <PdmRevisionMapping>alphabetical</PdmRevisionMapping>
  <PdmDocumentRevisionMapping>alphabetical</PdmDocumentRevisionMapping>
</Administration>
```

In the Teamcenter section:

- 4-tier Teamcenter server URL

- User / Password / Group / Role credentials for the integration user
- if using FSC instead of FCC, enable FileManagement and add the FSC URL.

```
<Teamcenter>
  <Server>
    <Url>[http://tc-host:tc-port/tc]</Url>
    <Username>[tc-user]</Username>
    <Password plaintext="true">[tc-password]</Password>
    <Group>[tc-group]</Group>
    <Role>[tc-role]</Role>
  </Server>

  <FileManagement useFsc="false">
    <AssignedFSCURIs>[http://fsc-url:fsc-port/]</AssignedFSCURIs>
  </FileManagement>
  ...
</Teamcenter>
```

3DEXPERIENCE OnPremise: in the Enovia section:

- 3DSpace and 3DPassport URLs
- User / Password / Security Context for the integration user
- vault

```
<Enovia>
  <Server>
    <SpaceUrl>[https://enovia-server-and-enovia-port/3dspace]</SpaceUrl>
    <PassportUrl>[https://enovia-server-and-enovia-
port/3dspace]</PassportUrl>
    <Username>[v6-user]</Username>
    <Password plaintext="true">[enovia-password]</Password>
    <SecurityContext>[VPLMProjectLeader.Company Name.Common
Space]</SecurityContext>
    <Vault>vplm</Vault>
  </Server>
</Enovia>
```

3DEXPERIENCE Cloud: in the Enovia section:

- 3DSpace, 3DPassport and Enterprise IP Exchange URLs
- User / Password / Security Context for the integration user
- tenant ID of 3DEXPERIENCE cloud tenant

```
<Enovia>
  <Server webServiceOnly="true">
    <SpaceUrl>[https://tenant-region-space.3dexperience.3ds.com/enovia]
    </SpaceUrl>
```

```
    <PassportUrl>[https://region-ds.iam.3dexperience.3ds.com]
    </PassportUrl>
    <ExchangeUrl>[https://tenant-region-exchange.3dexperience.3ds.com/
    exchange]</ExchangeUrl>
    <Username>[v6-user]</Username>
    <Password plaintext="true">[enovia-password]</Password>
    <SecurityContext>[VPLMProjectLeader.Company Name.Common Space]
    </SecurityContext>
    <Tenant>[tenant ID]</Tenant>
  </Server>
</Enovia>
```

In the COMReconV5 section, provide the base path to the COMReconV5 installation.

Additionally, when connecting to 3DEXPERIENCE cloud make sure you have set corresponding settings in COMReconV5 option file as described in 4.1.3.1.

```
<COMReconV5>
  <InstallationList>
    <Installation id="comrecon-v5-local-1">
      <COMReconPath>[path-to\191118_COMReconV5_R27]</COMReconPath>
    </Installation>
  </InstallationList>

  <V5ToV6Preprocessing />
  <V6ToV5Postprocessing />
</COMReconV5>
```

In the TSI3DXBatch section, provide

- path to 3DEXPERIENCE CATSTART.exe
- name of environment file for XCI_3DEXPERIENCE_Batch without file extension
- path to directory where environment file is located
- LoginTicket
- 3D and 2D FileFormat CATIA V5 format to export, XPDMExport only required for 3DEXPERIENCE OnPremise

```
<TSI3DXBatch>
  <InstallationList>
    <Installation id="tsi3dxbatch-local-1">
      <CatStartPath>[path-
to\B419\win_b64\code\bin\CATSTART.exe]</CatStartPath>
      <CatStartEnv>[XCI_3DX_BATCH_Env]</CatStartEnv>
      <CatStartDirEnv>[path-to-cat-env]</CatStartDirEnv>
      <LoginTicket
plaintext="true">xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxx</LoginTicket>
```

```
    </Installation>
  </InstallationList>

  <XPDMExport>
    <FileFormat3D>[V5-6R2017]</FileFormat3D>
    <GeometryType3D>AsSpecification</GeometryType3D>
    <FileFormat2D>[V5-6R2017]</FileFormat2D>
  </XPDMExport>

  <FileExport>
    <DownwardCompatibility>
      <Format>[CATIAV5-6R2017]</Format>
      <GeometryType3D>AsSpecifications</GeometryType3D>
    </DownwardCompatibility>
  </FileExport>
</TSI3DXBatch>
```

7.3 General settings

In XCISettings.xml provide 3DEXPERIENCE related PnO information and Teamcenter behavior.

When connecting to 3DEXPERIENCE cloud, use the .3dx-cloud.sample file as basis.

In the Conversion section, add target Owner, Organization and Collaborative Space for data imported to 3DEXPERIENCE.

```
<Conversion>
  <Projects>
    <DefaultProject name="Default">
      <ProjectName>[Common Space]</ProjectName>
      <Organization>[Company Name]</Organization>
      <Owner>[v6-user]</Owner>
      ...
    </DefaultProject>
  </Projects>
</Conversion>
```

3DEXPERIENCE OnPremise: in the Enovia section, add the default security context for executing queries:

```
<Enovia>
    <QuerySettings>
    <DefaultEnoviaRole>[ctx::VPLMProjectLeader.Company Name.Common
Space]</DefaultEnoviaRole>
  …
  </QuerySettings>
</Enovia>
```

In the Pdm section, define DocumentRevisionSeparator if Datasets in Teamcenter follow a naming scheme where the revision is included at the end of the Dataset name. Teamcenter will by default use / as separator between name and revision when a Dataset is created below an ItemRevision.

For example, if a Dataset is created below ItemRevision 000123 revision A, then the Dataset name will be 000123/A – DocumentRevisionSeparator is /.

The setting default value is /.

```
<Pdm>
  <DocumentRevisionSeparator>/</DocumentRevisionSeparator>
</Pdm>
```

8 Installing the TCI Teamcenter Rich Client Plugin

8.1 Installation

The TCI Teamcenter Rich Client Plugin extends the Teamcenter functionality to communicate with 3DEXPERIENCE.

You should perform the following steps with your Teamcenter administrator.

Locate the downloaded archive file (**`TCI_TC_UI_[xxxx]_V[xxx].zip`**). Extract the content of the archive file to a temporary location, e.g. **`C:\temp\TCI_TC_UI_2312_V3.11.0.0`**.

Inside the temporary installation location, locate the folder **`TCI_TC_UI_[xxxx]_V[xxx]\install\windows`** for an installation on a client with Windows 32-bit or the folder **`TCI_TC_UI_[xxxx]_V[xxx]\install\windows_64`** for an installation on a client with Windows 64-bit.

Start the installation by double-clicking **`Setup.exe`**.

The “TCI Teamcenter Rich Client Plugin” wizard appears. Click Next:

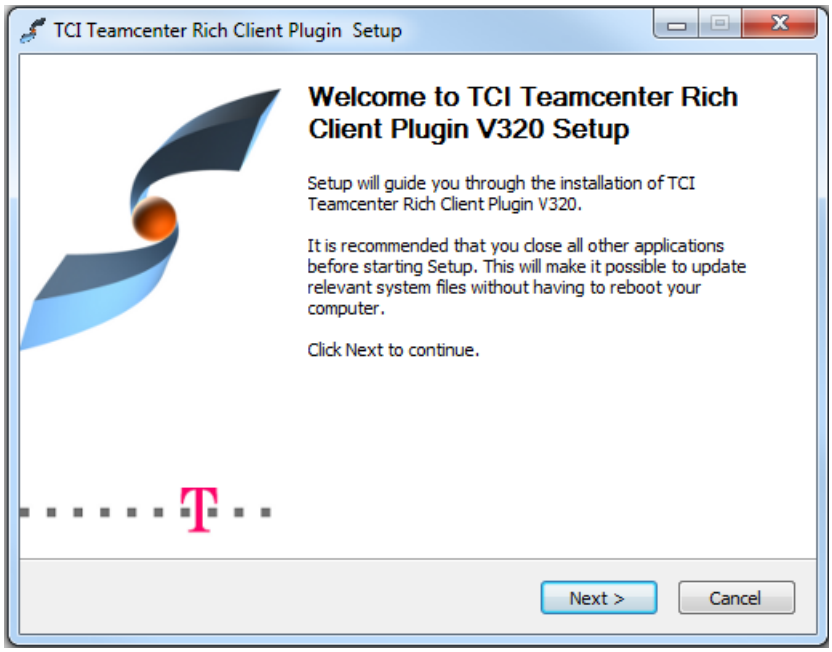


Figure 4: Setup – Start page

The License Agreement page displays the link to the general terms and conditions of software purchase and maintenance of T-Systems International GmbH. You have to click “I Agree” to get to the next page:

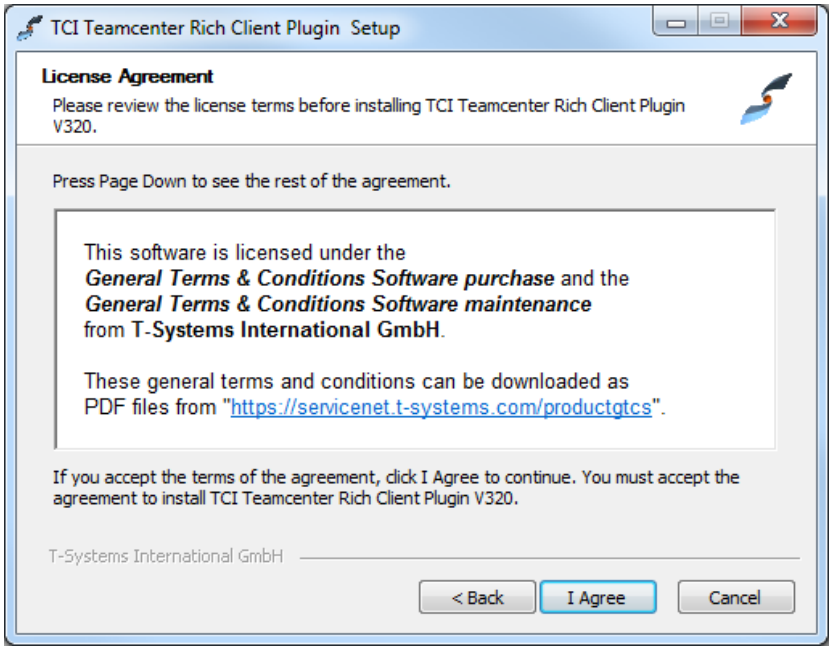


Figure 5: Setup – License Agreement page

On this page you must choose for which users you want to install the TCI Teamcenter Rich Client Plugin. Proceed with Next:

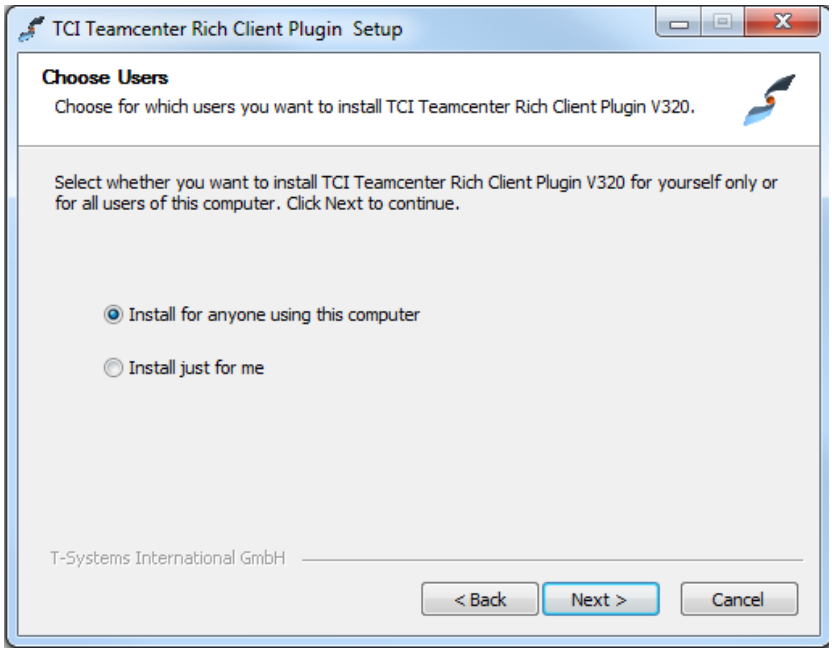


Figure 6: Setup – Choose Users page

On the Choose Install Location dialog you need to enter the folder where setup will install the TCI Teamcenter Rich Client Plugin. Select the path using the Browse button and proceed with Next:

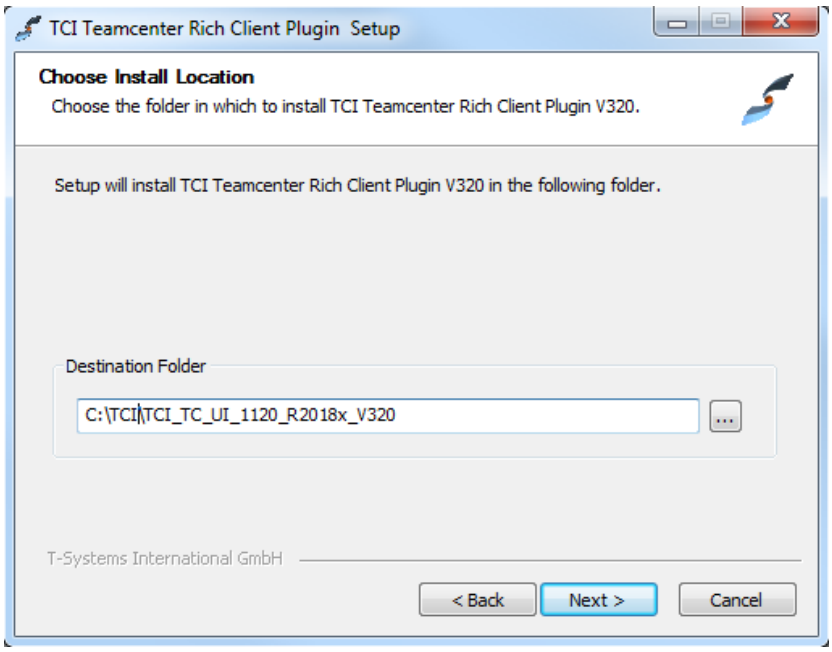


Figure 7: Setup – Choose Install Location page

On the next page you will be asked for the folder, where the Teamcenter Rich Client resides (**`TC_PORTAL_ROOT`**). The Rich Client folder is usually named “portal” and contains also the Rich Client start script “portal.bat”.

Please contact your Teamcenter system administrator to make sure that the selected path is correct. Select the folder using the Browse button and proceed with Next:

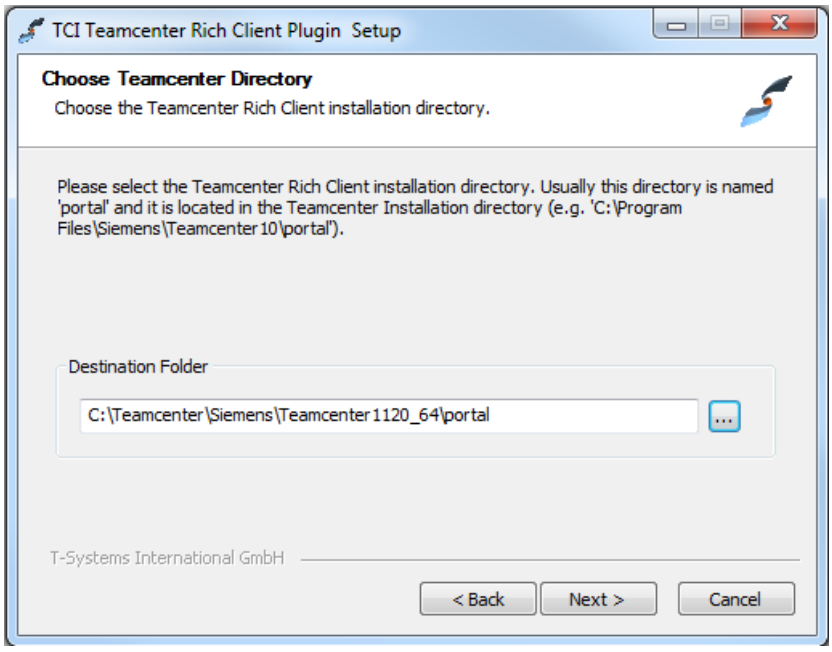


Figure 8: Setup – Choose Teamcenter Directory page

Select the Teamcenter Rich Client start file. This is a batch script that is located in the Rich Client folder (the one you have selected in the previous step). The file is usually named “portal.bat”.

Please contact your Teamcenter system administrator to make sure that you have selected the correct file. Select the file using the Browse button and proceed with Next:

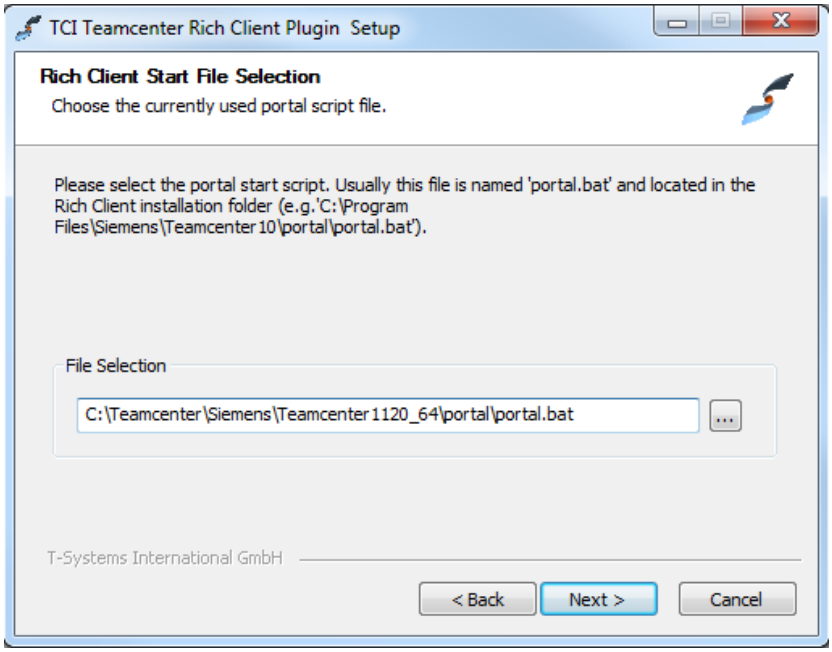


Figure 9: Setup – Choose Rich Client start file page

On the next page you need to define the TCI settings. Enter the correct value and proceed with Next:

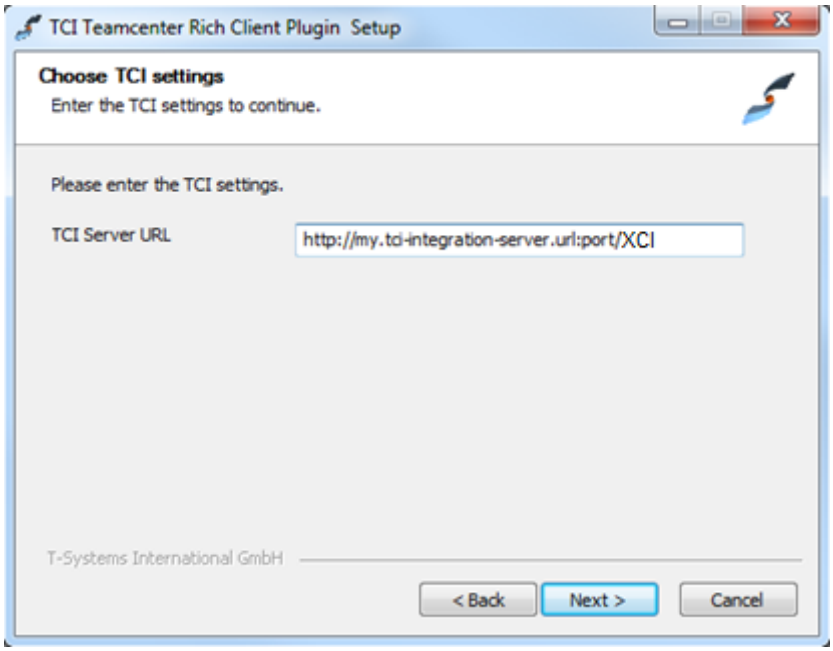


Figure.10: Setup – TCI settings page

The Check Setup Information page lists all information which you have entered. If you detect some wrong information, please use the Back button to enter correct information, otherwise start the installation with click on the Next button:

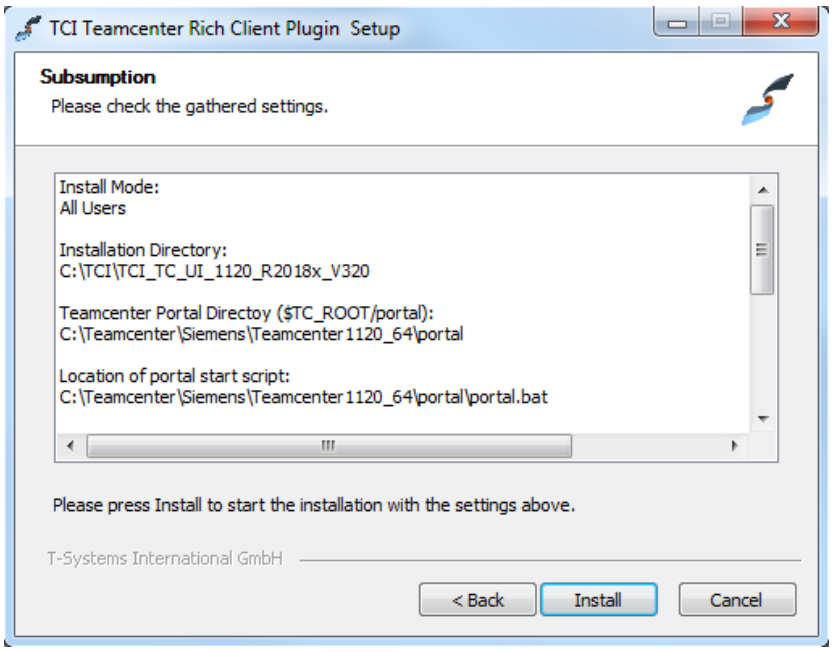


Figure.11: Setup – Subsumption page

For Teamcenter the registry will be generated.

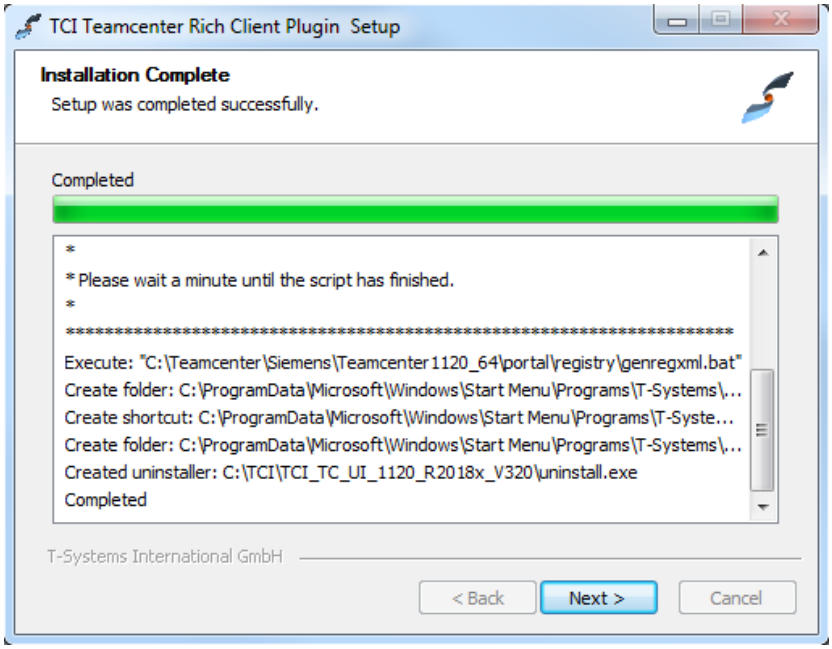


Figure 12: Setup – Installation Complete page

Once the wizard has successfully completed, click Finish:

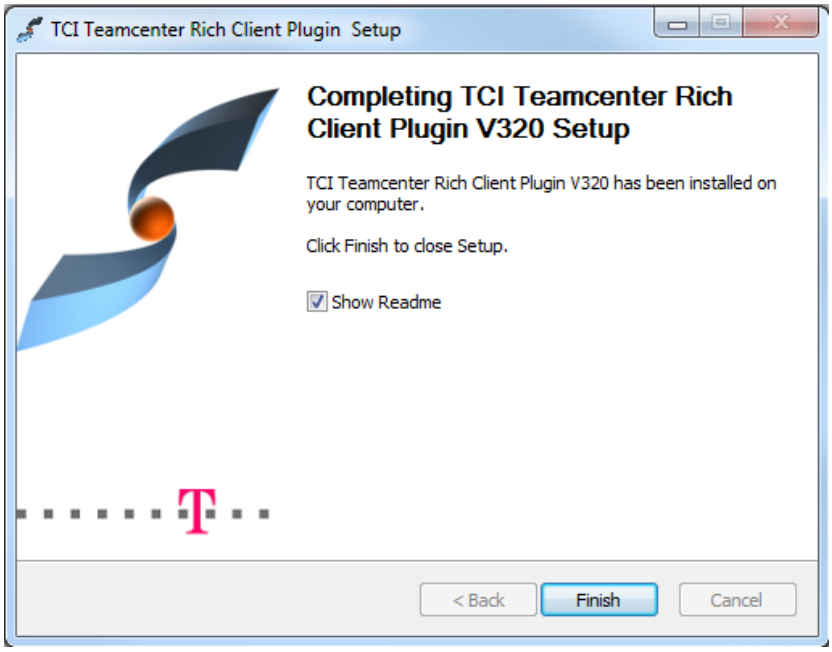


Figure 13: Setup – Finished page

8.2 Silent Installation

It is possible to use a silent installation for the client installation.

8.2.1 Parameters

The following parameters are available for the silent installation:

Parameter Name	Example Value	Description
/S		Activates the silent mode.
/User= value	Admin	Installation only for yourself (“User”) or for all users of the computer (“Admin”). Default is the highest possible value.
/TeamcenterInstDir= (Directory path)	C:\Program Files\Siemens\Teamcenter2312\portal	The directory of the Teamcenter Rich Client installation. <must be set>
/TeamcenterPortalFile= (File full path)	C:\Program Files\Siemens\Teamcenter2312\portal\portal.bat	The full path of the portal.bat start script file. <must be set>
/TciServerURL= (URL)	http://my.tci-integration-server.url:port/XCI	The TCI Server URL. <must be set>
/D=(Directory path)	C:\TCI\TCI_TC_UI_2312_V3.11.0.0	The target directory of the installation.

Table 7: Silent installation parameters for TCI Teamcenter Rich Client Plugin

Teamcenter installation directory, portal.bat file and TCI server URL must be set.

The parameter **`/S`** activates the silent mode.

The parameter **`/User`** is optional. The highest possible value will be used as default value.

The parameter **`/D`** is optional. A part of the value will be taken from the current directory. It must be the last parameter used in the command line and must not contain any quotes, even if the path contains spaces. Only absolute paths are supported.

If one value is not given and it is not possible to fetch a value from the system, the installation process will be stopped, and the error message can be found in the file **`install.log`**.

8.2.2 Usage

For the silent installation please open a command line window as administrator.

Inside the temporary installation location, locate the folder **`TCI_TC_UI_[xxxx]_[xxx]\install\windows`** for an installation on a client with Windows 32-bit or the folder **`TCI_TC_UI_[xxxx]_[xxx]\install\windows_64`** for an installation on a client with Windows 64-bit.

Start the silent installation with a command line like this example:

```
Setup.exe /S /User= Admin /TeamcenterInstDir= "C:\Program
Files\Siemens\Teamcenter2312\portal" /TeamcenterPortalFile= "C:\Program
Files\Siemens\Teamcenter2312\portal\portal.bat" /TciServerURL=
```

```
"http://my.tci-integration-server.url:port/XCI"
/D=C:\TCI\TCI_TC_UI_2312_V3.11.0.0
```

The log file **`install.log`** of the installation will be stored in the current directory. There you can find the information about the installation process.

When the installation ended successful you will find the success message in this file.

8.3 Environment variables

The installation creates the start script **`TCI_TC_UI_Start.bat`**.

Here you can find an overview of the possible environment variables in this start script.

Environment Variable	Example Value	Description
XCI_SERVER_URL	http://my.tci-integration-server.url:port/XCI	The TCI Server URL. <mandatory>
XCI_TCIC_COMPATIBILITY	False	Use TcIC compatibility mode.
XCI_SEND_OBJ_MGR_AS_STRING	True	true: use only event custom attributes and not the export document. Default value is “true”.
XCI_EXPORT_TYPE	Text	Document type for complex export data
XCI_EXPORT_NAMED_REF	Text	The named reference type for complex export data
XCI_ENABLE_OPEN_IN_3DX	ON	ON: Enable the command “Open in 3DEXPERIENCE Rich Client” in the Teamcenter Rich Client. Default is OFF
XCI_CATDIRENV	<pathtoenv>\CATEnv	Required for XCI_ENABLE_OPEN_IN_3DX: the path to the 3DEXPERIENCE Environment directory.
XCI_CATENV	Env	Required for XCI_ENABLE_OPEN_IN_3DX: the Environment name for the 3DEXPERIENCE Environment.
XCI_CATSTART	<dsinstallpath>\B423\win_b64\code\bin\CATSTART.exe	Required for XCI_ENABLE_OPEN_IN_3DX: Path to the cat start executable of the 3DEXPERIENCE client.
XCI_ENABLE_OPEN_IN_DASHBOARD	ON	ON: Enable the command “Open in 3DEXPERIENCE Dashboard” in the Teamcenter Rich Client. Default is OFF
XCI_3DX_DASHBOARD_URL	http://3dexperience.url:port/3ddashboard	Mandatory for XCI_ENABLE_OPEN_IN_DASHBOARD URL of the 3DEXPERIENCE Dashboard.

Environment Variable	Example Value	Description
XCI_3DX_DASHBOARD_APP	ENOSCEN_AP	Optional for XCI_ENABLE_OPEN_IN_DASHBOARD App in 3D Dashboard to show object. Default is ENOSCEN_AP (Product Structure Explorer)
XCI_3DX_TENANT	OnPremise	Optional for XCI_ENABLE_OPEN_IN_DASHBOARD 3DEXPERIENCE environment, must be set for cloud environment. Default is OnPremise

Table 8: TCI Teamcenter Rich Client Plugin - environment variables

9 Installing the TCI Teamcenter Active Workspace Enhancement

9.1 Installation

The TCI Teamcenter Active Workspace Enhancement extends the Teamcenter Active Workspace Client functionality to communicate with 3DEXPERIENCE.

To install the Active Workspace Enhancement of TCI on the server the following steps must be performed.

Locate the downloaded archive (e.g. **`TCI_AWC_UI-3.11.0.0.01.zip`**). Unpack the archive to a directory, for example to "**`C:\temp\server\awc`**". Inside this you will find several sub-directories, which contain the TCI enhancement for Active Workspace.

Copy the directory tci-module to the src directory in the stage directory of your Teamcenter Active Workspace installation, e.g. "**`C:\TC2312\aws2\stage\src`**".

Merge the solution directory to the src\solution directory in the stage directory of your Teamcenter Active Workspace installation, e.g. "**`C:\TC2312\aws2\stage\src\solution`**".

Merge the image directory to the src\image directory in the stage directory of your Teamcenter Active Workspace installation, e.g. "**`C:\TC2312\aws2\stage\src\image`**".

Open a console window as administrator.

Change to the stage directory of your Teamcenter Active Workspace installation, e.g. "**`C:\TC2312\aws2\stage`**".

Publish the new Active Workspace system including TCI with the command "**`awbuild.cmd`**" to the gateway.

To connect Active Workspace with TCI server, set the Teamcenter Preference XCI_SERVER_URL matching the variable in Chapter 8.3, e.g. "http://my.tci-integration-server.url:port/XCI".

9.1.1 CSP configuration

CSP is enabled for Active Workspace – it is enabled by default from Active Workspace 2512 onwards – then communication to external URLs is blocked.

The Active Workspace Plugin needs to communicate to the TCI server and its URL needs to be whitelisted.

Update the CSP for **`connect-src`** in the Active Workspace Gateway configuration and add the XCI URL.

See also Teamcenter documentation for details in "Teamcenter Security" -> "Configuring gateway Content Security Policy".

This requires a restart of the Active Workspace Gateway.

Gateway configuration is usually located at:

```
%TC_ROOT%\microservices\gateway\config.json
```

Sample configuration with added TCI URL:

```
{
  "security": {
    "cspPolicy": {
      "directives": {
        ...
        "connect-src": ["'self'", ..., "http://localhost:8080/XCI/" ],
        ...
      }
    }
  }
}
```

10 Installing the TCI 3DEXPERIENCE Rich Client Extension

10.1 Installation

The TCI 3DEXPERIENCE Rich Client Extension extends the 3DEXPERIENCE functionality with TCI commands.

You should perform the following steps with your 3DEXPERIENCE administrator.

Locate the downloaded archive file (**`TCI_3DX_UI_R[xxxxx]_V[xxx].zip`**). Extract the content of the archive file to a temporary location, e.g. **`C:\temp\TCI_3DX_UI_R2024x_V3.11.0.0`**.

Inside the temporary installation location, locate the folder **`TCI_3DX_UI_R[xxxxx]_V[xxx]\install\windows_64`** for an installation on a client with Windows 64-bit.

Start the installation by double-clicking **`Setup.exe`** and follow the instructions. The 3DEXPERIENCE values will be received from the registry if possible.

10.1.1 Installation in a 3DEXPERIENCE cloud environment

If both a Cloud and OnPremise 3DEXPERIENCE Rich Client is detected on the machine, the user must confirm with a checkbox if the installation is for Cloud or for OnPremise. Otherwise, the installer automatically detects the Cloud environment.

An additional installer page is presented where these necessary values must be set.:

- 3DSpace URL
- Cloud Tenant

For example, the 3DSpace URL and the Cloud tenant can be easily identified by starting the “Collaborations & Approvals” App from the 3D Compass menu:

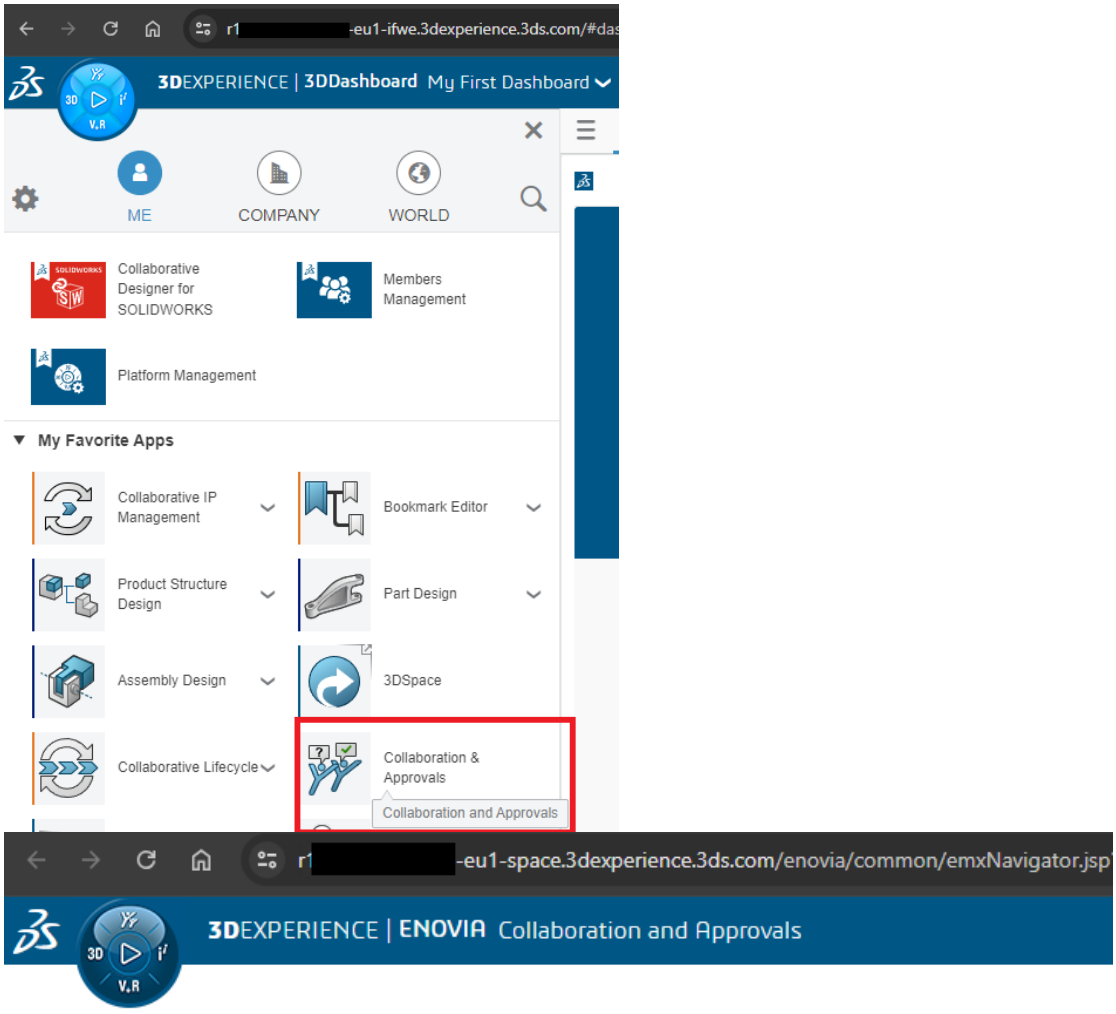


Figure 14: 3DEXPERIENCE Cloud 3DSpace URL

3DSpace URL: **`https://r1234567890123-eu1-space.3dexperience.3ds.com`**

The 3DSpace URL also contains the name of the Cloud Tenant, but with lower-case “r”!

Note: Change the starting letter “r” to upper-case letter “R” for the Cloud Tenant name!

```
tenant=R1234567890123
```

10.1.1.1 Adding the TCI 3DEXPERIENCE Rich Client Extension to the default client environment (optionally)

The TCI 3DEXPERIENCE Rich Client Extension is a global add-in and should be available independently of the 3DEXPERIENCE Rich Client APPs that can be started from the 3DEXPERIENCE web client.

Replace the Env.txt, e.g.:

```
"C:\Program Files\Dassault Systemes\B426_Cloud\CATEnv\Env.txt"
```

with the TCI_3DX_UI_Env.txt from the installation, e.g.:

```
"C:\Program Files\T-
Systems\TCI_3DX_UI_R2024x_V[X.YY.0.0]\config\TCI_3DX_UI_Env.txt"
```

And add the following two lines at the end of the file:

```
XCI_MODULE=TCI
XCI_SERVER_URL=http://my.tci-integration-server.url:port/XCI
```

10.2 Silent Installation

It is possible to use a silent installation for the installation of the rich client extension.

10.2.1 Parameters

The following parameters are available for the silent installation:

Parameter Name	Example Value	Description
/S		Activates the silent mode.
/User= value	Admin	Installation only for yourself (“User”) or for all users of the computer (“Admin”). Default is the highest possible value.
/3DXInstDir= (Directory path)	C:\Program Files\Dassault Systemes\B426	The directory of the 3DEXPERIENCE installation.
/3DXEnvFile= (File full path)	C:\Program Files\Dassault Systemes\B426\CATEnv\Env.txt	The full path of the 3DEXPERIENCE environment file.
/XciServerURL= (URL)	http://my.tci-integration-server.url:port/XCI	The TCI Server URL. <must be set>
/Tenant= (tenant name)	R1234567890123	Cloud only: mandatory
/3DSpaceURL= (3DSPACE URL)	https://r1234567890123-eu1-space.3dexperience.3ds.com:443/enovia	Cloud only: mandatory
/D=(Directory path)	C:\TCI\TCI_3DX_UI_R2024x_V3.11.0.0	The target directory of the installation.

Table 9: Silent installation parameters for 3EXPERIENCE Rich Client Extension

TCI server URL must be set.

The parameter **`/S`** is required.

The parameter **`/User`** is optional. The highest possible value will be used as default value.

Both values for the 3DEXPERIENCE installation are optional; the values can be fetched from the Windows registry.

The parameter **/D** is optional. A part of the value will be taken from the current directory. It must be the last parameter used in the command line and must not contain any quotes, even if the path contains spaces. Only absolute paths are supported.

If one value is not given and it is not possible to fetch a value from the system the installation process will be stopped and the error message can be found in the file **install.log**.

10.2.2 Usage

For the silent installation please open a command line window as administrator.

Inside the temporary installation location, locate the folder **TCI_3DX_UI_R[xxxxx]_V[xxx]\install\windows_64** for an installation on a client with Windows 64-bit.

Start the silent installation with a command line like this example:

```
Setup.exe /S /User= Admin /3DXInstDir= "C:\Program Files\Dassault
Systemes\B426" /3DXEnvFile= "C:\Program Files\Dassault
Systemes\B426\CATEnv\Env.txt" /XciServerURL= "http://my.tci-integration-
server.url:port/XCI" /D=C:\TCI\TCI_3DX_UI_R2024x_V3.11.0.0
```

Start the silent installation for the cloud installation with a command line like this example:

```
Setup.exe /S /User= Admin /3DXInstDir= "C:\Program Files\Dassault
Systemes\B426_Cloud" /3DXEnvFile= "C:\Program Files\Dassault
Systemes\B426_Cloud\CATEnv\Env.txt" /XciServerURL= "http://my.tci-
integration-server.url:port/XCI" /Tenant= "R1234567890123" /3DSpaceURL=
"https://r1234567890123-eu1-space.3dexperience.3ds.com:443/enovia"
/D=C:\TCI\TCI_3DX_UI_R2024x_V3.11.0.0
```

The log file **install.log** of the installation will be stored in the current directory. There you can find the information about the installation process.

When the installation ended successful you will find the success message in this file.

10.3 Environment variables

The installation creates the start script **TCI_3DX_UI_Start.bat**.

Here you can find an overview of the possible environment variables in this start script.

Parameter Name	Example Value	Description
XCI_DEBUG	ON	Enable the TCI debug
XCI_ENABLE_OPENINPDMCMD	ON	Enable the Command to open the selected Product in the Teamcenter Rich Client or Web Client
XCI_TEAMCENTER_PORTAL	See sample below.	Optional: Path to Teamcenter Rich Client portal.bat, if more than one client is installed. By default, will connect to the Teamcenter client that is associated with the *.ugs file extension.
XCI_WEBBROWSER	See sample below.	Optional: Path to the web browser executable to be used for the open URL command.
XCI_TEAMCENTER_WEBCLIENT_URL	See sample below.	The web client URL used to open the referenced object in a Teamcenter web client. This will disable the open in Teamcenter Rich Client functionality.
XCI_SERVER_URL	See Client extensions configuration	Path to the TCI integration server

Table 10: TCI 3DEXPERIENCE Rich Client Extension environment variables

Samples for Environment variables:

XCI_TEAMCENTER_PORTAL:

```
D:\Teamcenter2312\portal\portal.bat
```

XCI_WEBBROWSER:

```
C:\Program Files (x86)\Microsoft\Edge\Application\msedge.exe
```

XCI_TEAMCENTER_WEBCLIENT_URL (Active Workspace Client, default):

```
http://tcserver:3000/#/com.siemens.splm.clientfx.tcui.xrt.showObject?uid=
```

XCI_TEAMCENTER_WEBCLIENT_URL (Active Workspace Client, content page):

```
http://tcserver:3000/#/com.siemens.splm.clientfx.tcui.xrt.showObject?page=Content&uid=
```

XCI_TEAMCENTER_WEBCLIENT_URL (Teamcenter legacy web client, open default app):

```
http://tcserver:12080/tc/webclient#argument=
```

XCI_TEAMCENTER_WEBCLIENT_URL (Teamcenter legacy web client, open Navigator app):

```
http://tcserver:12080/tc/webclient#appCode=Navigator&argument=
```

XCI_TEAMCENTER_WEBCLIENT_URL (Teamcenter legacy web client, open PSE app):

```
http://tcserver:12080/tc/webclient#appCode=PSE&argument=
```

10.4 Client extensions configuration

The client must be configured using the 3DEXPERIENCE options dialog.

The *TCI* configuration dialog under *Options → General → Compatibility* shows some version information of the integration, and the server URL can be configured to connect to the TCI integration server. The client supports the encryption of the communication channel using SSL. To enable this feature, the client must be configured to connect a https URL.

Example:

```
http://my.tci-integration-server.url:port/XCI
```

Instead of using the preference you can also set the following variable in the start script

TCI_3DX_UI_Start.bat:

```
set XCI_SERVER_URL=http://my.tci-integration-server.url:port/XCI
```

This URL will be used if the preference is not set.

To verify the connectivity to the configured server the Check Server button can be used. A message will be shown to indicate successful or unsuccessful connections.

11 Installing the license manager

11.1 Remarks

TCI requires Licman21 as its license manager.

A Licman Client (lld) must be installed on the TCI server host, each batch (Converter server) host and on any Workstation that requires the 3DEXPERIENCE Rich Client plugin.

During the installation of the Licman, you must specify a temporary working directory. Choose a directory where the user has full access rights.

11.2 Running Licman as a regular executable on Windows

If you install Licman with the setup program on Windows, it will be run as a service and require administrator rights. Beginning with ptf19, it is possible to launch Licman as a regular executable when the TCI is started.

You need to set the license path variable:

```
SET LICMAN_LICENSE_PATH=<port>@<host>
```

Then call **licman21_lld.exe** as a regular executable.

No execution of the setup routine is required in this case.

For more information, see Licman User Manual.