

Trillium Software System™

Installation Guide

Version 15.7

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**TRILLIUM
SOFTWARE**

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Preface

The *Trillium Software System Installation Guide* describes how to install TSS and components like TS Repository Server, Country Templates, Control Center, Batch Deployment Tool, EDQ, and so on. Included are checklists for you to verify the completion of each phase of the multi-level installation process. Also included are procedures for upgrading or converting existing repositories. Each chapter is organized by logical sequence of installation steps.

- ① *The TSS installation paths documented in this guide are for Windows 7 and UNIX environments only. If you are installing TSS in another environment, your installation path may differ from what is documented in the guide.*

Intended Audience

This document is intended for system administrators who will install Trillium Software System. On UNIX systems, the system administrator needs root access for some configuration.

Related Documentation

To access the TSS manuals and TSS Help, click the Help option on the Control Center ribbon. Alternately, access documentation from the Windows Start menu. (Select **Start > All Programs > Trillium Software > TSS 15 > Documentation**.) The documentation set consists of the following guides:

- *Technical Bulletin: Install and Directory Structure Changes in TSS v15.0.0* - contains information on changes in v15.0.0 to the installation paths and directory structures.
- *TSS Repository Administrator's Guide* - contains instructions for setting up repositories, users, and loader connections.
- *TSS Beyond the Basics* - provides supplemental information, sample tutorials and in-depth analysis of key TSS concepts and processes.

- *TSS Help*

You may also want to visit the Trillium website at:

<http://www.trilliumsoftware.com>

This site is a comprehensive resource library of white papers, case studies, product descriptions, solution summaries, webcasts, and related information.

① *If you find errors in any Trillium Software documentation, have suggestions for additional topics, or have any other comments, please let us know. You can contact the Documentation team through Trillium's Customer Support department.*

Customer Support

Customer Support is available Monday through Friday, 24 hours a day, to help you with any questions you may have about Trillium Software System. This service is available to all customers who have active maintenance plans.

- E-mail: **techsupport@trilliumsoftware.com**
- Telephone: **978-901-0000 (Worldwide Headquarters)**
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Requirements and Checklists

This chapter lists the software, hardware and other requirements for installing Trillium Software System on UNIX and Windows platforms. It includes the following topics:

- [TSS Important Changes on page 11](#)
- [TSS Components on page 14](#)
- [System Requirements for TSS on page 15](#)
- [Installation Checklist for UNIX on page 19](#)
- [Installation Checklist for Windows on page 22](#)
- [Defining User Accounts on page 23](#)
- [Backing up Existing Repositories on page 32](#)

TSS Important Changes

Note the following changes:

- **Trillium Quality for Big Data.** For TSS v15.7, Trillium Quality for Big Data is now available to deploy TS Quality projects to your Hadoop environment. Trillium Quality for Big Data integrates Trillium's data quality application with Syncsort DMX-h to cleanse and match your data in the Hadoop framework. You install Trillium Quality for Big Data as a

separate solution. For more information, see the *Trillium Quality for Big Data Installation Guide*.

❗ *As of v15.7, TS Quality for Hadoop is discontinued and is no longer installed with EDQ software.*

- **Trillium Discovery and Collibra Integration.** New for v15.7, this solution is installed with the TSS Windows and Linux repository server software and includes a Collibra-Trillium.zip file that contains the integration project files. The solution is installed in the following default location:

- Windows: C:\Program Files (x86)\Trillium Software\MBSW\15\svr\Collibra
- Linux: `install_path/server/metabase/svr/collibra`

For more information, see the *Trillium Discovery and Collibra Integration Administration and User's Guide*, installed with the solution.

- **HP-UX Itanium.** HP-UX Itanium systems are no longer supported. TSS v15.3 was the last release to support HP-UX.

❗ *Support for HP-UX PA-RISC was previously discontinued.*

- **Apache Tomcat**

- As of v15.7, the version of Apache Tomcat installed with the TSS server has been upgraded to v8.0.47.
- After you install the TSS repository server, you must start Apache Tomcat server.
- Set Apache Tomcat Ports (New Installations Only). The TSS server installation sets the Apache Tomcat start port to 8080 and the stop port to 8005. After you install the TSS server, if you install Enterprise Connectivity Solutions (ECS) and you plan to use 32-bit TS Web Services, verify (and change if needed) the Apache Tomcat start and stop ports in the `server.xml` file on your server system. `server.xml` is located in the following location:

Windows: C:\Program Files (x86)\Trillium Software\MBSW\15\Apache_Tomcat\conf

UNIX: `server_install_path/metabase/Apache_Tomcat/conf`

- If you have an existing instance of TSS v15 installed, and you have made changes to the 32-bit Apache Tomcat `server.xml` file, to retain these changes:
 - a. Before you upgrade, rename the existing `server.xml` file as a backup file (for example, `server.xml.bak`) for reference.
 - b. Install TSS. The server will install a new `server.xml` file.
 - c. After TSS is installed, update the new `server.xml` file with your modifications as needed.

For more information and the full procedure, see [Retaining Changes in server.xml Files on page 243](#).

■ Java

- Java is no longer installed with the TSS server software.
- TSS requires Java 1.8. Before you install TSS v15.7, you must install Java/JRE (or JDK) 1.8, 32- or 64-bit version depending on the components you install:

Repository Server and Enterprise Connectivity Solutions/TS Director

- Windows JRE 1.8 32-bit
- Linux
- AIX

- Solaris Sun JRE 1.8 64-bit

Enterprise Data Quality (EDO)

- Windows JRE 1.8 64-bit
- Linux

① *If you use the TS Director Software Development Kit (SDK) samples for Java, Java 1.6, 1.7, and 1.8 are supported. Ensure you select the correct version of the `TrilTGenClient.jar` executable in the `\ProgramData\Trillium Software\ECS\15\samples\SDK\Java` directory.*

- Install Java to the default install location on your server system. On Windows, the location is: C:\Program Files (x86)\Java. Restart your system after installation.
- Set the JRE_HOME environment variable to point to the default Java installation.
- **Solaris Sun.** If you have a TSS v15.3 (or earlier) server installed on a 32-bit Solaris Sun system and you are running 32-bit TS Web Services (part of TS Director/Enterprise Connectivity Solutions) you cannot upgrade to TSS v15.7 because Java 1.8 is unavailable for 32-bit Solaris Sun platforms.

TSS Components

Depending on your license purchase, you will install some or all of the TSS components. For example, if you purchased TSS for profiling capability only, you will need to install:

- Repository Server (includes Discovery Center and Trillium REST APIs)
- Control Center

If you purchased TSS for cleansing or matching mainly for batch processing, you will need to install:

- Repository Server (or TS Quality Core only)
- Control Center
- Country Templates
- Postal Directories (Tables)
- Batch Deployment Tool
- Enterprise Data Quality (EDQ) 64-bit, if you are deploying TS Quality projects to a 64-bit environment

If you purchased TSS for cleansing or matching for real-time processing or for an enterprise deployment, you will need to install:

- Enterprise Connectivity Solutions
- Repository Server (or TS Quality Core only)
- Control Center
- Country Templates
- Postal Directories (Tables)

- Batch Deployment Tool
- Enterprise Data Quality (EDQ) 64-bit, if you are deploying TS Quality projects to a 64-bit environment

If you purchased and/or plan on using TS Quality for SAP, TS Web Services (for 64-bit), and/or 64-bit enabled core TS Quality modules and Trillium tables, install EDQ 64-bit. For more information about EDQ, see [Installing EDQ on page 127](#).

Review the system requirements, the platform-specific checklists and verify all your requirements are met before you begin the installation. Trillium Software recommends that you update the checklist when you complete each task.

System Requirements for TSS

This section describes the hardware and software requirements for the Trillium Software System. It also lists the data requirements for both flat file data sources and relational data sources needed to use in Trillium Software System.

Minimum Requirements: Control Center

Supported Platforms

- Microsoft Windows 10
- Microsoft Windows 8, 8.x
- Microsoft Windows 7
- Microsoft Windows Server 2016
- Microsoft Windows Server 2012, 2012 R2
- Microsoft Windows Server 2008

Browser Software

Internet Explorer 10 and 11. If your client system is Windows 10, you must use IE 11; Microsoft Edge is not supported.

Configuring Internet Explorer

Internet Explorer 10 and later browser versions in Windows Server 2012/2008 have Internet Explorer Enhanced Security Configuration enabled by default. Therefore, you must:

- Add the Trillium URL: **`https://15.tss.trilliumsoftware.com`** to the list of trusted sites.
- Specify the security level to Medium

For more information, see: <http://technet.microsoft.com/en-us/library/dd883248%28v=ws.10%29.aspx>.

► To add Trillium Control Center to the list of trusted sites

1. Select **Tools > Internet Options** from the Internet Explorer menu.
2. Click the **Security** tab.
3. Select **Trusted Sites**, then click **Sites**. Then enter the following URL:
`https://15.tss.trilliumsoftware.com`

The Control Center hosts an instance of Internet Explorer to render HTML and Javascript downloaded from the Repository Server. HTTP requests from the hosted IE that are directed at hosts in a sub-domain of `tss.trilliumsoftware.com` are routed to and serviced by the repository server by way of private proprietary protocol and connection. Trillium warrants that the domain `tss.trilliumsoftware.com` is reserved specifically for this purpose and no such domain is publicly registered. IE and other browsers running standalone (that is not hosted by Control Center) will not find `tss.trilliumsoftware.com`.

Microsoft Framework v4.5.2

The TSS Control Center requires Microsoft .NET Framework v4.5.2. If it is not present, installation will complete successfully but an error will occur when the user selects certain actions, such as deploying to real time.

Hardware

Component	Minimum Requirement
Screen resolution	1024x768 pixels (1280x1024 pixels or above recommended)
Color depth	16-bit (65536 colors)
Processor	Windows x86
Memory (RAM)	2 GB
TCP/IP connection speed	10 Mbps
Available disk space	20 GB

Minimum Requirements: Repository Server

Supported Platforms

Supported Server Platforms	Required Patch (if any)
UNIX	
AIX 6.1	Technology Level 1, Service Pack 1 or later.
AIX 7.1	No patch required
Solaris 10	Latest SUNWlibC patch
Solaris 11	Latest SUNWlibC patch
Red Hat Enterprise Linux 4	No patch required
Red Hat Enterprise Linux 5.5, 6, and 7 (EDQ supports 6 and above only)	No patch required
Linux Suse Version 11.1 and above	No patch required
Windows	
Microsoft Windows Server 2008	
Microsoft Windows Server 2012, 2012 R2	
Microsoft Windows Server 2016	
Microsoft Windows 7	
Microsoft Windows 8 and 8.x	


Supported Server Platforms	Required Patch (if any)
Microsoft Windows 10	

① *Patches are available from your operating system support provider.*

Other Software Requirements

- Enterprise Data Quality (EDQ) requires the following:
 - Java/JRE 1.8 installed on the server system.
 - For Windows, Microsoft Visual C++ 2013 64-bit (x64) Redistributable Package on the server system. Download from: <https://www.microsoft.com/en-us/download/details.aspx?id=40784>
- If you install the TSS server on Microsoft Windows 8.1 or later, and you plan to use the Discovery Center and Administration Center, you must install Microsoft .NET Framework v3.5.
- If you are running on a UNIX platform, you must have **inetd** (**xinetd** for Linux) installed.
- Gzip is required to install TSS on UNIX.
- GNU Compiler Collection (GCC)
 - If you are running on Solaris and have purchased the Global Postal Matcher or Geocoder process as part of your TS Quality license, you must have GCC Library Version 3.3.2. The library is available from the Sunfreeware archive at <http://sunfreeware.com>. There are different versions of the library depending on your version of Solaris.
 - The TSS server is a 32-bit application. If you plan to install the TSS server on Linux, you must also install 32-bit GCC libraries on the server system. These libraries are needed to run TSS 32-bit applications such as the repository server and the TSQ (core) modules.
- If you are running on a UNIX platform (32-bit/64-bit), you must have the **libuuid** package installed.

Hardware Requirements

Parameter	Minimum	Recommended	Power Server
Memory	RAM: 16 GB Processors: 1-4 Maximum Users: 2 Loads: Overnight Only	RAM: 32 GB Processors: 4-8 Maximum Users: 5 Loads: Moderate Daytime	RAM: 64 GB Processors: 8 or more Maximum Users: 10 Loads: Daytime
Network TCP/IP Connection Speeds	100 Mbps	1 Gbps	1 Gbps
Disk Space	Software: 1.5-2 GB Postal Table: Up to 20 GB Data: Refer to the TSS Sizing Capacity Estimator	 <i>50 to 200 GB, depending on which postal tables and other options you purchase and on the number of records you will be processing. Check with your account manager for more information.</i>	

Installation Checklist for UNIX

For the Windows platform, see [Installation Checklist for Windows on page 22](#).

✓ Action	Who ¹	How
REVIEW SYSTEM REQUIREMENTS	any	See page 15.
DEFINE USER ACCOUNTS		
1. TSS Application Administrator	root	See page 24.
2. TSS 15 Load User (optional)	tssadmin	See page 26.
INSTALL REPOSITORY SERVER		
1. Identify available port numbers.	any	See page 34.
2. Install required operating system patches.	root	See page 34.
3. Install the repository server.	tssadmin	See page 38.
4. Update tss_profile file.	tssadmin	See page 38.
5. Activate the TSS server license.	tssadmin	See page 47.
6. Start the TSS Scheduler.	tssadmin	See page 48.

	7. Start Apache Tomcat.	tssadmin	See page 48.
	INSTALL COUNTRY TEMPLATES	tssadmin	See page 74.
	INSTALL THE CONTROL CENTER	winadmin	See page 90.
	INSTALL BATCH DEPLOYMENT TOOL	winadmin	See page 101.
	INSTALL ENTERPRISE DATA QUALITY	tssadmin	See page 127.
	INSTALL POSTAL DIRECTORIES		
	1. Install postal directories.	tssadmin	See page 172.
	2. Validate file integrity.	tssadmin	See page 187.
	CONFIGURE REPOSITORIES, LOADER CONNECTIONS, USERS		
	See the <i>TSS Repository Administrator's Guide</i> .	repadmin	

¹**root**—UNIX root user (UNIX Administrator); **tssadmin**—TSS Application Administrator; **winadmin**—Windows Administrator; **repadmin**—TSS Repository Administrator.

Why Root Access?

As noted in the checklist for UNIX systems, some procedures must be performed by a user with root access. When you enter a root password during the UNIX software installation, `inetd.conf` or (`xinetd.conf` on Linux) file is updated to allow the correct processes to be called between the UNIX system and TSS. (The `inetd` daemon controls certain UNIX system processes.) No other configuration or services file is changed.

The following are examples of changes made after the root password is entered:

OS	File or Service Entry	Change Example
Linux	xinetd definition, typically written to /etc/xinetd.d/tss_ profile	<pre> service dscserv4_rel15 { disable = no flags = REUSE socket_type = stream protocol = tcp wait = no user = systest server = /home/systest/tss15/repository/ bin/ mtb_server log_on_failure += USERID passenv = env = HOME=/home/systest LOGNAME = systest } </pre>
	Service entry, typically written to /etc/services	<pre> # These lines are entered for Trillium Software Repository v15 dscserv4_rel15/tcp dscserv4_lm_rel15/tcp </pre>
Sun Solaris	<ul style="list-style-type: none"> ■ inetd.conf ■ xinetd definition ■ Service entry 	Follows either of the above conventions, depending upon the OS version.
AIX	inetd.conf	<pre> # These lines are entered for Trillium Software Repository v15 dscserv2_rel15 stream tcp nowait systest /usr/bin/env env -i HOME=/home/systest LOGNAME=systest / home/systest/tss15/repository/bin/mtb_server </pre>
	Service entry, typically written to /etc/services	<pre> # These lines are entered for Trillium Software Repository v15 dscserv2_rel15/tcp dscserv2_lm_rel15/tcp </pre>

Next, go to [Defining User Accounts on UNIX on page 23](#) for instructions of how to define user permissions on UNIX.

Installation Checklist for Windows

✓ Action	Who ¹	How
REVIEW SYSTEM REQUIREMENTS	any	See page 15.
DEFINE USER ACCOUNTS		
<ol style="list-style-type: none"> 1. TSS Application Administrator 2. TSS 15 Load User (optional) 3. TSS Repository Administrator 	winadmin winadmin winadmin	See page 27. See page 30. See page 31.
INSTALL REPOSITORY SERVER		
<ol style="list-style-type: none"> 1. Install required operating system patches. 2. Identify available port numbers. 3. Install the repository server application. 4. Activate the TSS server license. 5. Start the TSS Scheduler. 6. Start Apache Tomcat. 	winadmin winadmin tssadmin tssadmin tssadmin tssadmin	See page 50. See page 51. See page 53. See page 69. See page 70. See page 71.
INSTALLING COUNTRY TEMPLATES	winadmin	See page 83.
INSTALL CONTROL CENTER	winadmin	See page 90.
INSTALL BATCH DEPLOYMENT TOOL	winadmin	See page 101.
INSTALL ENTERPRISE DATA QUALITY	tssadmin	See page 127.
INSTALL POSTAL DIRECTORIES		
<ol style="list-style-type: none"> 1. Install postal directories. 2. Validate file integrity. 	tssadmin tssadmin	See page 172. See page 187.
INSTALLING TS REPORTING ADAPTER	winadmin	See page 111.
CONFIGURE REPOSITORIES, LOADER CONNECTIONS, USERS		
See the <i>TSS Repository Administrator's Guide</i> .	repadmin	

¹**tssadmin**—TSS Application Administrator; **winadmin**—Windows Administrator; **repadmin**—TSS Repository Administrator.




Defining User Accounts

This section consists of

- [Defining User Accounts on UNIX](#)
- [Defining User Accounts on Windows](#)

Defining User Accounts on UNIX

TSS relies on two types of users: UNIX users and TSS users, as defined in the table below. You can create the TSS users during and after the installation procedure. However, you must define the UNIX users before you install TSS.

Type	Description
TSS Application Administrator	UNIX ID for user who installs the TSS components and administers the TS Scheduler and License Manager.  <i>Needs root access.</i>
TSS Repository Administrator	TSS ID for user who maintains the TSS repository server, defines repositories and data connections, and manages users and security.  <i>You establish this ID during the installation of the repository server. This user is also called the boot user.</i>
TSS Load User	UNIX ID for user who will access (through a login screen in the Control Center) data import directories located on the server. This type of user is required if you plan to load data from flat file sources (delimited, COBOL, Trillium sources). It is not required if you plan to directly access data from relational sources (IBM DB2, Oracle, ODBC). You will, however, need a user ID that gives you access to each specific database.
TSS User	TSS user account that accesses TSS repositories through the Control Center.  <i>TSS users can be Windows-authenticated users or Trillium-specific users. Users are managed by the TSS repository administrator after installation.</i>

Defining TSS Application Administrator on UNIX

You must create a UNIX ID for the TSS application administrator and, if you are using sudo, grant sudo rights before installing TSS. This administrator installs the repository server, and administers the Scheduler and License Manager on the server.

► To create a TSS application administrator

1. As the UNIX root user, create an administrator user account to perform TSS administrative activities.
2. Do one of the following:
 - If you are **not** leveraging the security provided through sudo, make sure that the TSS administrator has read access to any data import directories that you define. Proceed to [Defining TSS Load Users on UNIX on page 26](#).
 - If you are leveraging the security features of sudo, proceed to step 3.

3. As the UNIX root user, type the command: `visudo`

This brings up the file named **sudoers** for editing.

❗ *IMPORTANT: You must always edit this file through the **visudo** command.*

4. In the **Defaults:** specification section, add the following entries:

```
Defaults:<user_id> targetpw
Defaults:<user_id> passwd_tries=1
Defaults:<user_id> timestamp_timeout=0
```

Example

If the TSS application administrator user_id is **tssadmin**, add the following entries:

```
Defaults:tssadmin targetpw
Defaults:tssadmin passwd_tries=1
Defaults:tssadmin timestamp_timeout=0
```


5. In the **User Privilege** specification section, add:

```
<user_id> ALL=(ALL) ALL
```

Example

If the TSS application administrator user_id is **tssadmin**, add:

```
tssadmin ALL=(ALL) ALL
```

6. Save the file and exit.
7. Verify that sudo is correctly configured.
 - a. Log in as the TSS application administrator.
 - b. Issue the following command:

```
sudo -u <TSS Loader User ID> id
```

- c. When prompted, enter the password for the TSS load user.
- d. Type the command:

```
id
```

The operating system should return the UNIX uid of the TSS load user. If it does not, contact your system administrator.

- ① *After you have completed the installation of the repository server and definitions, add the sudo path to the tss_profile file. See [Specifying Variables for UNIX on page 45](#) for more information.*

Defining TSS Load Users on UNIX

Define a TSS load user account on the UNIX server if you are planning to import data from a flat file. This account is necessary to access the data file using your UNIX user id.

For example, when importing flat files residing on the `/data` directory of a repository server, you must use a TSS load user (UNIX user id) with read access to the repository server and the `/data` directory.

① *You define the data storage locations when you create load connections after the TSS installation.*

► To create a TSS load user

1. Define a new UNIX user account or select an existing user account to act as a TSS load user.
2. Give the account read access to the data import directory.

① *All flat file data to be imported into TSS must reside on the local server disk. TSS load users will NOT be able to import flat file data into TSS without access to the data import directories.*

Defining User Accounts on Windows

This section contains information on user accounts on Windows along with configuration instructions.

① *The TSS software requires that an administrative user creates user accounts.*

About User Permissions (UAC)

User Account Control (UAC) improves security by limiting software usage for those with standard user privileges. On Windows 7, Windows 8, 2008 and 2012, you must disable UAC for the following components to run without any issue/error:

- Data Comparison Calculator
- Project Rule Analyzer

- Exporting projects
- Postal Directory Browser
- Batch Export

► **To disable UAC for currently logged in user**

1. Click **Start > Control Panel > Action Center > Change User Account Control settings**.
2. Disable UAC by moving the slider to the **Never notify** position.
3. Click **OK** to save your change.

Defining a TSS Application Administrator on Windows

You must assign a Windows administrator user with TSS application administrator permissions. The TSS administrator will install the Repository Server (and TS Quality), ECS and configure the TS Scheduler and License Manager.

► **To create a TSS application administrator**

1. As the Windows administrator, create a Windows user account for the TSS application administrator.
2. Add the TSS application administrator user to the group Administrators.
3. Click **Start > Control Panel > System and Security > Administrative Tools > Local Security Policy** and expand the **Security Settings > Local Policies > User Rights Assignment** folder.
4. Add the TSS application administrator user to the following options:
 - **Log on as a Service**
 - **Act as part of the operating system**

Design Secure Flat File Data Sources on Windows

This is an optional configuration appropriate for securing flat file data sources.

- ① *For the secured directory, remove all security access and add the required group.*

If you require security for flat file data sources, you must define at least one Windows user account that can act as a TSS 15 load user on the Windows server. When you create an entity in TSS (that is based on a flat file data source), you are:

1. Asked to choose a data connection.

Data connections are created through the Repository Manager and the Administration Center. Consult the *TSS Repository Administrator's Guide* and *Administration Center help* for more information.

2. Prompted for a username and password to access the data source stored on the TSS 15 server.

If...	Then...
No Windows Load User accounts are defined	You will not have to enter a username and password. All connections to flat file data sources are available to any TSS user.
At least one Windows Load User account is defined and has been granted read access to the directory defined by the data connection	You must enter a username and password to access those data sources through TSS.

Create a Secure Flat File Data Directory on Windows

To create a secure area for flat file data sources, you need to:

- Create a Windows group for each secure area.
- Create at least one Windows user ID for each Windows group that you created and add the user(s) to the appropriate group.
- Create a directory for each group.
- Edit the properties on each directory that you created and grant full access to the group that corresponds to the directory.

A user group is only required if you plan to access data from flat file data sources requiring secure directory locations. The following example demonstrates how this can be useful.

Example

Assume that you have 2 teams—Accounting and Human Resources—that will create entities based on flat file data sources.

If you do not want the Accounting team to have access to the data from Human Resources, you would:

- Create two Windows groups—one for Accounting and one for Human Resources.
- Create at least one Windows user ID for each group that you created and add the user(s) to the appropriate group.
- Create two separate directories—one for the Accounting team (C:\accounting) and one for the Human Resources team (C:\HR).
- Edit the properties on each directory that you created and grant full access to the group that corresponds to the directory.

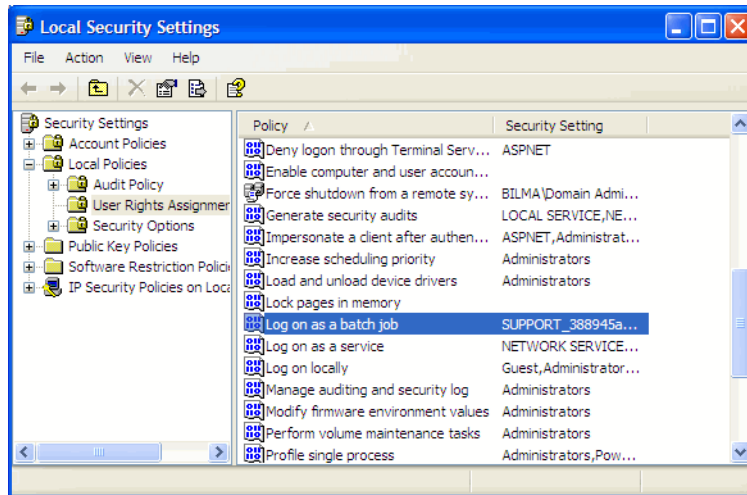
► To add a Windows user group for each secure location

1. Before you begin, as the Windows Administrator, create a user group on the TSS repository server to contain Windows user IDs that can access a secure area.

There are no naming restrictions for group names, but it is recommended that you name them something meaningful.

2. Click **Start > Control Panel > Administrative Tools > Local Security Policy**.

3. In the Local Security Policy window, expand **Local Policies > User Rights Assignment > Log on as a batch job**.



4. Add the user group you created in step 1.

① *Ensure that the Group Policy item “Remove Run option from Start Menu” is **not** applied to the new secure Windows group. This setting is located in Local Computer Policy\User Configuration\Administrative Templates\Start Menu & Taskbar.*

Create TSS Load User on Windows

A Windows user account acting as a TSS load user is only required if you plan to access data from flat file data sources requiring secure directory locations.

① *If you intend to directly import data from a relational data source instead of a flat file source, skip this procedure.*

► To create TSS Load User

1. Determine whether you will create a single user account that the team will share or if each user will have their own user account.
2. Create the Windows user account(s).

3. Add each user account (that will access the flat file data) to the appropriate Windows user group for each secure location.

❗ *IMPORTANT: User accounts not contained in the Windows group will **not** be able to import flat file data for that data connection.*

Create a Repository Administrator on Windows

As part of the TSS repository server installation, you designate the user who will be responsible for managing the repository, users, and data connections and will perform other administrative duties in TSS. You have three options for setting up this administrator:

- If you have Windows Active Directory services enabled, you can designate a user from the Windows Administrator group as the repository administrator.
 - ❗ *We recommend that you use Windows Active Directory services. If you choose this option, it applies to all TSS users. In other words, you cannot use a Windows Administrator group user as the repository administrator and then create TSS-specific users for the Control Center.*
 - ❗ *The TSS application administrator can also serve as the TSS repository administrator. Alternatively, you can establish a separate user to perform the role of repository administrator.*
- During installation, you can create a Trillium-specific user as the administrator.
- For a Trillium-specific user, you can optionally limit the administrator's role to only managing application and repository files using the TSS Repository Manager. This prevents the repository administrator from interacting with the operating system.

You specify the type of user (Windows Active Directory or Trillium) that will serve as the repository administrator during the installation process. If you plan to designate a Trillium-specific user as the repository administrator *and* you want to restrict this user's access, you must complete the following procedure before you install.

► **To limit the role of the TSS repository administrator on Windows**

1. Create the following user accounts:
 - `repadmin` - TSS repository administrator account
 - `tssuser` - User account that is accessible by users of the repository server and that has access to the appropriate data source(s). You may create as many user accounts as you require.
2. Apply the “**Log on as Batch Job**” group policy privilege to every user account that is to be used to import data using the Create Entity Wizard.
3. When you install the TSS repository server, choose the option to install for **repadmin** only.
4. Change all Trillium services to run as a Local System account.
 - a. Click **Start > Control Panel > System and Security > Administrative Tools > Services**.
 - b. Locate the TSS services.
 - c. Right-click, and choose **Properties**. Click the **Log on** tab and select the **Local System Account** option.
 - d. Click **OK**.
5. Set the following directory permissions:
 - **Import directories** – Grant permission for **tssuser** to read the directories where the data will be stored. Ensure that Local Service does not have permission to do so.
 - **Application and Repository directories** – Grant full control permissions to Local Service and deny access for **tssuser**.

Backing up Existing Repositories

If you plan to reuse existing repositories from an existing TSS installation, you must backup the repositories to avoid data loss or corruption. During Repository Server installation, you can select to re-use existing repositories.

CHAPTER 2

Installing the Repository Server

This chapter contains instructions for installing the TSS Repository Server on UNIX and Windows platforms. When you install the repository server, the TS Quality component is installed with the server by default. TS Quality contains the executables and libraries for TS Quality processes and utilities.

This chapter includes:

- [Installing the Repository Server on UNIX on page 34](#)
- [Installing the Repository Server on Windows on page 50](#)

Before you begin the installation, review the important information in the section [TSS Important Changes on page 11](#).

Installing the Repository Server on UNIX

Installation steps include:

- Verifying the installation checklist.
- Backing up existing repositories for conversion or upgrade.
- Installing JRE or JDK 1.8 32-bit.
- Installing the repository server.
- (Optional) Installing web services (for standalone TS Web Server) on Sun SPARC or AIX. The TS Web Server is installed by default on Linux. See [Installing Web Services on Sun SPARC or AIX on page 37](#).
- Specifying variables.
- Examining directory structure of files and folders.
- Activating Trillium Software System License.
- Starting the TSS services.
- Starting Apache Tomcat.

Verifying the Installation Checklist on UNIX

1. Verify that your system satisfies the hardware requirements listed on [page 17](#). Trillium Software recommends that you install the repository server on a local drive.
2. Verify that your system has the latest platform patch. All required patches are available from your operating system support provider.
3. Identify available ports. The repository server installation program asks for separate port numbers (accessible from the client to the server and not blocked) for:
 - Repository Server Login (client port)
 - Repository Server Scheduler (and license server if hosted locally)
 - License Server Host (if hosted remotely)
 - Apache Tomcat
 - TS Web services (UI Web Server)

- ① *Port numbers should not exceed 65535 and ports less than 1024 are typically reserved. For easy reference, port numbers should be consecutive numbers.*

The default port numbers are:

- 15040 - Repository Server Login (client port)
- 15041 - Repository Server Scheduler (and license server if hosted locally)
- 3000 - web server

To find available port numbers:

- a. Inspect the `services` file, located at: `/etc/services`.
 - b. Type the command `netstat -an` to identify ports that have applications listening on them.
4. For Oracle loader connection, make a note of your Oracle version. You will need to provide the version number during the installation
 5. For Windows Active Directory authentication, verify you know the name of the of the *domain controller* that will authenticate users. If you do not know the name of the controller, contact your Network Administrator responsible for the Active Directory. You can also use the `nslookup` command. For example:

On Windows:

```
nslookup
set type=all
_ldap._tcp.dc._msdcs.domain
```

where *domain* is the name of your domain. This will return a list of all the domain controllers for the specific domain.

Preparing to Re-use an Existing Repository

If you have a previous version of Trillium Software System installation, you can use data from that version. The installation procedure will go more smoothly if you have considered the conversion requirements and gathered the information you need beforehand.

- ① *We recommend that you create a backup of the repository server*

you are going to convert/upgrade.

If you plan to use a repository server from a previous version, it must satisfy the following conditions:

- It must come from TSS Version 11.0.1, 11.5.2, 12.0.1, 13, 13.5.1, 14.x. or 15.x. You can:
 - convert a pre v14 repository (that is TSS Version 11.0.1, 11.5.2, 12.0.1, 13, or 13.5.1)
 - upgrade a v14 repository (that is TSS version 14.x)
 - upgrade a previous version of v15 repository
- It must be complete and valid.
- It must be accessible from the server on which you are installing TSS 15.x.
- You must know the user ID and password of the repository administrator who created the existing repository server.

Note the following if you upgrade or convert repositories after you run the installation:

- If you have an existing repository from TSS v14.x or 15.x, an upgrade is performed. If for any reason you do not upgrade the repository during the installation process, after you install the software you must run the upgrade command to ensure the repository is properly upgraded. See [Upgrading TSS v14 or v15 Repository on page 239](#).
- If you have an existing repository from TSS v13.5.1 or earlier, a conversion is performed. If for any reason you do not convert the repository during the installation process, after you install the software you must run the copy command to ensure the repository is properly converted. See [Converting Pre TSS v14 Repositories on page 234](#).

Installing Web Services on Sun SPARC or AIX

The repository server installation does not install the web server on Sun SPARC or AIX. The web server is required for communication between the repository server and web-based Trillium applications Discovery Center and Administration Center. To use the web server, you must install:

- Web services on the repository server (see step [22 on page 41](#) of [Installing the Repository Server on UNIX](#)) when installing on Linux. If you cannot provide the web services information during repository server installation, you can add the information later using instructions in [Updating Registry File with TS Web Server Information](#).
- TS Web Server (standalone) on a Windows client (see [Installing Standalone TS Web Server](#) for more information) when the TSS server is installed on Sun or AIX.

Installing the Repository Server on UNIX

Use the following procedure to install the repository server. During installation, you can optionally define an administrator to manage the repository server.

► To install repository server

1. Log in to the system where you plan to install the repository server as the TSS administrator.
2. If you have not yet done so, install JRE or JDK 32-bit 1.8 to the default Java location on your server.
3. If you have not yet done so, download the server installation software setup from the TSS Download Center (File Portal) FTP site.
4. In the install software package, locate the directory
`/[platform]Server`
5. Unzip and copy the setup file to a convenient location on the UNIX server.
6. Set execute permissions on the setup file (if necessary). For example:
`chmod +x tss_server_version.build_platform.sh`
7. Run the setup file. For example:
`tss_server_version.build_sunos.sh`

The program checks for existing installations. If it finds one or more existing installations, it offers you the option of upgrading or converting data from an existing repository server into TSS v15.

① [Review the section *Preparing to Re-use an Existing Repository* on page 35.](#)

8. Select the installation option:
 - Enter **1** for a new install. Go to step [10 on page 39](#).
 - To upgrade or convert an existing repository, enter **2** and press **Enter**.
You see the prompt **Enter the Repository Environment boot user password**.

9. Enter the password of the boot user (repository administrator) who created the repository server you are converting. If you do not know the password, you cannot proceed with the conversion. Go to step [10 on page 39](#).
10. Press **Enter**. You see the prompt: **Please enter the name of your organization**.
11. Enter the name of your organization and press **Enter**. You see the prompt **Where would you like to install TSS 15 - Repository server?** This is the repository server path.

```
=====
TSS 15 - Repository Server Installation, build spf-15-3-0_15077
(c) 2005-15 Trillium Software
=====

WARNING: NIS Detected.
         Please ensure that the services entry uses files,
         otherwise this installation of TSS 15 - Repository Server may not
         function correctly.

Please choose from one of the options listed below.
1. New Installation (default)
2. Upgrade/convert existing installation
3. Import existing repository
Enter choice (1-3): 1

Please enter the name of your organization: trillium

Where would you like to install TSS 15 - Repository Server? : █
```

12. Enter the repository server path. For example, /opt/TrilliumSoftware/server and press **Enter**. The application binaries are installed in this location.

You see the prompt **Where would you like to install your Repository Environment?**

13. Enter the directory location for your repositories, for example, /opt/TrilliumSoftware/repository/ and press **Enter**.

❶ *The repository server and repository environment paths must be distinct.*

You see the prompt **To use Windows Authentication, enter the Active Directory server address or hostname**.

14. Enter the active directory name and press **Enter** for Windows Authentication (recommended). If you plan to use Trillium authentication, simply press **Enter**.

You see the prompt **Enter the Repository Environment boot login name:**

15. Enter the login name for the repository administrator and press **Enter**.

You see the prompt **Enter the Repository Environment boot login password:**

16. Create a password for Trillium authentication. Or, enter the password associated with your Windows user ID for Windows authentication.
17. Press **Enter**.

i *Note down the administrator username and password. You must provide this information to log in to Repository Administration Command Prompt tool and to the Repository Manager.*

```
Please enter the name of your organization: trillium
Where would you like to install TSS 15 - Repository Server? : /home/jchatte/server
Where would you like to install your Repository Environment? : /home/jchatte/repository

To use Windows Authentication, enter Active Directory server address or hostname:

Enter the Repository Environment boot login name: tssadmin
Enter the Repository Environment boot login password: *****
```

You see the prompt **Will your license manager be local or remote?**

```
Will your license manager be local or remote?
1. Local (Default - most servers will use a local license manager)
2. Remote (Only used when installing TSS 15 - Repository Server on multiple servers)
```

18. Specify whether the License Server is local or remote.
 - Enter **1** if the License Server will be hosted locally (the default).
 - Enter **2** if the License Server will be hosted remotely. Use this option when you install on multiple servers.
19. Press **Enter**. You see the prompt **Enter license manager host name (host name):**

20. Enter the license manager host name and press **Enter**.

You see the warning:

WARNING: Services for TSS 15 - Repository Server have not been installed yet. To install them later you will need the root password.

The warning is followed by the prompt: **Enter port number for Client login:**

21. Enter the port number for the client (default is 15040) and press **Enter**.

You see the prompt: **Enter port number for Scheduler:**

22. Enter the port number for the Scheduler (default is 15041) and press **Enter**.

- On Linux, you see the prompt: **Enter the port number for the web server:**

Enter the port number for the web server (for example, 3000) and press **Enter**.

- On Sun SPARC and AIX you see the prompt: **Install web services (required for some new functionality)? (y/n):**

- a. To install web services, enter **y**, otherwise enter **n** and go to step [23 on page 42](#). If you selected **y**, you see the prompt: **Enter mtbad-min port number:**

- b. Enter the port number for TSS web services and press **Enter**.

You see the prompt: **Enter hostname for the of Web Server bridge (if known):**

- c. Enter the host name of the standalone web server, for example `localhost` and press **Enter**. If you do not know the information, you can add the information at a later time.

You see the prompt: **Enter port number for the Web Server bridge (if known):**

- d. Enter the port number of the standalone web server, for example, 3000 and press **Enter**. If you do not know the information, you can

add the information at a later time.

To add the port number and host name for the Web Server bridge, see [Updating Registry File with TS Web Server Information on page 49](#).

23. At the prompt **Please check your installation settings to make sure they are correct. Continue installation? (y/n):**, review the settings that you specified.
 - Enter **y** if the settings look correct and you want to continue the installation.
 - Enter **n** if the settings are not satisfactory. The program takes you back to the beginning of the process.
24. Press **Enter**.

```
Will your license manager be local or remote?
1. Local (Default - most servers will use a local license manager)
2. Remote (Only used when installing TSS 15 - Repository Server on multiple servers)
Enter number (1/2):
Enter license manager host name (hhdtrldev01): 15040
WARNING: Services for TSS 15 - Repository Server have not been installed yet.
To install them later you will need the root password.

Enter port number for Client login:
Enter port number for Scheduler: 15041
Install web services (required for some new functionality)? (y/n): y
Enter port number for web services: 3000
Enter host name of Web Server bridge (if known):

Enter path to SyncSort executable (or press return if not installed):

Please check your installation settings
to make sure they are correct.
Continue installation? (y/n):
Continue installation? (y/n): y

Installing TSS 15 - Repository Server
=====
Untarring binaries...
```

The installation untars the binary and TSQ files and displays the prompt **Choose your Oracle version**.

25. Enter the option number (**1**, **2** or **3**) that applies to your site and press **Enter**. The default value is **1** (Oracle 10g). Depending on your operating system and configuration, you may see different choices for Oracle client versions.

The process creates a Registry file, installs the Data Adapter and then

displays the following message:

```

Installing TSS 15 - Repository Server
=====
Untarring binaries...
Untarring TSQL...

Choose your Oracle version:
1. Oracle 10g (default)
2. Oracle 9i
3. None
Enter choice (1-3): 1

Installing Data Adapter...

Services for Repository Environment may need to be installed. This requires an update to the (x)inetd configuration of this machine.
They can be installed now (requires root password) or later (by running setup -root).
Install services for Repository Environment now? (y/n): n

```

- ① *Data Adapter provides read/write functionality to various database products supported by TSS. See [Why Root Access? on page 20](#) for an explanation of why root access is required.*

26. Enter **y** or **n** to proceed:

- Enter **y** if you have root access and wish to proceed. You are prompted for the root user's password. Enter the root password and press **Enter**. The installation process begins. When all the repository services have been installed, a completion message is displayed.
- Enter **n** if you do not have root access or if you do not wish to install repository services at this time.

When you are ready to install, log in as a user with root access and issue the command `setup -root` from the `../TrilliumSoftware/server/metabase` directory.

If you are having problems running the setup, verify that the setup file has the correct execute permission for the TSS Administrator. If not, use the `chmod` command to grant execute permission.

After you issue the `setup -root` command, respond to the series of prompts as follows:

- a. Enter the repository server installation path (for example, `/opt/TrilliumSoftware/server`) and press **Enter**.
- b. Enter the username of the TSS repository administrator and press **Enter**.

- c. Enter the home directory of the username specified in step [b on page 43](#) (for example, /export/home/tssadmin) and press **Enter**.
- d. Enter the port number for the client login and press **Enter**.
- e. Enter the port number for the Scheduler and press **Enter**.

Once the repository environment building is complete, you see the prompt **Do you want to set-up default connections? (y/n)**

27. Enter **y** and press **Enter** to install the sample connections.

If you selected **y**, you see the following Set-up sample connections:

```
Set-up sample connection:
1. Delimited
2. TSQ
3. Both
Enter Number: 3
```

28. Enter **1** to install the sample delimited connection, **2** to install the TSQ (Trillium) connection, or **3** to install both; then press **Enter**.

When repository installation is complete, you see the message:

TSS 15 - Repository Server Installation complete.



If you are converting an existing repository, the conversion process may take anywhere from a few minutes to several hours, depending on the size of the repositories you are converting. You can check the `mtb_server.log` to check the status of the conversion. If the conversion process stopped before completing, contact Technical Support before canceling the operation.

29. Ensure that the ports specified during installation are not blocked by your firewall. Add or remove firewall rules to allow open ports as needed.

Specifying Variables for UNIX

When working with Trillium Software System, **inetc** accesses `tss_profile` to gather environment information. For example, if you are using `sudo`, you need to define its path in the `tss_profile` file.

► To modify the `tss_profile` file on a UNIX Server

1. Login to the repository server system as TSS administrator.
2. Stop the TSS Scheduler, if it is running.
 - a. Verify that there are no users logged on to TSS.
 - b. Change directories to `/Server Path/metabase/bin`
When you installed TSS, you were asked **Where would you like to install the TSS 15 Repository Server?** This is the directory represented by `Server Path`.
 - c. Type the command:

```
./scheduler -stop
```
3. Change to the `/Server Path/etc` directory.
4. Locate the file named `tss_profile` and open it for editing.
5. If you are using `sudo`, use the `PATH` command to specify the `sudo` location. For example, if `sudo` is located in your `/usr/local/bin/` directory, the variable path should be:

```
PATH=/usr/bin:/usr/local/bin/  
export PATH
```
6. Set the `TZ` (time zone) variable to reflect the value you want.
ⓘ *The format of the `TZ` command varies, depending on the UNIX platform you are using. See your operating system documentation for details.*
7. Save and close the file.

Examining Directory Structures and Files on UNIX

After you have installed the repository server and definitions, two new directory structures containing files and folders related to the TSS repository server and TSS repository definitions are created on the server.

Repository Server Path

The repository server is installed in the directory that you specified during installation when asked **Where would you like to install the Repository Server?** This manual refers to this path as the **repository server path**. The server path includes, but is not limited to, the following directories and files:

```
<Server Path>/
metabase   Apache Tomcat
            bin
            etc
            Jre
            lib
            library
            resources
            templates
```

Repository Path

The repository is installed in the directory that you specified during installation when asked **Where would you like to install your repository environment?**. This manual refers to this path as the **repository path**.

The repository path includes, but is not limited to, the following directories and files:

```
<Repository Path>/
            export
            import
            logs
            metabase
            _control/
            tmp/
```

Activating Trillium Software System License on UNIX

To activate the license, you must be logged on as the TSS application administrator.

The license is attached to the email that contains the instructions to download the TSS software from the TSS Download Center (File Portal) FTP website.

► To activate a license key on the TSS Server

1. Make sure that you are logged on to the TSS server as the TSS application administrator.
2. Copy over the `license.txt` file into the `metabase/etc` directory of the repository server path.
3. Change directories to the `metabase/bin` directory of the repository server path.
4. Type the following command:

```
./mtb_admin
```
5. When prompted, enter the repository administrator's username and password.

i *If you are using Windows authentication, you must log in with a fully qualified user name. For example, `tssadmin@mycompany.com`.*
6. At the prompt **_control:** enter the following command and press **Enter**.

```
activate
```

Activation of your license key is complete.
7. Type the following command and press **Enter** to exit the `mtb_admin` tool.

```
exit
```

Starting the TSS Scheduler on UNIX

► To start the TSS Scheduler

1. Log in to the repository server as the TSS application administrator.
2. Go to the bin directory: `server_install_path/metabase/bin`
3. Type the command: `./scheduler -start`
4. Press **Enter**.

Starting Apache Tomcat on UNIX

If you plan to use 32-bit TS Web Services, part of the Enterprise Connectivity Solutions, you must start Apache Tomcat. You must first set the `JRE_HOME` environment variable (and `JAVA_HOME` for JDK if applicable).

► To start Apache Tomcat on UNIX

1. Log in as a user with system administrator privileges.
2. To verify your Java version, enter `java -version`. Ensure Java 1.8 32-bit version is installed.
3. Verify that the `JRE_HOME` variable in `setenv.sh` is set to your Java JRE location, for example, `/usr/java/jre1.8.0_102`

The `setenv.sh` file is located in `server_install_path/metabase/`
`Apache_Tomcat/bin`

4. Change directories to Trillium's Apache directory, for example `server_install_path/metabase/`
`Apache_Tomcat/bin`
5. Run the start-up script, `startup.sh`
6. To shut down the server, run the `shutdown.sh` script, also in the Apache `/bin` directory.

Starting TSS Rest APIs on UNIX

► To start TSS Rest APIs

1. Log in to the repository server as the TSS application administrator.
2. Go to the bin directory: `server_install_path/metabase/bin`
3. Type the command: `svr_start`
4. Press **Enter**.

Updating Registry File with TS Web Server Information

This section is applicable only if during repository server installation:

- you installed on Sun SPARC or AIX.
- you installed web services.
- you did not provide the port number or the hostname for the TS Web Server.

The repository server uses the port number and hostname information to tell the clients where to find the standalone TS web server. For more information on installing the standalone TS Web Server, see [Installing Standalone TS Web Server](#).

► To update the registry file with the port number and hostname

1. Make a back up of the registry file located in the `../etc` directory of the server installation.
2. Open the `.registry` file for editing.
3. Locate the entry `nodePort`. Enter the port number for the web server bridge. This is the port number the web server is listening on, for example 3000.
4. Locate the entry `nodeHost`. Enter the hostname for the Web Server bridge. This is the host name for the web server, for example `localhost`.
5. Save your changes.

Installing the Repository Server on Windows

This section guides you through the installation of the TSS repository server on the Windows platform and includes:

- Preparing the repository server on Windows
- Installing JRE or JDK 1.8 32-bit
- Installing the repository server on Windows
- Examining directory structures and files on Windows
- Activating Trillium Software System license on Windows
- Starting the TSS services on Windows
- Starting Apache Tomcat as a service

Preparing to Install the Repository Server on Windows

- Go over the checklist on [page 17](#) and verify your system meets the hardware and software requirements.
- Verify that the default ports are available. During installation, you are prompted for port numbers that are accessible from the client to the server and are not blocked. These port numbers are used for:
 - Repository Server Login (client port)
 - Repository Server Scheduler (and license server if locally hosted)
 - License Host (if remotely hosted)
 - Apache Tomcat
 - Web services (UI Web Server)

► To find available port numbers

1. From the Windows Start menu, select **Start > Run....**
2. Type `cmd` and click **OK**.
3. At the prompt, type:

```
netstat -an
```

4. Press **Enter**. This returns a list of active ports.
5. Review the list and verify that the following ports are not listed (and are therefore not currently in use):
 - 15040 (**Repository Server**)
 - 15041 (**Repository Server Scheduler**)
 - 15060 (**Apache Tomcat Start Server**)
 - 15061 (**Apache Tomcat Stop Server**)
 - 3000 (**UI Web Server Port**)
6. If a default port is already in use, you will need to specify a different port when you install the repository server application. The port you select should be greater than 1000 and not exceed 65535.
7. Type `exit` to close the window.

Preparing to Convert an Existing Repository Server on Windows

If you have installed a previous version of Trillium Software System, the installation procedure gives you the option of re-using data from an existing repository server. It is recommended that you consider the conversion requirements and gather the information you need beforehand.

① *A repository server is a collection of repositories. You cannot convert an individual repository.*

To re-use a repository server from a previous version, you do not have to have the previous version of TSS installed. However, the existing repository server must meet the following conditions:

- It must come from TSS Version 11.0.1, 11.5.2, 12.0.1, 13, 13.5.1, 14.x, or 15.x. You can:
 - convert a pre V14 repository (that is TSS Version 11.0.1, 11.5.2, 12.0.1, 13.0, or 13.5.1)
 - upgrade a v14 repository
 - upgrade a v15 repository
- It must be complete and valid.

- It must be accessible from the server on which you are installing TSS 15.
- You must know the user ID and password of the repository administrator who created the existing repository server.

Note the following if you upgrade or convert repositories after you run the installation:

- If you have an existing repository from TSS v14.x or 15.x, an upgrade is performed. If for any reason you do not upgrade the repository during the installation process, after you install the software you must run the upgrade command to ensure the repository is properly upgraded. See [Upgrading TSS v14 or v15 Repository on page 239](#).
- If you have an existing repository from TSS v13.5.1 or earlier, a conversion is performed. If for any reason you do not convert the repository during the installation process, after you install the software you must run the copy command to ensure the repository is properly upgraded. See [Converting Pre TSS v14 Repositories on page 234](#).

Reusing an Alternative Repository

TS Quality projects create large data files, so your repository administrator may have created an alternative repository just for those files. If the alternative repository is part of an existing installation on the server on which you plan to install TSS 15, the conversion process will set up the alternative repository for you.

However, if the alternative repository is *not* currently part of an installation or is on a different server, then the repository administrator must copy the repository and redefine its path after the TSS 15 installation is complete.

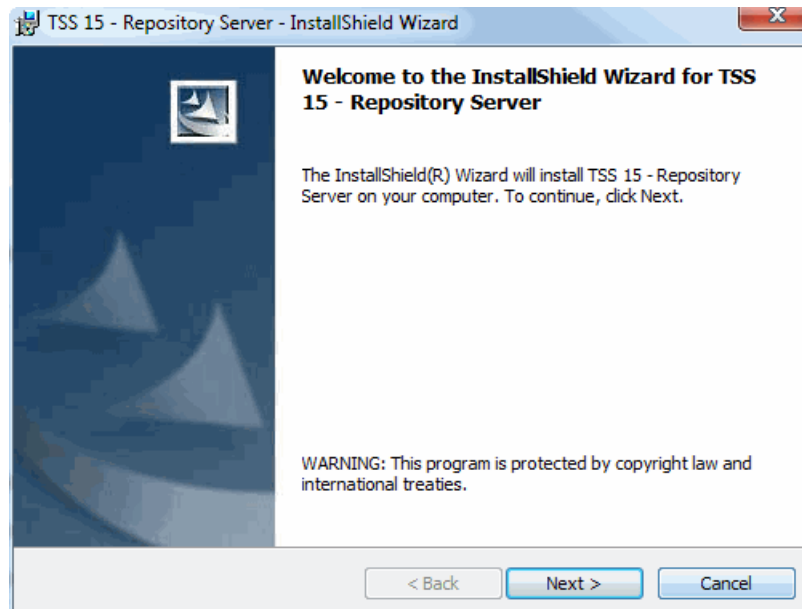
- ① *The repository administrator establishes the path to the alternative repository using the Repository Administration Command Prompt, as described in the TSS Repository Administrator's Guide.*

Installation Steps on Windows

The repository server uses DLLs that are common to other applications. So that the latest versions of the common DLLs are installed, you may be asked to shut down some applications before installing repository server.

► To install the repository server

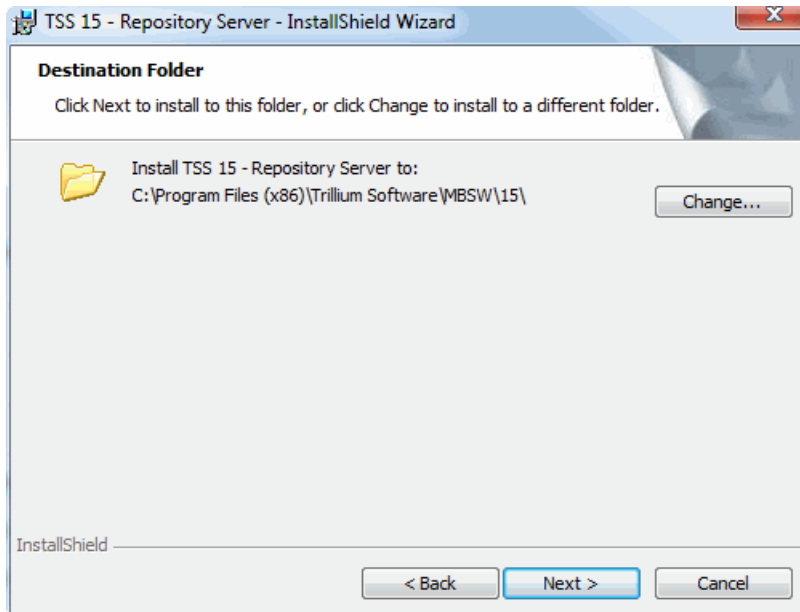
1. Log in as the TSS administrator.
2. If you have not already done so, install JRE or JDK x86 (32-bit) 1.8 to the default location on your server. For example, C:\Program Files (x86)\Java\.
3. If you have not yet done so, download the software installation package from TSS Download Center (File Portal) FTP site.
4. Browse to the \Repository_Server directory.
5. Double-click the setup file to begin the installation. The InstallShield Wizard gathers the required information and displays the welcome message.



6. Click **Next**. The License window opens.



7. Read the license agreement. Select the **I accept the terms in the license agreement** option.
8. Click **Next**. The Destination Folder window opens.



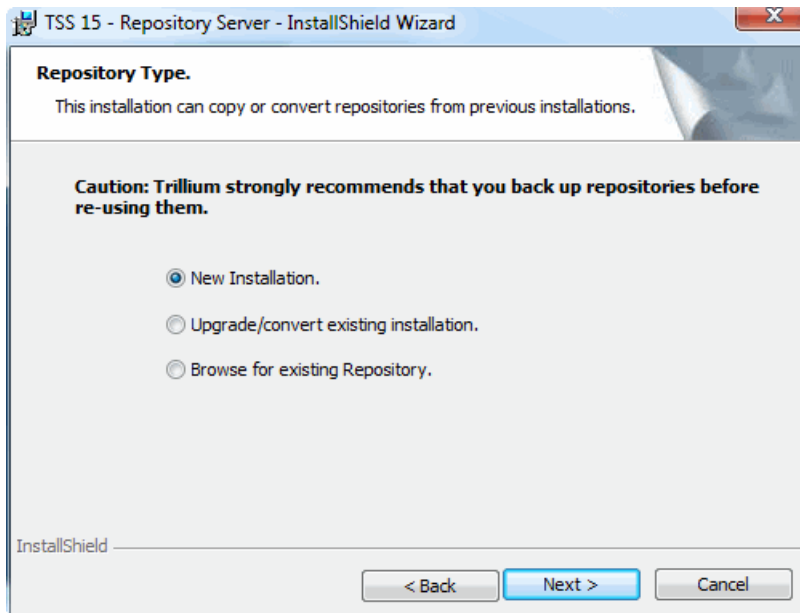
9. Click **Next** to accept the default path.

Alternately, click **Change** to specify a different path and then click **Next**. The path you specify here is the **repository server path**. You are asked to specify a path for the repository in the next step. These two paths must be distinct. For example, if you specify the server path as C:\Trillium_Software\server, you can define the repository path as C:\Trillium_Software\repository.

The **Repository Type** window opens. You can:

- create a new repository
- convert a pre-v14 repository (that is TSS Version 11.0.1, 11.5.2, 12.0.1, 13 or 13.5.1)
- upgrade a v14 or v15 repository
- browse for an existing repository that is not associated with any previous TSS installation

- ① *Trillium recommends backing up any existing repository and data that you plan to reuse.*



10. Select one of the following option and click **Next**.
- **New Installation** - Select this default option if you do not want to reuse existing data. Proceed to step [11 on page 60](#).
 - **Upgrade/convert existing repositories** - Select this option if you have existing repository servers that you want to reuse. See [Upgrade/convert existing repositories to re-use on page 57](#).
 - If they are pre v14, you will have to convert the repositories to v15.0
 - If they are v14.x or v15.x, you will have to upgrade them to v15.0
 - **Browse for existing repository** - Select this option if you have an existing repository server that is not associated with one in the standard location on the current server. For example, say you are installing TSS 15 on a different server than you installed previous versions. For configuration instructions, see [Browse for existing repositories on page 59](#).

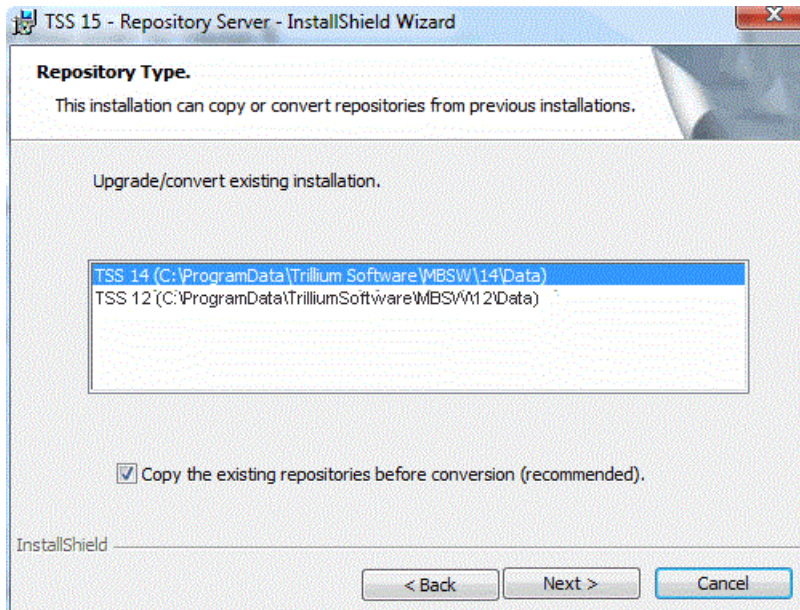
Upgrade/convert existing repositories to re-use

Use the following procedure to upgrade/convert existing repository.

►To upgrade/convert existing repositories to reuse

When you select the Upgrade/convert existing installation option, and click **Next**, all available repositories are listed.

- a. Verify you made a backup of the data you plan to reuse.
- b. Select the repository you want to upgrade/convert.



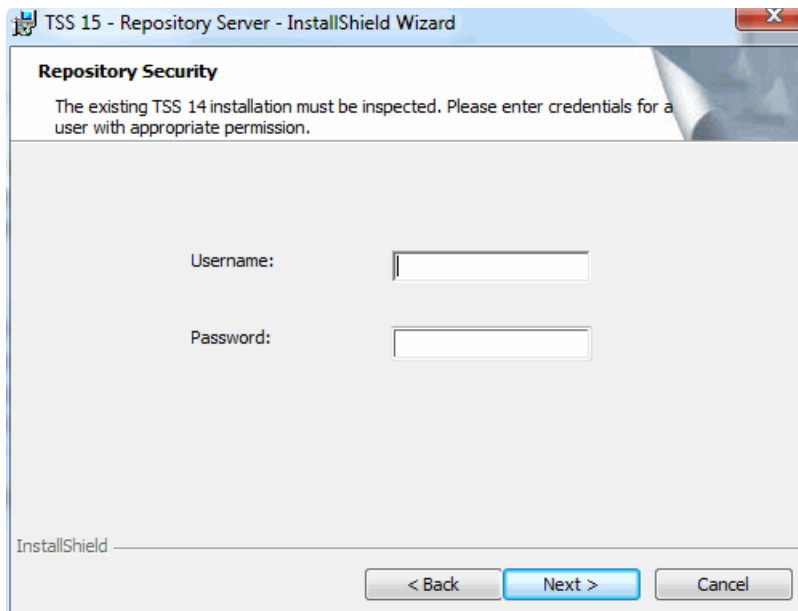
In this image, you are selecting to upgrade a TSS 14 repository. If you selected a TSS v12 repository, it would be converted.

- c. Verify that the **Copy the existing repositories before conversion** box is checked.



If you do not copy the existing repositories, the conversion overwrites the existing ones so they will no longer work with your previous version of TSS. Trillium recommends that you back up any existing repositories.

- d. Click **Next**. You are prompted for username and password.



- e. In **Username** enter the username associated with the repository you are upgrading or converting.
- f. In **Password**, enter the password for the user.
- g. Click **Next**. The login credentials are verified. (Once validation is successful, the repositories are stored in the \15\Data folder after repository installation is complete. Click **Change** to specify a different folder location).

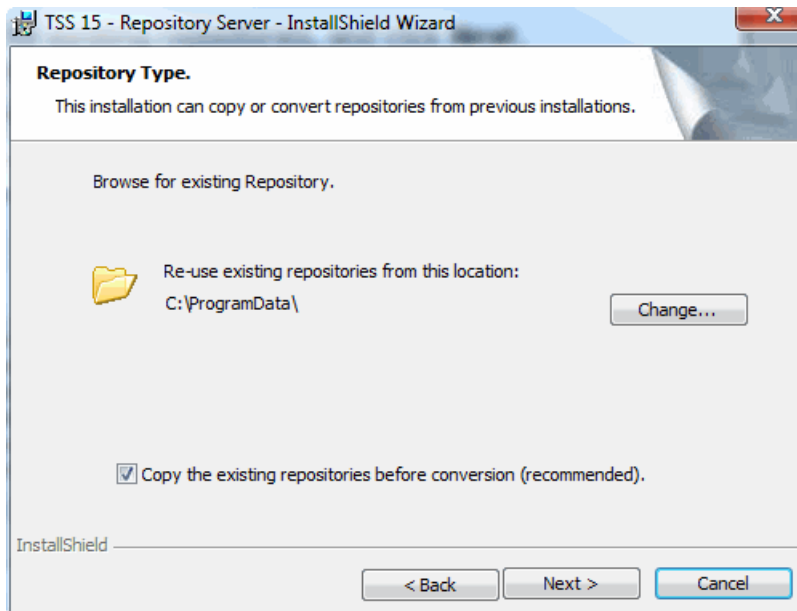
- h. Click **Next**. The Repository Folder window opens.
- i. Proceed to step [11 on page 60](#).

Browse for existing repositories

Use the following procedure to search for existing repositories that are not associated with any previous TSS installation.

► To browse for existing repositories

When you select Browse for existing repositories option, and click **Next**, the Browse for existing repositories window opens.



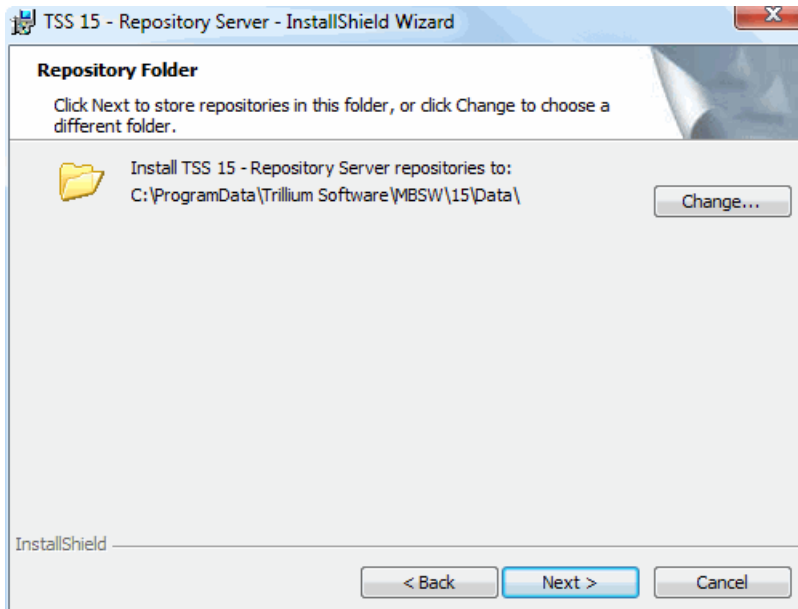
- a. Click **Change**.
- b. Browse and select a repository server to re-use.
- c. Click **Next**. The Repository Folder window opens.

- d. Verify that the **Copy the existing repositories before conversion** box is checked.



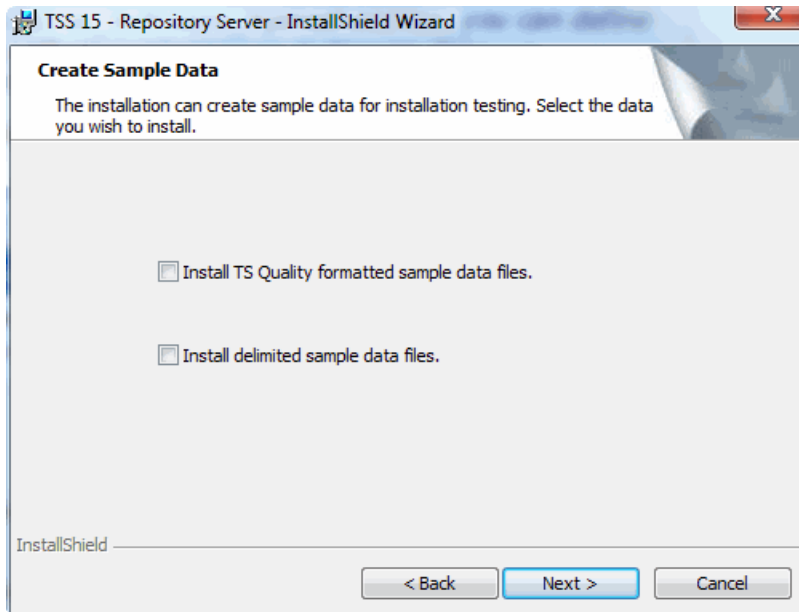
If you do not copy the existing repositories, the conversion overwrites the existing ones so they will no longer work with your previous version of TSS. Trillium recommends that you back up any existing repositories.

- e. Proceed to step 11.
11. To keep the default location to store repositories in the \15\Data folder, click **Next**. To specify a custom location, click **Change** and select the location.



You were asked to specify a repository server path in step [9 on page 55](#). These two paths must be distinct. For example, if you specified the server path as C:\Trillium_Software\server, you can define the repository path as C:\Trillium_Software\ repository. The **Create Sample Data** window opens.

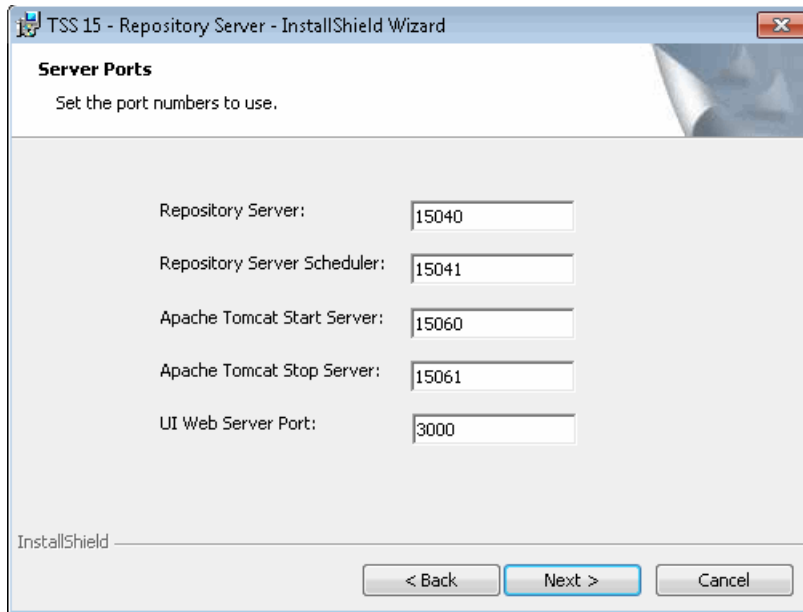
- ① *If you are reusing data from a previous version, you will not see the Create Sample Data window.*



12. Select one or both options if you want to install the sample data, then click **Next**. The sample data allows you to create simple entities and projects and get familiar with TSS.

If you do not select any option, the server does not install the sample data files.

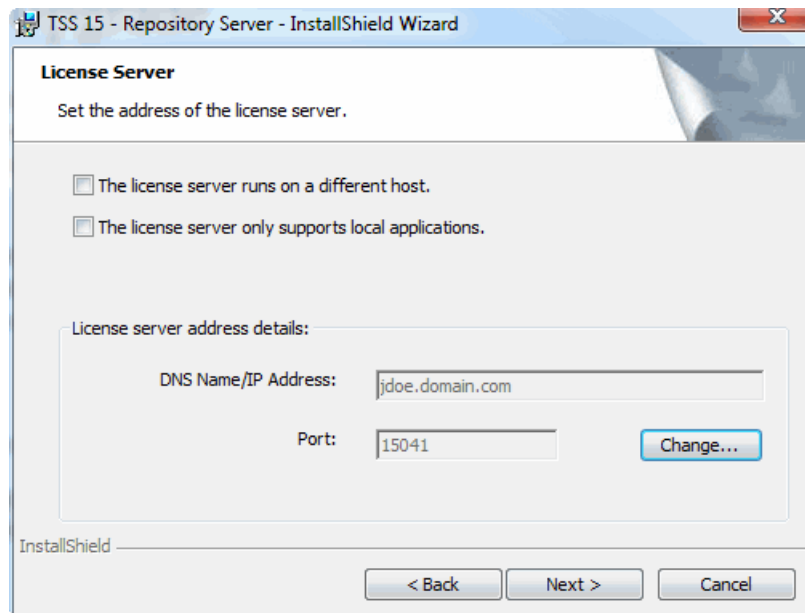
The **Server Ports** window opens.



13. Specify the server port numbers.
 - a. In **Repository Server**, enter a port number or keep the default 15040.
 - b. In **Repository Server Scheduler**, enter a port number or keep the default 15041.
 - c. In **Apache Tomcat Start Server**, enter a port number or keep the default 15060.
 - d. In **Apache Tomcat Stop Server**, enter a port number or keep the default 15061.
 - e. In **UI Web Server Port**, enter a port number or keep the default of 3000.
14. Click **Next**. The License Server window opens.

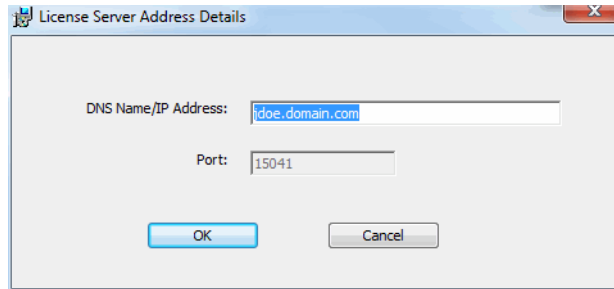
The license server is a service that authorizes your site to perform certain functions within TSS. The license server can be hosted by the

Repository Server Scheduler service or by a different service or daemon.



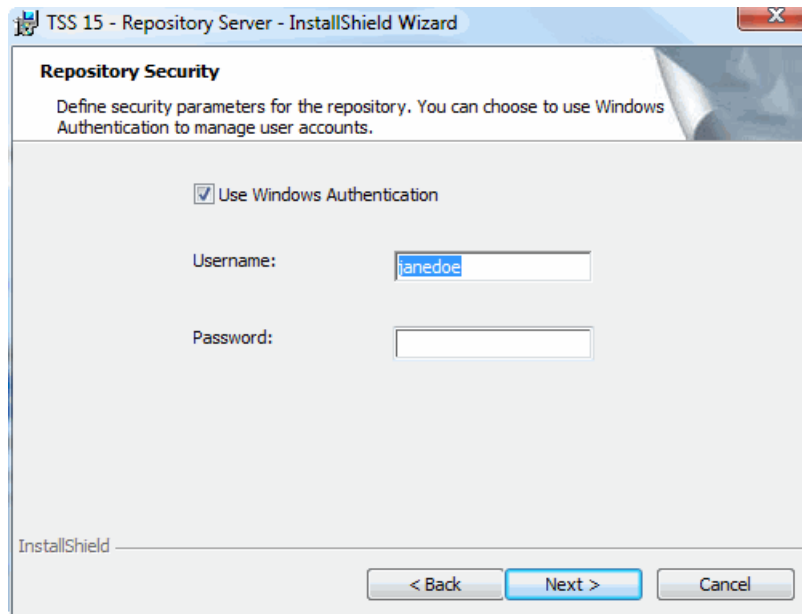
15. Select one of the following options:
 - **The license server runs on a different host** - Select this option to install the repository server on more than one machine and to host the license server on a remote machine. For this option, you do not need to activate the license file on the remote server since the remotely hosted server is already actively licensed.
 - **The license server only supports local applications** - Select this option to install the repository server and client applications (such as the Control Center) on the same machine. For this option, you will need to activate the license file. The server, once installed locally, is accessible to remote clients.
- If you do not select any option, the server is installed locally and is accessible to remote clients.

- a. For **The license server runs on a different host** option, go to the License server address details section and click **Change**. The License Server Address Details window opens.



- b. In **DNS Name/IP Address**, enter the fully qualified domain name or the IP address of the machine where the license server is installed.
 - c. In **Port**, enter the port number associated with the license server.
 - d. Click **OK**.
16. Click **Next**.

The Repository Security window opens.



17. Configure Windows authentication (default) or Trillium authentication. Windows authentication establishes the Windows Active Directory for TSS users. This option is more robust when defining repository security levels. See the *TSS Repository Administrator's Guide* for information on TSS user security. Save the repository administrator login credentials in a safe place. This information is needed to log into Repository Administration Command Prompt and the Repository Manager.

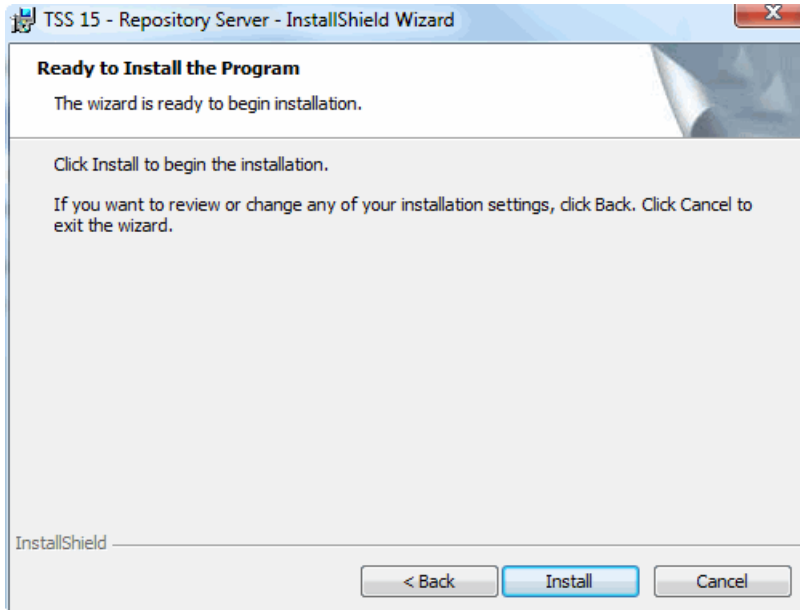
► **To configure Windows authentication**

- a. In **Username**, enter the name of the Windows administrator who will manage the Trillium repositories.
- b. In **Password**, enter the password of the user.

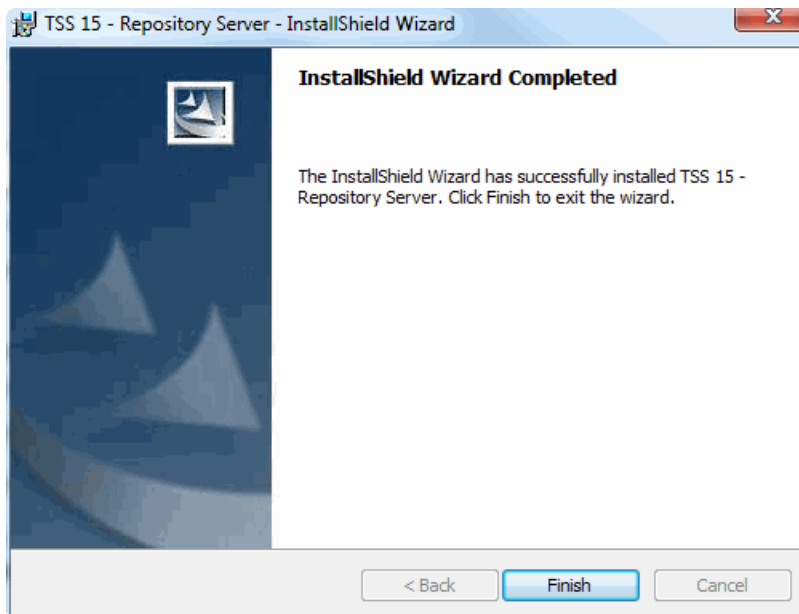
► **To configure Trillium authentication**

- a. Clear the **Use Windows Authentication** selection.
- b. In **Username**, type a name for the repository administrator.

- c. In **Password** and **Confirm Password**, enter the password for the user.
18. Click **Next**. The Ready to Install window opens.



19. Click **Install** to begin the installation. A progress window shows the progress of the installation. When the installation is complete, the InstallShield Wizard Completed window opens (see next page).
- ① *If you are upgrading or converting existing repositories, the process may take anywhere from a few minutes to several hours, depending on the size of the repositories you are re-using. Refer to the `mtb_server.log` to check the status of the upgrade/conversion. If the conversion stopped before completion, contact Trillium Technical Support to resolve the issue.*



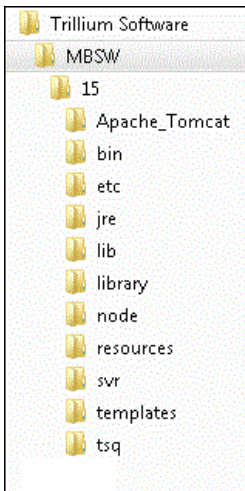
20. Click **Finish** to close the wizard.
21. Restart your system if prompted to perform a restart.
22. Ensure that the ports are not blocked by your firewall. If they are, use Windows Firewall with Advanced Security, Inbound and Outbound rules, and set the **Allow the Connection** option.

Examining Directory Structures and Files

After you have completed repository server installation, navigate to the following directories and verify that you have the files and folders listed in the image below.

Repository Server

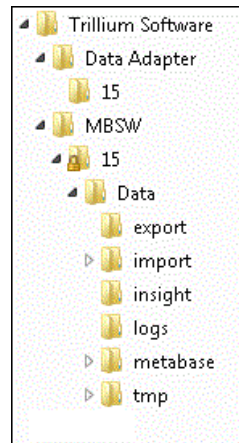
If you selected the default directory during the repository server installation, your server directory structure will look like this:



This book refers to the path that you specified during installation as the **repository server path**.

Repository

If you selected the default repository directory during the repository server installation, the repository structure will look like this:



This book refers to the path that you specified during installation as the **repository path**.

Activating Trillium Software System License on Windows

Before you can begin to use TSS 15, activate the license key that was shipped with the product.

The license is attached to the email that contains the instructions to download the TSS software from the TSS Download Center (File Portal) FTP website.

► To activate the license key

1. Log in to the repository server as the TSS application administrator.
2. Copy the `license.txt` file to `Server_Install_Path\etc`

For example, if the server path is:

```
C:\Program Files(x86)\Trillium Software\MBSW\15\
```

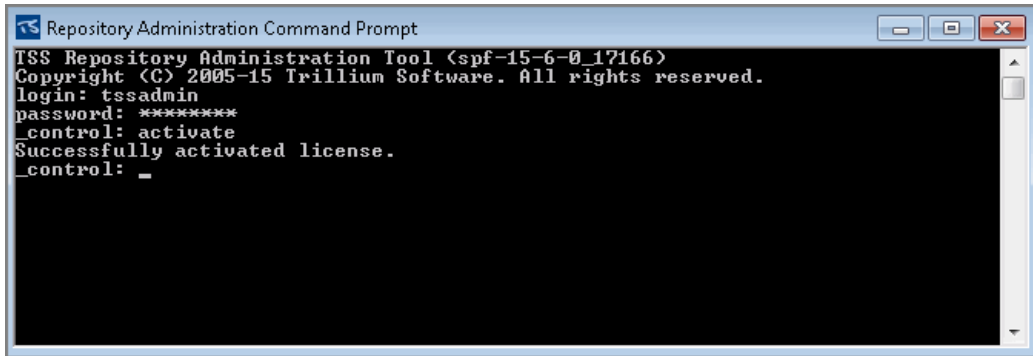
copy the `license.txt` file to:

```
C:\Program Files(x86)\Trillium Software\MBSW\15\etc
```

i *If you did not receive a license key, contact Trillium Software Customer Support at techsupport@trilliumsoftware.com.*

3. Click **Start > All Programs > Trillium Software > TSS 15 > Repository Administration Command Prompt** to open the Repository Administration Command Prompt.
4. Log in using the TSS repository administrator credentials. For Windows authentication, provide the fully qualified Windows user name (for example, `tssadmin@domain.com`).
5. Press **Enter**.
6. If you converted an existing repository, you are prompted for a repository name. Provide the repository name and press **Enter**.

7. At the prompt `_control:`, enter `activate` then press **Enter**.



```
Repository Administration Command Prompt
TSS Repository Administration Tool (spf-15-6-0_17166)
Copyright (C) 2005-15 Trillium Software. All rights reserved.
login: tssadmin
password: *****
_control: activate
Successfully activated license.
_control: _
```

You see the message: **Successfully activated license.**

8. Type `exit` to close the command prompt.
 - ① *The `_control` repository is a special repository that allows you to set up your system. Never log in to the `_control` repository and import data to it.*

Starting TSS Scheduler on Windows

Before you can begin working with TSS, you must start TSS 15 Scheduler.

► To start TSS Scheduler

1. Log in as the TSS application administrator.
2. From the Windows Control Panel, open **System and Security > Administrative Tools > Services**.
3. Select the service named **TSS 15 - Scheduler**.
4. Set the Windows Service **TSS 15 - Scheduler** to a domain service account user with access to the server hosting the database to which you connect to load data (create real, fully-loaded entities).
5. Right-click and select **Start**. The Status changes to Started.
6. As with TSS 15 - Scheduler, set the **TSS - inetd** service to also run as a Windows domain account instead of a system account.

Starting Apache Tomcat on Windows

If you plan to use 32-bit TS Web Services, part of the Enterprise Connectivity Solutions (ECS), you must start Apache Tomcat. Use the batch file (`startup.bat`) or install Tomcat as a service.

You must first set the `JRE_HOME` (and `JAVA_HOME` for JDK) environment variable. To verify your Java version, open a command prompt and enter `java -version`. Ensure Java 1.8 32-bit version is installed.

► To start Apache Tomcat on Windows using the start-up batch file

1. Log in as a user with system administrator privileges and open a command window (`cmd.exe`).
2. Verify that the `JRE_HOME` variable (and `JAVA_HOME` for JDK) in the `setenv.bat` file is set to your Java JRE location. For example:

```
JRE: Set JRE_HOME=C:\Program Files (x86)\Java\jre1.8.0_102
Set PATH=%JRE_HOME%\bin;%PATH%
```

```
JDK: Set JAVA_HOME=C:\Program Files (x86)\Java\jdk1.8_102
Set JRE_HOME=%JAVA_HOME%\jre
Set PATH=%JRE_HOME%\bin;%PATH%
```

The `setenv.bat` file is located in `C:\Program Files (x86)\Trillium Software\MBSW\15\Apache_Tomcat\bin`

3. Run the start-up script `startup.bat`, located in `C:\Program Files (x86)\Trillium Software\MBSW\15\Apache_Tomcat\bin`. A Tomcat window opens. Allow the startup process to complete before attempting to use Tomcat.
4. Verify that Tomcat started correctly by checking the Tomcat server at `http://localhost:port/`.
5. To shut down the server, run the `shutdown.bat` file, also in the `Apache\bin` directory.

► **To install Apache Tomcat on Windows as a service (with setenv.bat)**

1. Log in as a user with system administrator privileges and open a command window (`cmd.exe`).
2. To set `JRE_HOME`, navigate to the Tomcat bin directory (`C:\Program Files (x86)\Trillium Software\MBSW\15\Apache_Tomcat\bin`) and enter `setenv.bat`
3. Enter `service install`
4. To verify the Tomcat service was installed, enter `Tomcat8w` to return the path of the installation.
5. Open the **Administrative Tools > Services** window and confirm the **Apache Tomcat 8.0 Tomcat8** displays in the services list.

► **To install Apache Tomcat on Windows as a service (without setenv.bat)**

1. Log in as a user with system administrator privileges.
2. Open the System Properties window and click the **Advanced** tab.
3. Click **Environment Variables** to open the Environment Variables window.
4. Verify that your `JRE_HOME` system variable is set to your Java JRE location, for example, `C:\Program Files\Java\jre1.8.0_102`. Add the variable if necessary.
5. From an Administrative command prompt, navigate to the Tomcat bin directory; for example, `C:\Program Files (x86)\Trillium Software\MBSW\15\Apache_Tomcat\bin`
6. Enter `service install`. If you have not set `JRE_HOME`, you are prompted to do so now. If prompted to start the Commons Daemon Service Runner, click **Yes**.

The message **The service 'Tomcat8' has been installed** displays.

7. To verify the Tomcat service was installed, enter `Tomcat8w` to return the path of the installation.

8. Open the **Administrative Tools > Services** window and start the **Apache Tomcat 8.0 Tomcat8** service.

Starting TSS RestAPIs on Windows

The TSS 15-RestAPIs service starts automatically and does not require a manual start.

If you need to **restart** the service, use the instructions below.

► To restart TSS RestAPIs

1. Log in as the TSS administrator.
2. From the Windows Control Panel, open **System and Security > Administrative Tools > Services**.
3. Select the service named **TSS 15 - RestAPIs**.
4. Set the Windows Service **TSS 15 - Rest API** to a domain service account user with access to the server hosting the database to which you connect to load data (create real, fully-loaded entities).
5. Right-click and select **Start**.

Installing TSS Country Templates

This chapter contains instructions on how to install the country templates. When you create a name and address project in TS Quality, you will typically use a template for each country whose data is present in the entity you used to create the project. Each country template supplies a pre-built set of TSS best practices and business rules optimized for that country.

- ① *Trillium Software subscribes to many country-specific postal services that enable us to expand our worldwide coverage and provide a central location to acquire data for low- to mid-tier economic regions.*

This chapter includes:

- [Installing the Country Templates on UNIX on page 74](#)
- [Installing the Country Templates on Windows on page 83](#)

Installing the Country Templates on UNIX

You can install the country templates on a UNIX machine:

- [Using the InstallShield Wizard](#)
- [Using the Console Mode](#)

Using the InstallShield Wizard

To install country templates using the InstallShield wizard, a Graphical User Interface (GUI) must be present. When installing on UNIX, InstallShield uses the X Window System. If a PC is serving as the user interface for a UNIX installation, an X Server — such as Hummingbird eXceed — must be running on the PC.

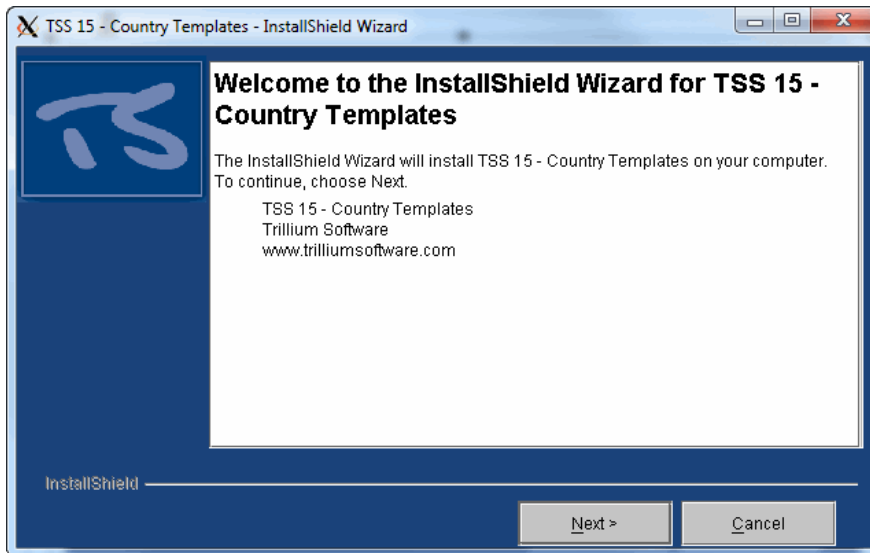
► To install country templates using the InstallShield wizard

1. Log on as the TSS application administrator.
2. If you have not yet done so, download the setup file from TSS Download Center (File Portal) FTP site.
3. Locate the following directory: `/[platform]Server`
4. Unzip and copy the setup file to the tmp directory on your UNIX server.

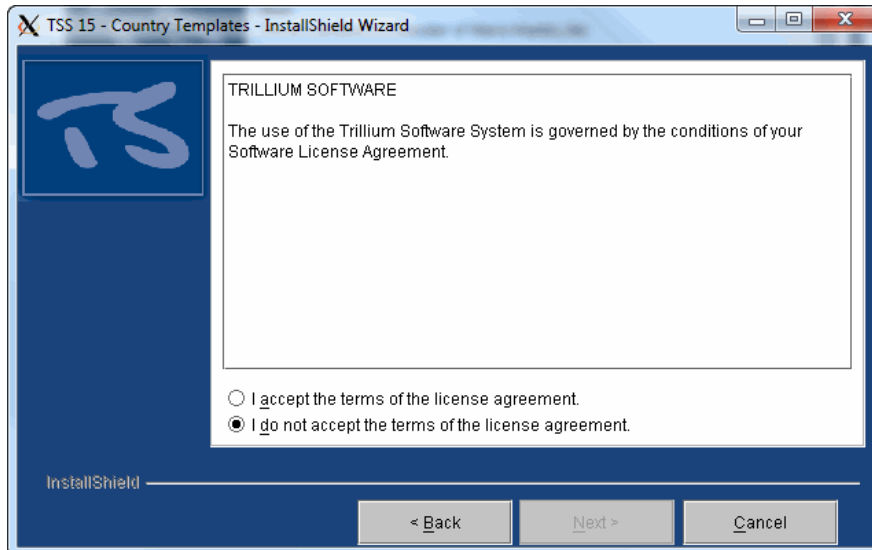
① *For Linux, the /tmp directory you copy the setup file to must have executable permissions set.*

5. Set execute permissions on the setup file:
`chmod +x tss_ct_version.build_platform.bin`
6. Run the setup file. For example,:
`tss_ct_version.build_sunos.bin`

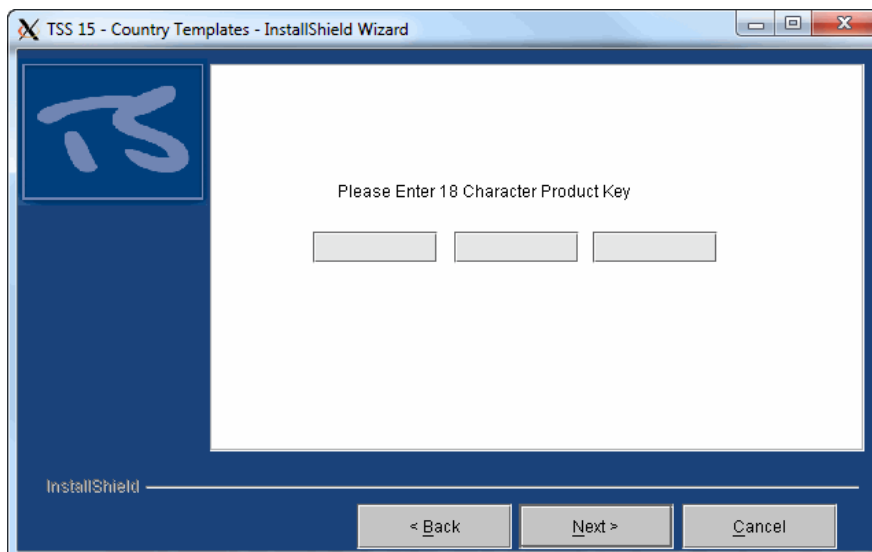
The installation program starts and shows the Welcome message.



7. Click **Next**. The License Agreement window opens.



8. Read the License Agreement, click the **I accept the terms of the agreement** option.
9. Click **Next**. The Product Key window opens. The Product Key determines which country templates and city tables are installed.

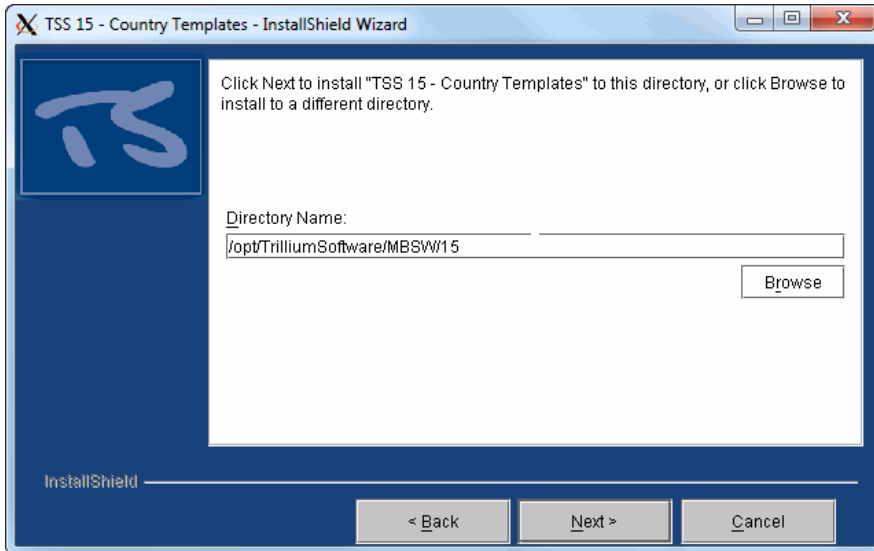


10. Enter the **18-Character Product Key**. The product key contains information on which countries are supported as part of your license agreement with Trillium Software.

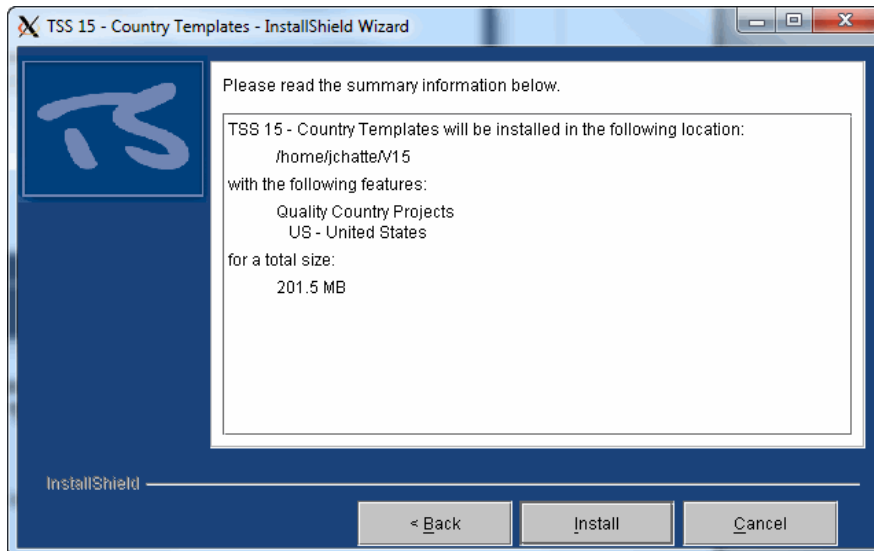
the product key is attached to the email that contains the instructions to download the TSS software from the TSS Download Center (File Portal) FTP website.

11. Click **Next**. The Destination Directory window opens.
12. Click **Next** to install to the default location. Keep in mind that the country templates must be installed at the same location where you installed the repository server.

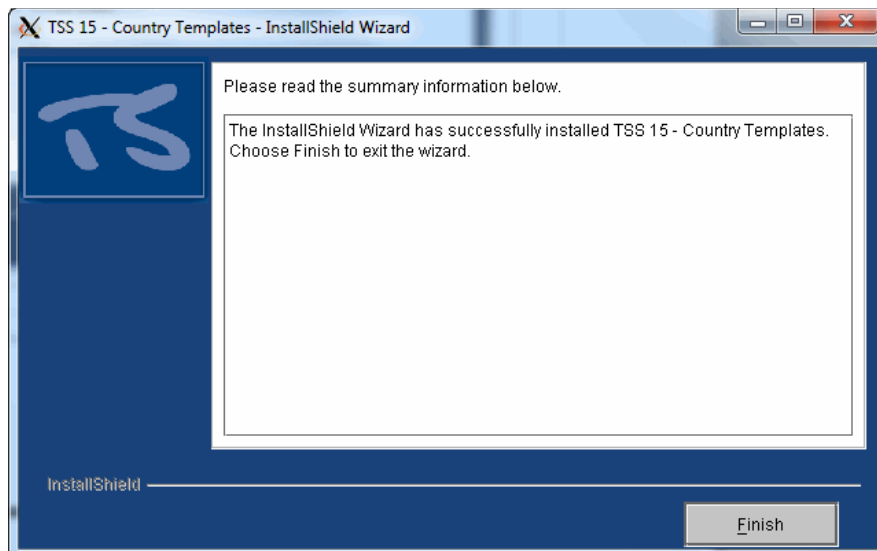
If you installed the repository server at a custom location, click **Browse** to select the custom repository location and then click **Next**.



13. Click **Next**. The Summary window opens listing the country templates that are installed.



14. Click **Install** to begin installation. The InstallShield Wizard displays the progress of the installation. When installation is complete, the installation completed window opens.



15. Click **Finish** to close the wizard.

Using the Console Mode

Use the following procedure to install the country templates in console mode.

To install country templates in console mode

1. Log on as the TSS administrator.
2. If you have not yet done so, download the setup file from TSS Download Center (File Portal) FTP site.
3. Locate the following directory: `/CountryTemplates`
4. Copy the setup file to a convenient location on your UNIX server. If you downloaded a zip file, unzip and copy the file.
5. Set execute permissions on the setup file:
`chmod +x tsq15.platform.bin`
6. Run the setup file. For example,:
`./tss_ct_version_sunos/.sh -console`
The setup prepares for the installation and opens the console.
7. Press **Enter**. The license agreement opens.

8. Read the license agreement, and if you agree, type **1**, then press **Enter**.

```
Welcome to the InstallShield Wizard for TSS 15 - Country Templates

The InstallShield Wizard will install TSS 15 - Country Templates on your
computer.
To continue, choose Next.

TSS 15 - Country Templates
Trillium Software
www.trilliumsoftware.com

Press 1 for Next, 3 to Cancel or 5 to Redisplay [1]

-----
TSS 15 - Country Templates - InstallShield Wizard
Please read the following license agreement carefully.

TRILLIUM SOFTWARE

The use of the Trillium Software System is governed by the conditions of your
Software License Agreement.

Please choose from the following options:
[ ] 1 - I accept the terms of the license agreement.
[X] 2 - I do not accept the terms of the license agreement.

To select an item enter its number, or 0 when you are finished: [0] 1
```

9. Press **Enter** again to accept the license agreement and proceed. The product Key prompt opens.

The product key is attached to the email that contains the instructions to download the TSS software from the TSS Download Center (File Portal) FTP website.

10. Enter your product key and press **Enter**.

```
Press 1 for Next, 2 for Previous, 3 to Cancel or 5 to Redisplay [1]

-----
TSS 15 - Country Templates - InstallShield Wizard
Please Enter 18 Character Product Key: [PRODUCTKEY] 009004-001000-0S0200
-----
Product Key = 009004-001000-0S0200
-----
```

The **Destination Directory** prompts opens. Keep in mind that the country templates must be installed at the same location where you installed the repository server.

11. Type the location where the country templates should be installed.
12. Press **Enter**. The Country Templates summary opens.
13. Review the summary screens, pressing **Enter** to display the next screen. Alternately, type **q** to bypass the summary screens.
14. Press **Enter** to install. A progress bar opens showing the progress of the installation.

```
Press 1 for Next, 2 for Previous, 3 to Cancel or 5 to Redisplay [1]
-----
TSS 15 - Country Templates - InstallShield Wizard
TSS 15 - Country Templates will be installed in the following location:
/home/jchatte/V15
with the following features:
Quality Country Projects
  US - United States
for a total size:
201,5 MB
Press 1 for Next, 2 for Previous, 3 to Cancel or 5 to Redisplay [1]
-----
TSS 15 - Country Templates - InstallShield Wizard
Installing TSS 15 - Country Templates. Please wait...
█
```

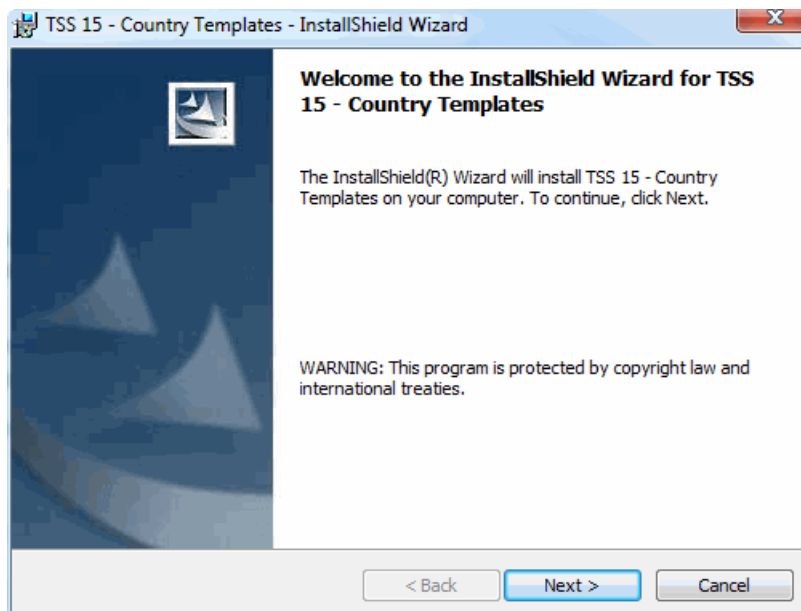
15. Press **Enter** to finish.

Installing the Country Templates on Windows

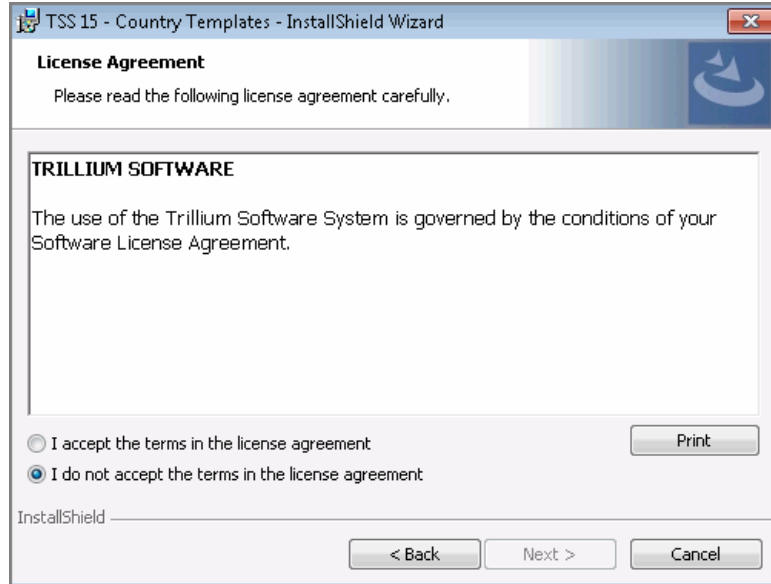
Use the following procedure to install the country templates on a Windows server.

► To install the country templates

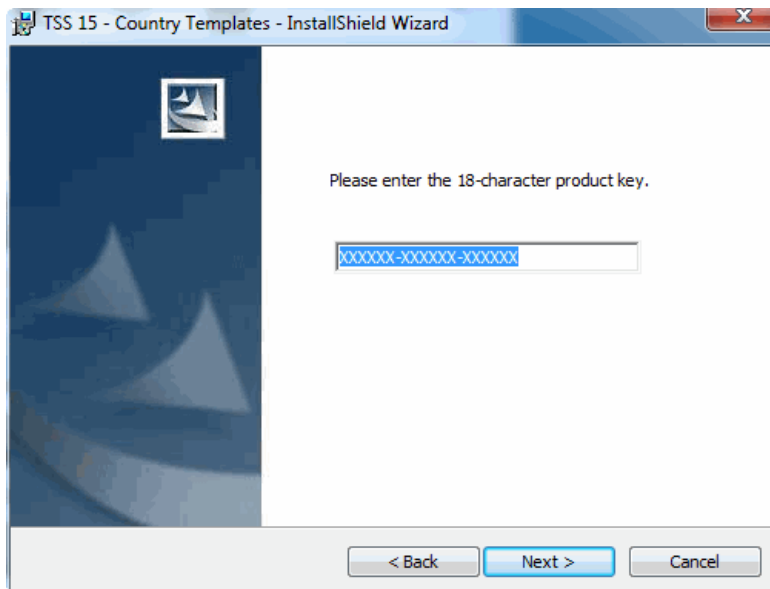
1. Log in as the Windows administrator.
2. If you have not yet done so, download the setup file from TSS Download Center (File Portal) FTP site.
3. Locate the \CountryTemplates folder.
4. Double-click the setup file to begin the installation. The InstallShield Wizard gathers the required information and shows the welcome message.



5. Click **Next**. The License Agreement window opens.
6. Read the License Agreement and select **I accept the terms in the license agreement** option.



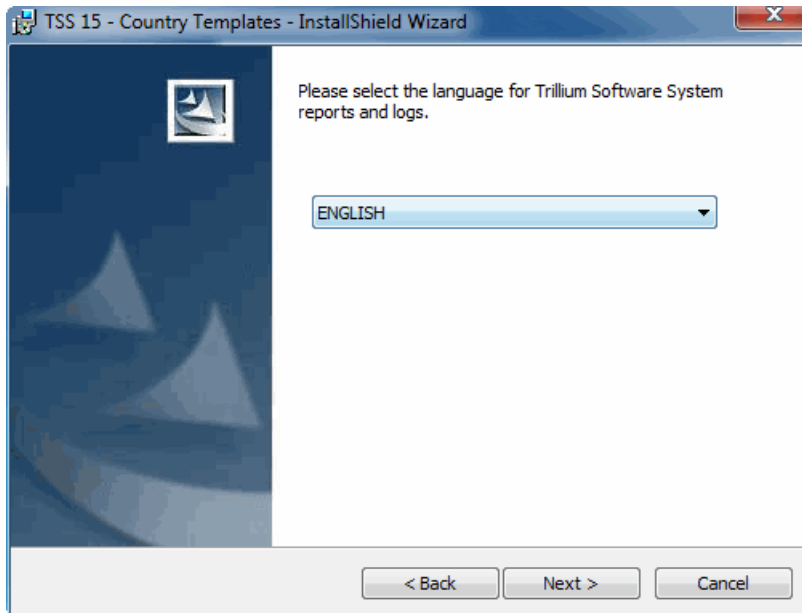
7. Click **Next**. The Product Key window opens. The product key contains information on which countries are supported as part of your license agreement with Trillium Software.



8. Enter a valid 18-character product key and click **Next**.

The product key is attached to the email that contains the instructions to download the TSS software from the TSS Download Center (File Portal) FTP website.

The Language window opens, with ENGLISH as the default language to use for reports and log files.



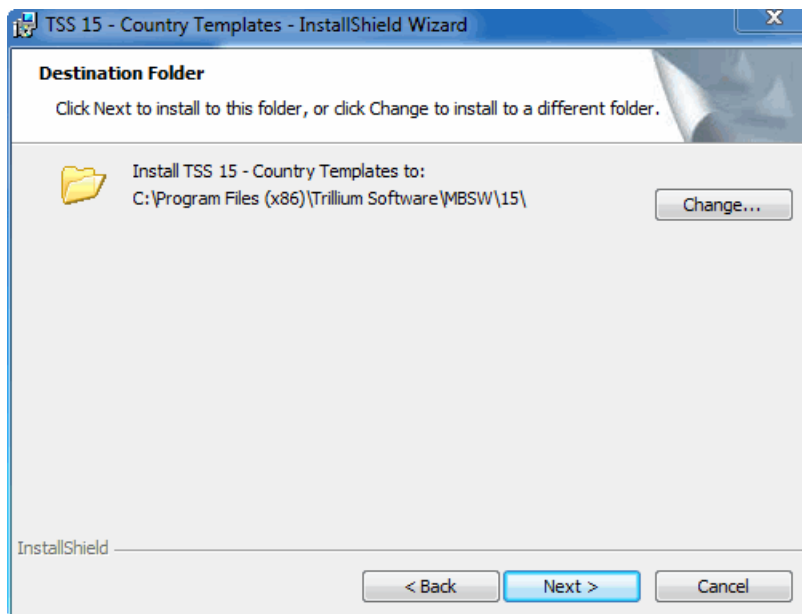
9. To choose another language, click the drop-down list and select from the available languages.

ⓘ This language setting only affects TS Quality processes running outside the Control Center.

10. Click **Next**. The Destination Folder window opens.

Alternately, click **Change** to specify a different location, then click **Next**.

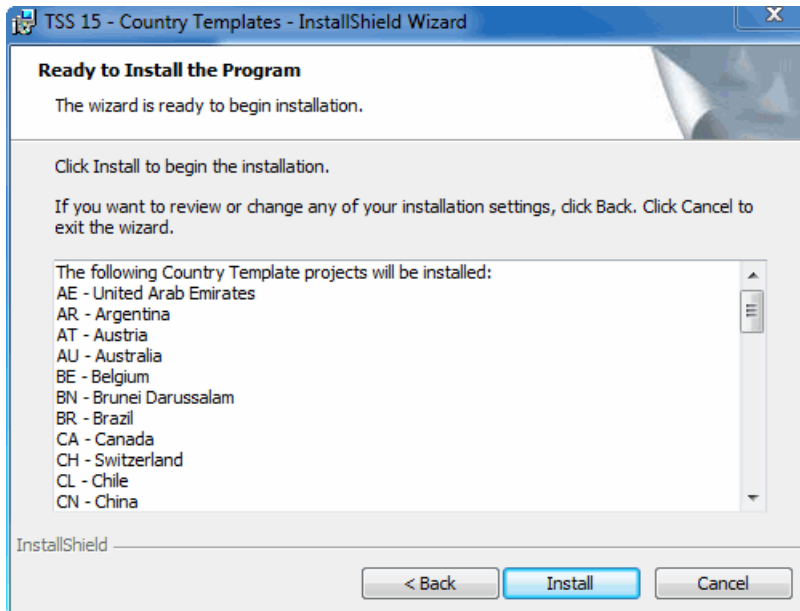
The Destination Folders window opens.



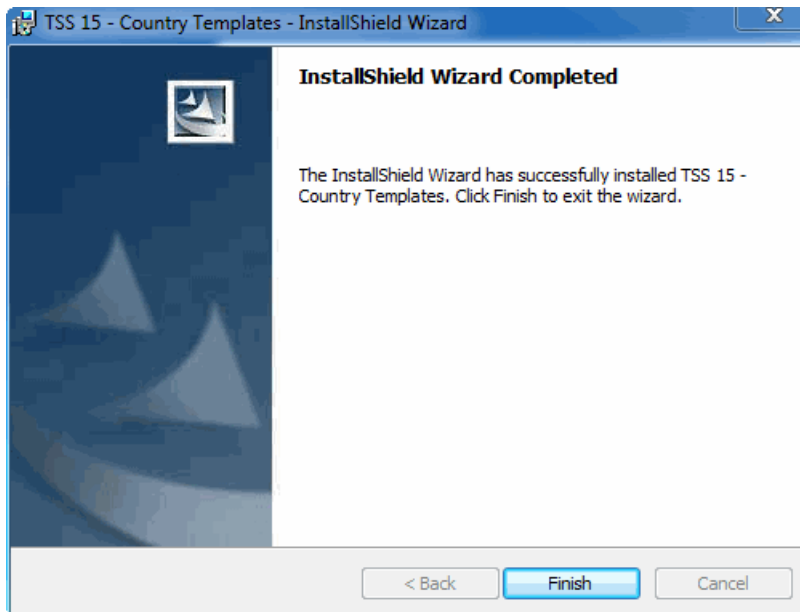
11. Click **Next** to install to the default location (country templates must be installed at the same location where you installed the repository server).

If you installed the repository server at a custom location, click **Change** and browse to that location. Then click **Next**.

The Ready to Install window opens listing all the countries for which templates are installed. (Only the countries for which you are licensed for appear in the list.)



12. Click **Install** to begin the installation. A status window shows the progress. When the installation is complete, the **InstallShield Wizard Completed** window opens.



13. Click **Finish** to close the wizard.

CHAPTER 4

Installing the Control Center

This chapter contains instructions on how to install the Control Center on a client (Windows) system and includes the following sections:

- [Installation Checklist on page 91](#)
- [Installing the Control Center on page 92](#)
- [Examining Directory Structure on page 100](#)

Installation Checklist

Before you install the Control Center:

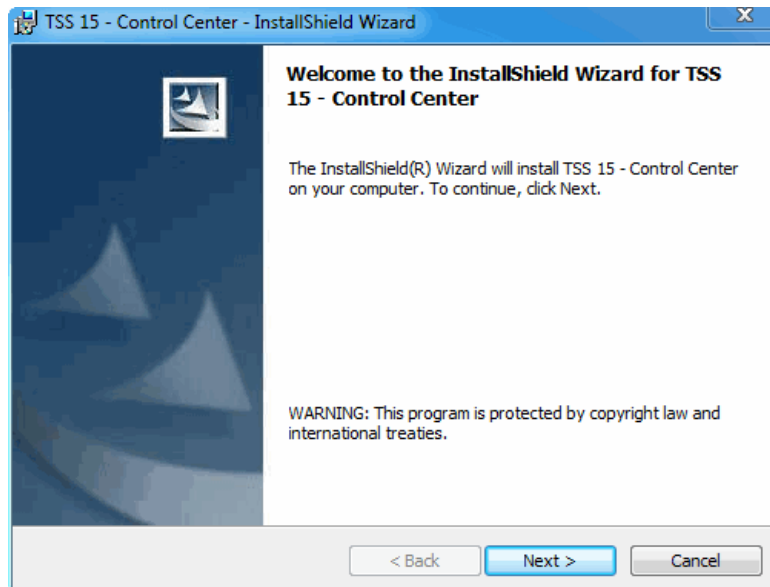
- Familiarize yourself with the install setup and any associated release notes.
- Consult the checklist on [page 22](#) to verify that your system meets the hardware and software requirements.
- Verify network connectivity and access to the repository server by issuing a telnet command from the TSS client machine to the server.
- If you cannot telnet to the repository server, you will not be able to install the Control Center.
- If you have installed TS Quality, verify connectivity and access to TS Quality.
- If you are installing the Control Center on Windows 7, Windows 8/8.x, Windows 2008 or Windows 2012 turn off the Windows User Account Control function. For more information, see [About User Permissions \(UAC\) on page 26](#).

Installing the Control Center

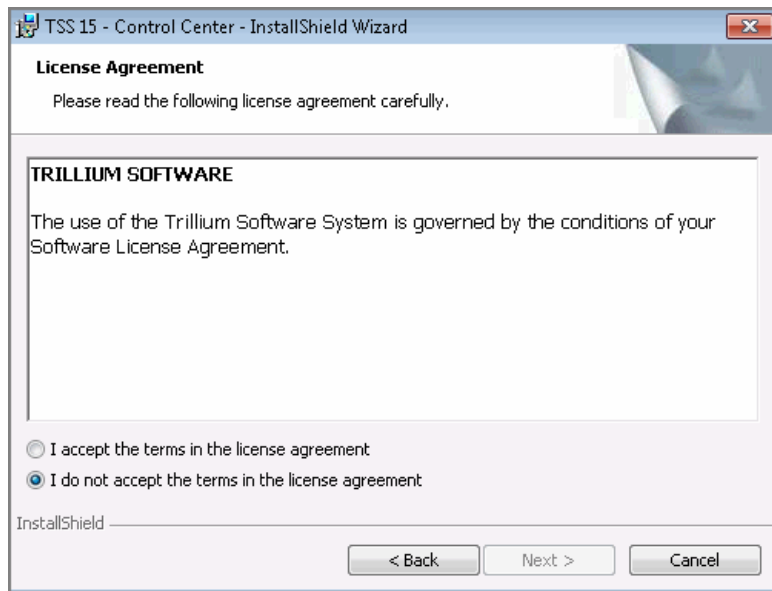
The Control Center uses DLLs that are common to other TSS client applications. To ensure that the latest common DLLs are installed along with the Control Center, you may be asked to shut down some applications before installing the Control Center.

► To install the Control Center

1. Log in the Windows system as the Windows Administrator.
2. If you have not yet done so, download the setup from TSS Download Center (File Portal) FTP site.
3. Go to the Control Center Client directory.
4. Double-click the setup file to begin the installation. The InstallShield Wizard gathers the required information and shows the welcome message.

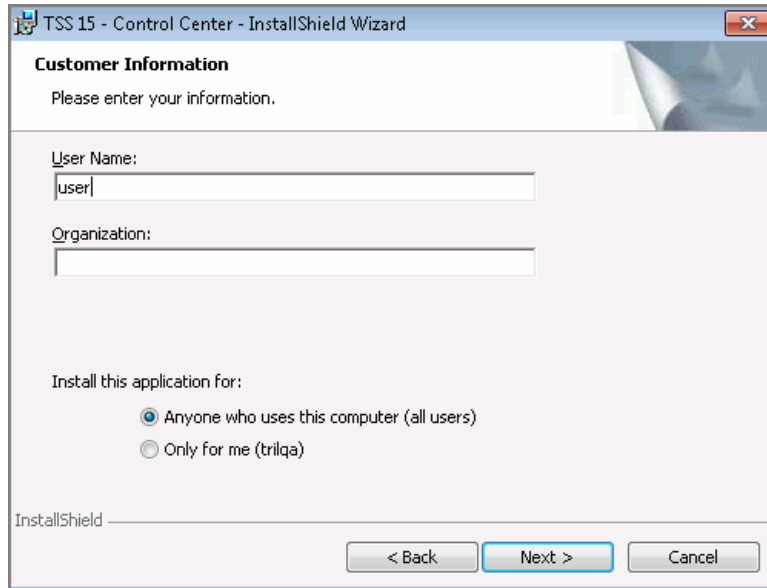


5. Click **Next**. The License Agreement window opens.



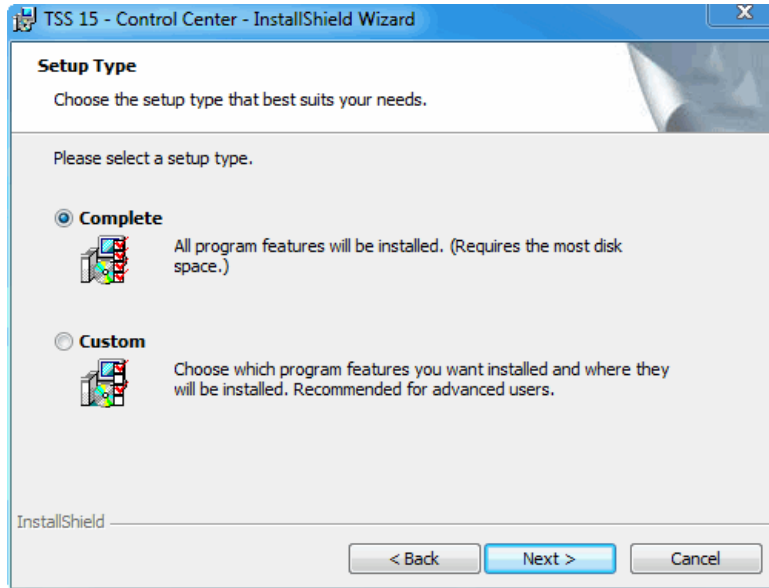
6. Read the agreement and if you agree, select **I accept the terms in the license agreement** option.

7. Click **Next**. The Customer Information window opens.

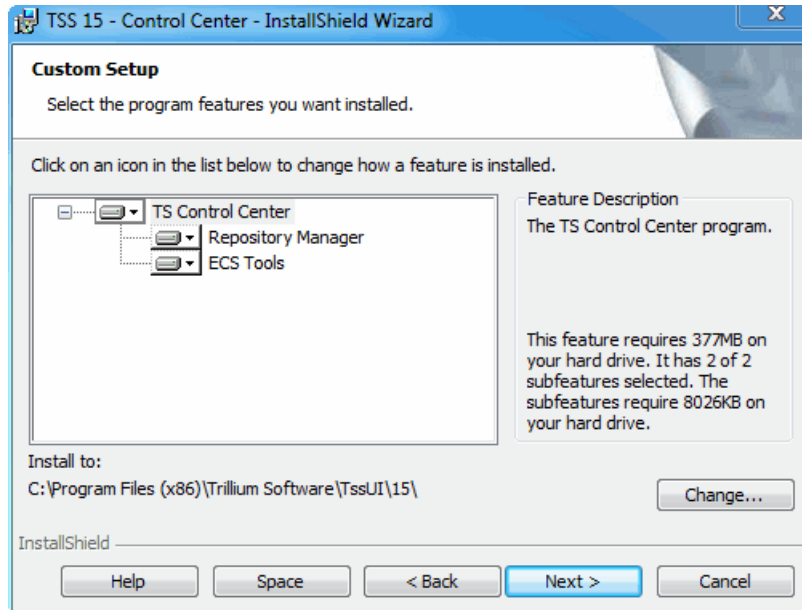


8. In **User Name**, enter your name. This is an optional configuration.
9. In **Organization**, enter your organization information. This is an optional configuration.
10. In the Install this application for: section, select from:
 - **Anyone who uses this computer (all users)** - this is the default option
 - **Only for me (Employee Of)** - choose this option to access the Control Center using the login credentials you are currently using.

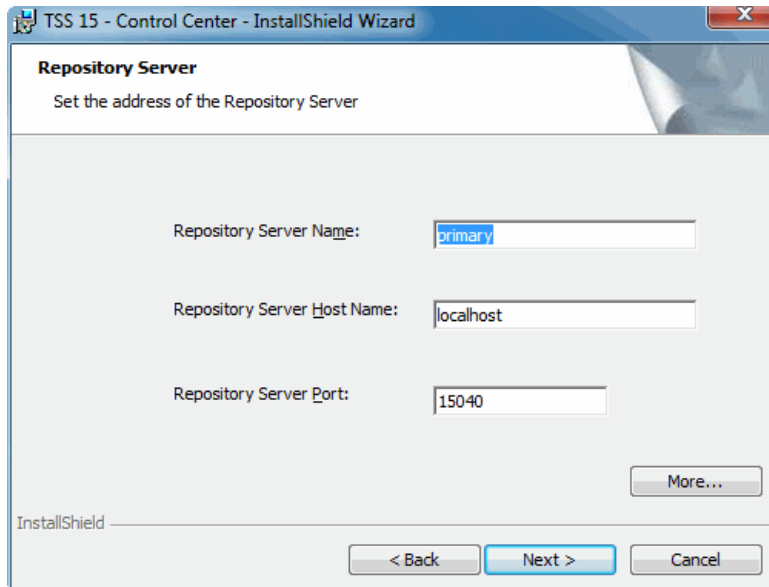
11. Click **Next**. The Setup Type window opens.



12. Select one of the following options.
 - **Complete** - to install all the Control Center components under the default directory:
C:\Program Files (x86)\Trillium Software\TssUI\15\
 - **Custom** - to install the Control Center components in a custom location or to opt out of installing the Repository Manager or ECS Tools.
 - a. Click **Next** to open the **Custom Setup** window.

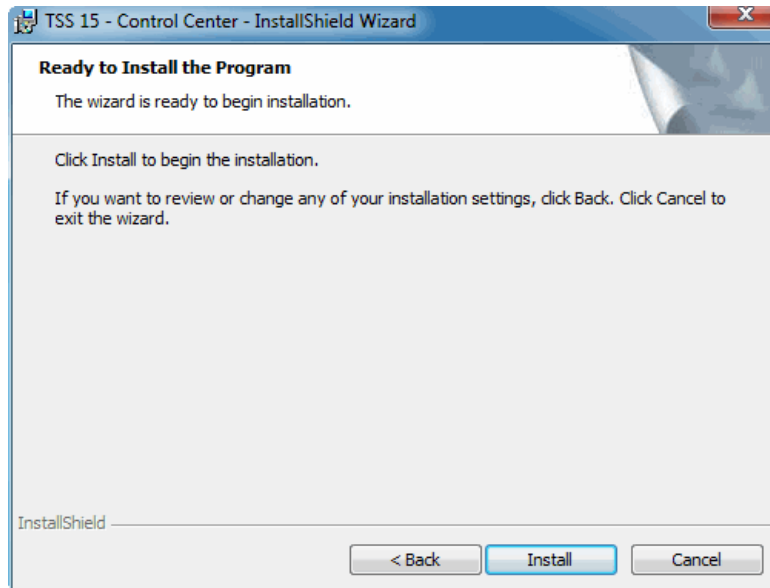


- b. Select the components and features you want to install.
 - c. Click **Change** to select an alternate installation directory.
13. Click **Next**. The Repository Server window opens.

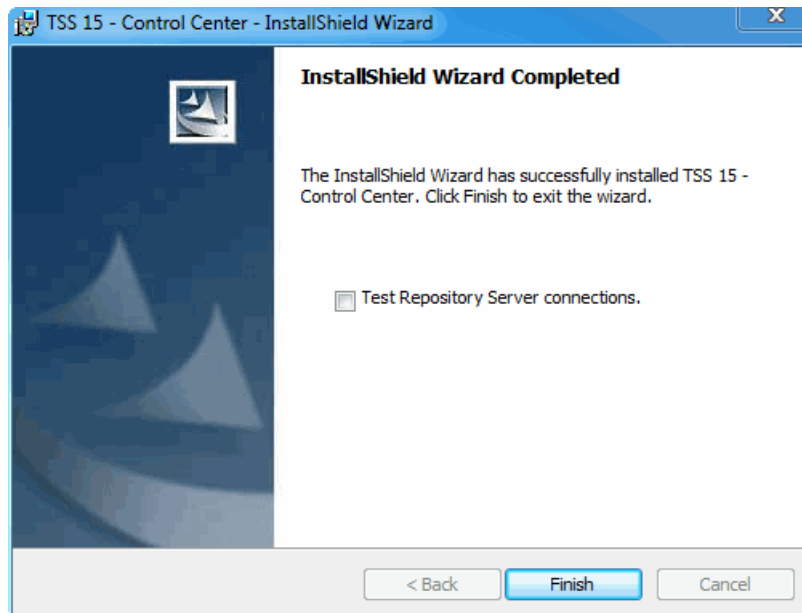


14. Specify the repository server that this client will access.
 - a. In **Repository Server Name**, specify the local name of the repository server or keep the default primary. This name is displayed in the login screens of this client. Choose any name that is meaningful to the person accessing the repository.
 - b. In **Repository Server Host Name**, specify the server host name. The default is localhost - use this if you are installing the Control Center in the same system running the repository server.
 - c. In **Repository Server Port**, enter the repository server login port that was defined during the repository server installation. The default is 15040.
15. To access an alternate repository server, click **More** and define the alternate repository server parameters using information above.

16. Click **Next**. The Ready to Install window opens.



17. Click **Install** to begin the installation. A status bar shows the progress. When installation is complete, the InstallShield Wizard Completed window opens.



18. Select **Test Repository Server connections** option to test server connectivity.

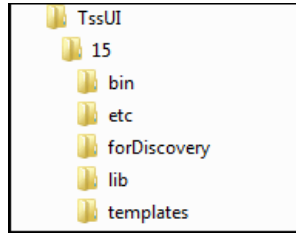
You can also test the connections at any time by selecting Trillium Software > TSS 15 > Test Repository Connections from the Start menu.

19. Click **Finish** to complete the installation.
20. Restart the machine if prompted.

i *If your repository server is running on a UNIX system and you receive any error message, try to log in to the Control Center. If you can open the Control Center without any issues, ignore the error message. If you are unable to log in to the Control Center, contact Trillium Software Customer Support.*

Examining Directory Structure

Once you have installed the Control Center, a new directory structure is created on the client machine. If you selected the default directory during installation, the directory structure will look like this:



CHAPTER 5

Installing the Batch Deployment Tool

This chapter contains instructions on how to install the Batch Deployment Tool (BDT). BDT is used to export a batch script. It can also be used to generate a batch script from a previously exported project definition.

Install the Batch Deployment Tool on every client and server machine that you will use to generate a batch script.

This chapter includes:

- [Installing the Batch Deployment Tool on UNIX on page 102](#)
- [Installing the Batch Deployment Tool on Windows on page 104](#)

Installing the Batch Deployment Tool on UNIX

You can install the BDT on the repository server to export a project definition to a server and create the batch script on the server. Installing the BDT on the server has the following advantages:

- It allows you to make changes to the exported definition files, generate a batch script from the modified project definition, and, if needed, import the modified project definition back into the Control Center to make additional changes without losing any modifications.
- It allows you to easily move the project to a different system before generating the script files, which ensures that the paths used in the project files are correct for the target system.

On a server, you run the Batch Deployment Tool from the command line. See the *Repository Administrator's Guide* for details

► To install the Batch Deployment Tool

1. Log in to the server system where you will install BDT as the TSS Administrator.
2. If you have not yet done so, download the setup from TSS Download Center (File Portal) FTP site.
3. Locate the following directory: `/[platform]Server`
4. Unzip and copy the setup file to a convenient location on your UNIX server.

① *This location should be different from where you copied the repository server installation setup in order to prevent overwriting of files.*

5. Run the setup file. For example:

```
tss_bdt_version.build_sunos.sh
```

If you are having problems running the setup, verify that the setup file has the correct execute permission for the TSS Administrator. If not, use the `chmod` command to grant execute permission.

6. At the prompt **Where would you like to install the Batch Deployment Tool?** enter the name of the install directory (for example, /opt/TrilliumSoftware/bdt).
7. At the prompt **Please check your installation settings to make sure they are correct. Continue installation? (y/n):**, verify that the settings that you have specified are correct.
 - Enter **y** if the settings look correct and you want to continue the installation.
 - Enter **n** if the settings are not satisfactory. The program takes you back to the beginning of the process.

If you enter **y**, the BDT installation begins. When installation is complete, you see the **Batch Deployment Tool installation complete** message.

```
=====
TSS 15 - Batch Deployment Tool Installation, build spf-15-0-0_14163
(c) 2005-14 Trillium Software
=====

Where would you like to install the Batch Deployment Tool? : /home/jchatte/bdt

Please check your installation settings
to make sure they are correct.
Continue installation? (y/n): y

Installing Trillium Software System 15 - Batch Deployment Tool
=====
Untarring binaries...

Batch Deployment Tool Installation complete.
=====
hhdtr1dev01:/home/jchatte/V15_161 %
```

Installing the Batch Deployment Tool on Windows

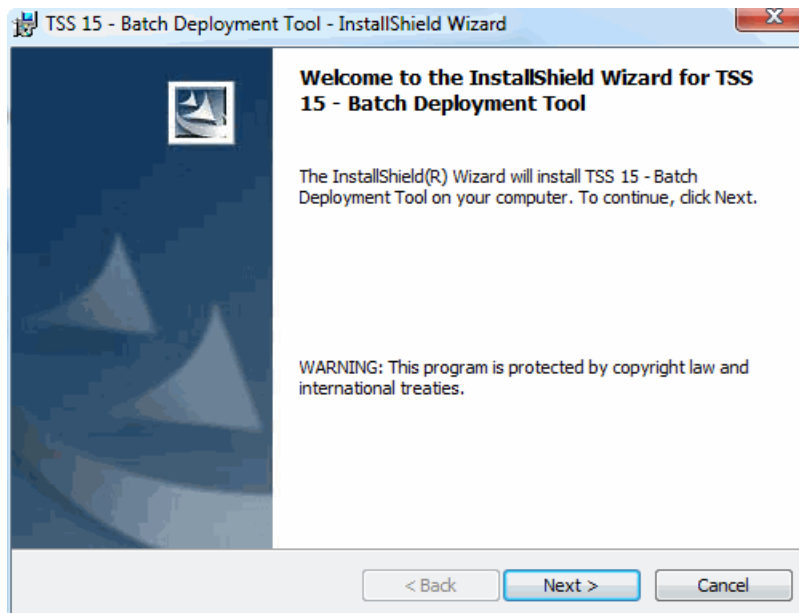
Complete the following procedure for each client system where you plan to export projects.

The BDT uses DLLs that are common to other TSS client applications. Therefore, you may be asked to shut down some applications before installing the BDT so that the latest common DLLs are installed along with the BDT.

► **To install the Batch Deployment Tool**

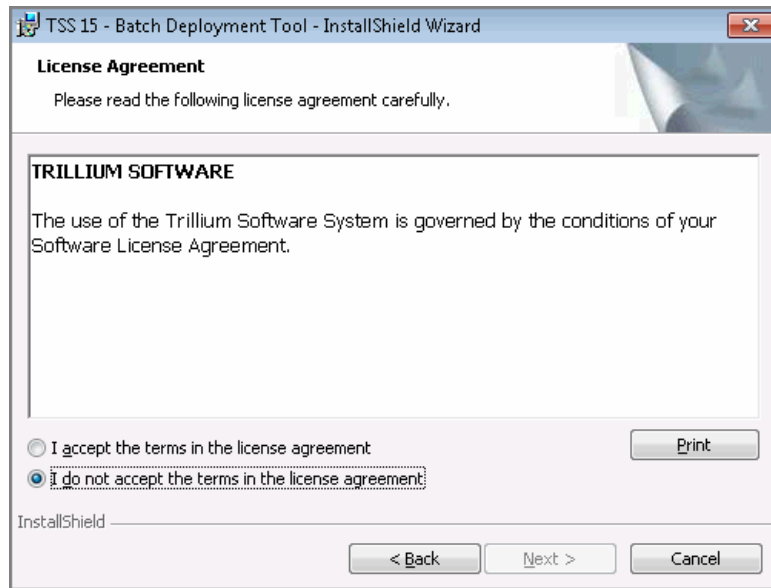
1. If you have not yet done so, download the setup file from TSS Download Center (File Portal) FTP site.
2. Login as the Windows Administrator.
3. Go to the \BDT directory.
4. Double-click the setup file to begin the installation.

The InstallShield Wizard gathers the required information and opens the Welcome window.



5. Click **Next**. The License Agreement window opens.

6. Read the License Agreement and select **I accept the terms in the license agreement** option.

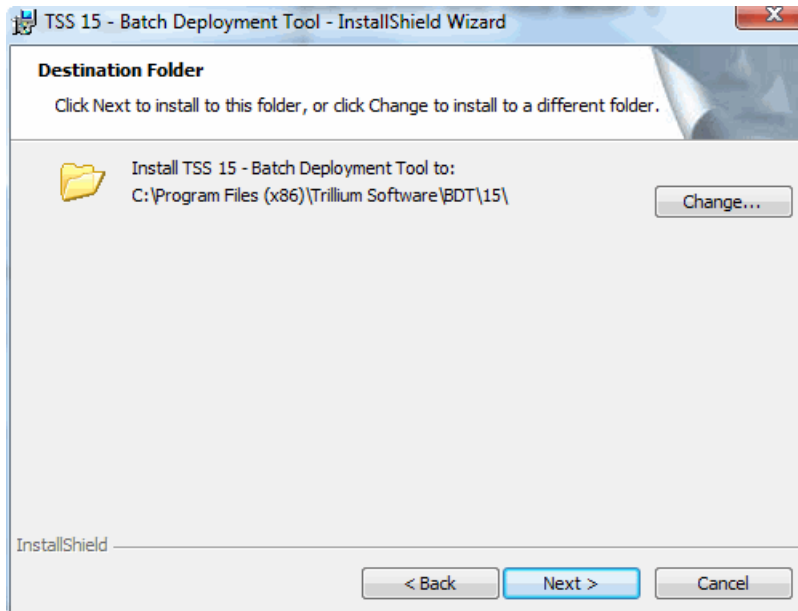


7. Click **Next**. The Customer Information window opens.

The screenshot shows a Windows-style dialog box titled "TSS 15 - Batch Deployment Tool - InstallShield Wizard". The main heading is "Customer Information" with the instruction "Please enter your information." Below this, there are two text input fields: "User Name:" containing the text "user" and "Organization:" which is empty. Underneath the fields is the section "Install this application for:" with two radio button options: "Anyone who uses this computer (all users)" (which is selected) and "Only for me (trilqa)". At the bottom of the dialog, there are three buttons: "< Back", "Next >" (highlighted in blue), and "Cancel". The "InstallShield" logo is visible in the bottom left corner of the dialog area.

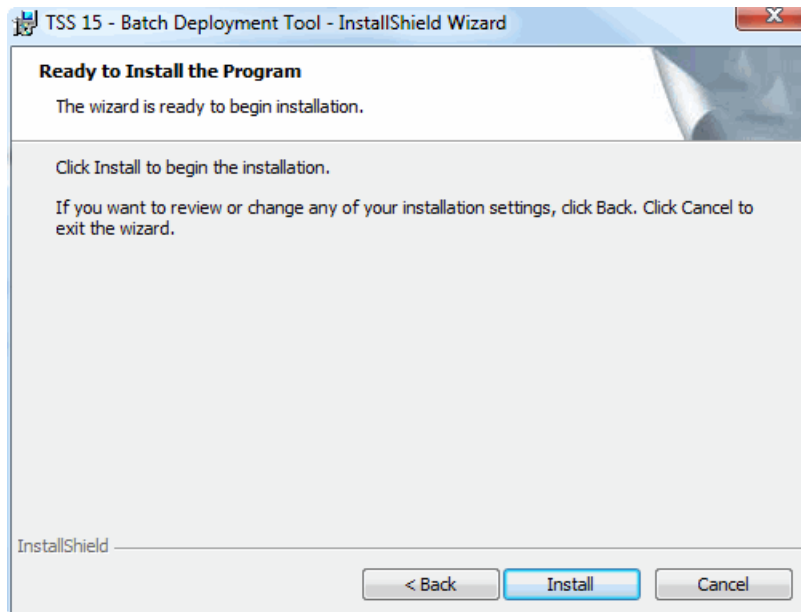
8. In **User Name**, enter your name (optional).
9. In **Organization**, enter your organization information (optional).
10. Click **Next**.

The Destination window opens.

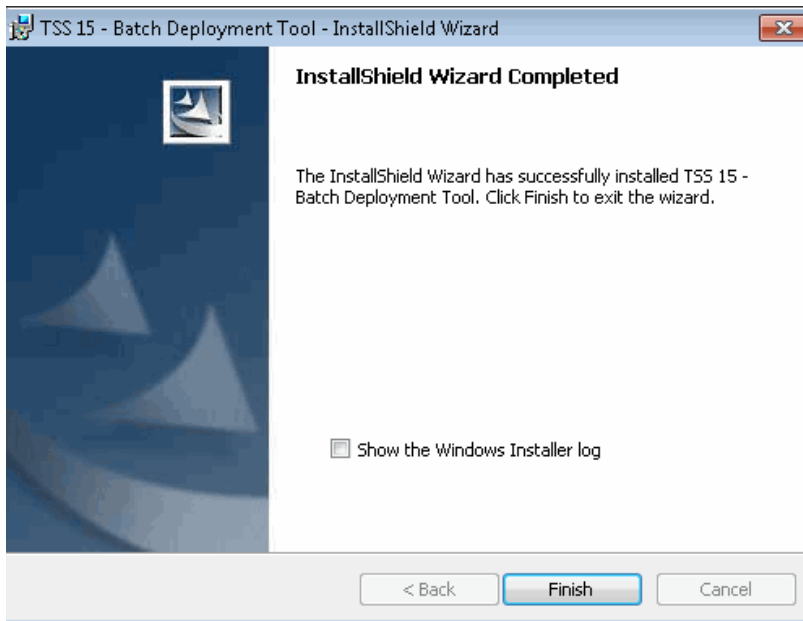


11. Click **Next** to accept the default destination.
Alternately, click **Change** to specify a different location, then click **Next**.

The Ready to Install window opens.



12. Click **Install** to install BDT. When installation is complete, the InstallShield Wizard Completed window opens.



13. Click **Finish** to close the wizard.

To see the installer log file, click the **Show the Windows Installer log** option. The log file opens in your default text editor. You can save the log file for troubleshooting purposes.

- ① *If you export a batch script from the Control Center, the Batch Deployment Tool is automatically run.*

Installing TS Reporting Adapter

The TS Reporting Adapter is a callable reporting adapter designed to run table queries which extract the contents of a TSS repository and import the data into a third-party data consumer such as Excel, QlikView, and Tableau.

There are two supported types of data connection providers: Object Linking and Embedding, Database (OLE DB) and Open Database Connectivity (ODBC). 32- and 64-bit versions of each are available, depending on your needs.

This chapter includes the following sections:

- [Installing ODBC 32-Bit Reporting Adapter on page 113](#)
- [Installing ODBC 64-Bit Reporting Adapter on page 122](#)
- [Installing OLE DB 64-Bit Provider on page 125](#)

① *For information about how to configure and use the reporting adapters and providers, see [TS Reporting Adapter for Excel User's Guide](#).*

What Do You Need To Install?

Both OLE DB and ODBC providers support loading data into 32-bit and 64-bit third-party applications. Note the following to understand what you need to install:

- To use the OLE DB Provider with a 64-bit version of Excel, you must install the 64-bit version of the OLE DB Provider. The OLE DB Provider (64-bit) installer is supplied with TSS client/Control Center software.
- To use the ODBC Provider with a 64-bit version of Excel, you must install the 64-bit version of the ODBC Provider. The ODBC Provider (64-bit) is available as a separate installation package.
- The 32-bit version of the OLE DB TS Reporting Adapter is installed automatically when you install the client/Control Center software. No additional installation is required.
- ODBC Provider for 32-bit applications is available with TSS client/Control Center software as a separate install.

Installing ODBC 32-Bit Reporting Adapter

Install the ODBC Data Adapter on the same Windows system where you plan to create ODBC DSNs. For information on using ODBC Reporting Adapter, see the *TS Reporting Adapter for Excel User's Guide*.

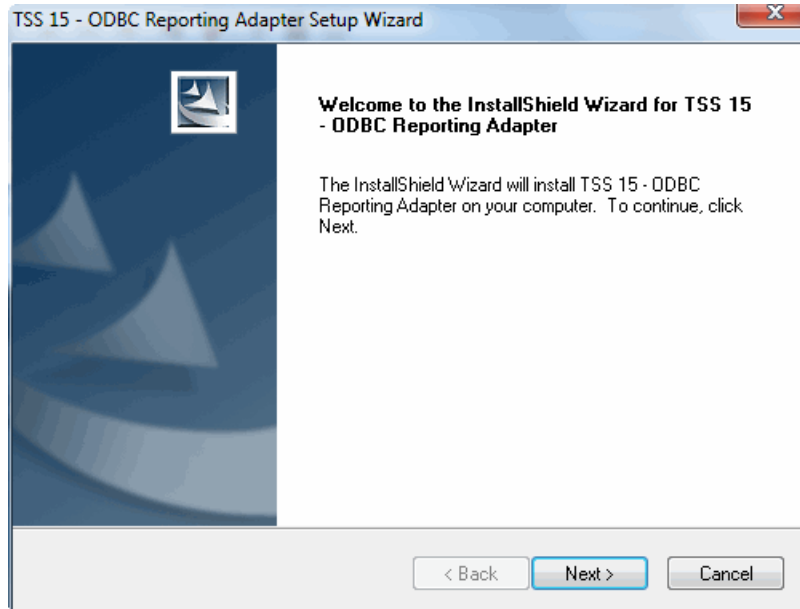
It is not a requirement that the repository server or the Control Center be installed in the same system where you will install ODBC Reporting Data Adapter and create the DSN. The instance of Excel you use must reside on the same system on which you create the DSN.

After you install the 32-bit ODBC adapter, you must also configure the ODBC DSN. See [Configuring ODBC DSN on page 119](#).

► To install ODBC 32-bit Reporting Data Adapter

1. Login as the Windows Administrator.
2. If you have not yet done so, download the setup file from TSS Download Center (File Portal) FTP site.
3. Go to the \ODBC_Reporting_Adapter directory.

4. Double-click the `setup.bat` file to begin the installation. The InstallShield Wizard gathers the required information and shows the welcome message.



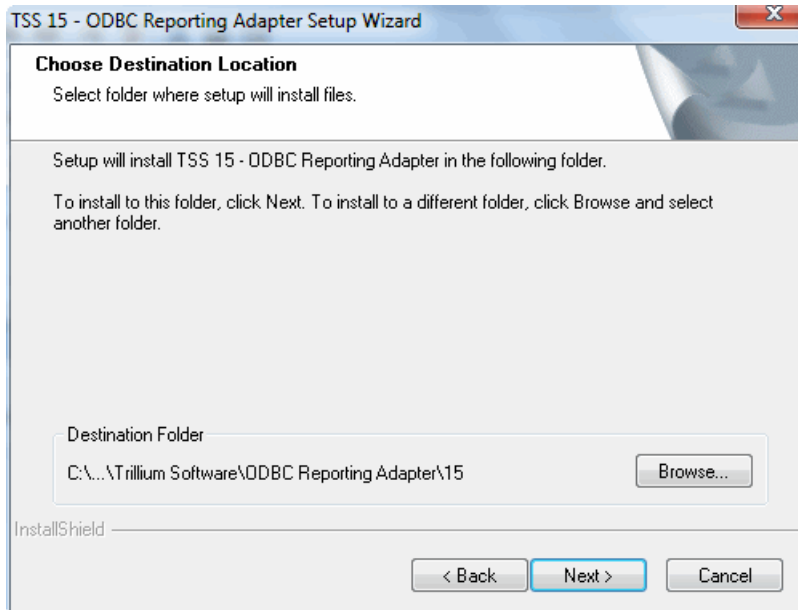
5. Click **Next**. The License Agreement window opens.

6. Read the License Agreement and select **I accept the terms in the license agreement** option.



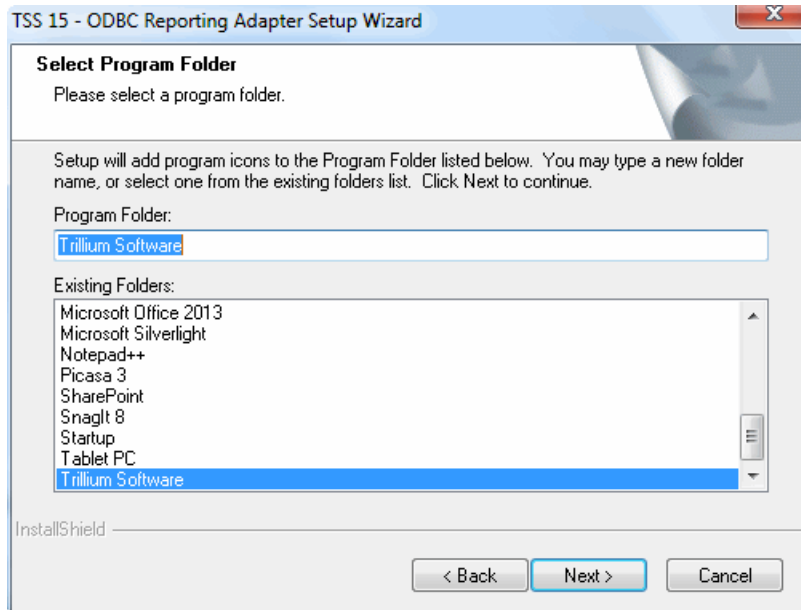
7. Click **Next**.

The Destination window opens.



8. Click **Next** to accept the default destination.
Alternately, click **Browse** to specify a different location. Then click **Next**.

The Select Program Folder window opens.



9. Do one of the following:
 - Accept the default location of Trillium Software to add program icons by clicking **Next**.
 - Select another folder in the Existing Folders window, and click **Next**.

The Start Copying Files window opens.



10. Review the information in the Current Settings section.
 - To make changes to the installation settings, click **Back**.
 - To continue the installation, click **Next**.

The Setup Status window opens, showing the progress of the installation. When the installation finishes, the InstallShield Wizard Complete window opens.
11. (Optional) Select **View the Readme** file.
12. Click **Finish** to close the window and finish the install.
13. Go to [Configuring ODBC DSN on page 119](#).

Configuring ODBC DSN

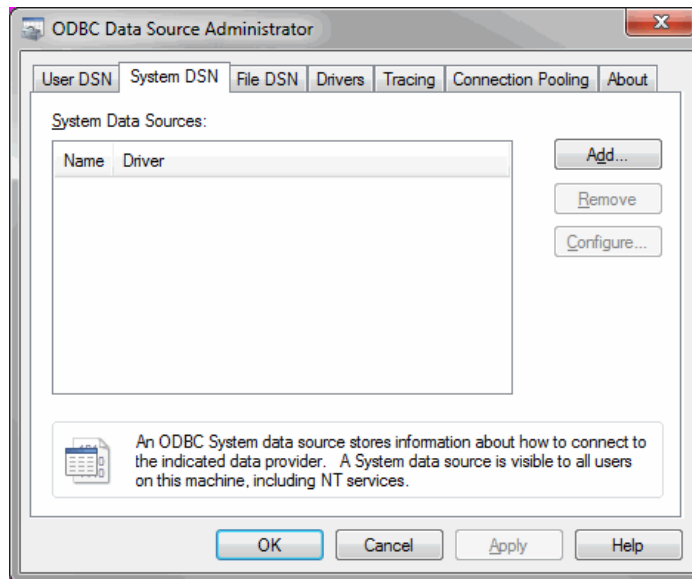
You must configure an ODBC DSN for each repository from which you want to access data on the system where you installed the TSS ODBC Provider.

Before you start this procedure, you must first perform the following:

1. Install TSS Repository Server in your environment (they do not need to be installed on the same system as the DSN). Create a repository.
2. Install either 32-bit or 64-bit ODBC Reporting Adapter on the same Windows system where you plan to create ODBC DSNs.

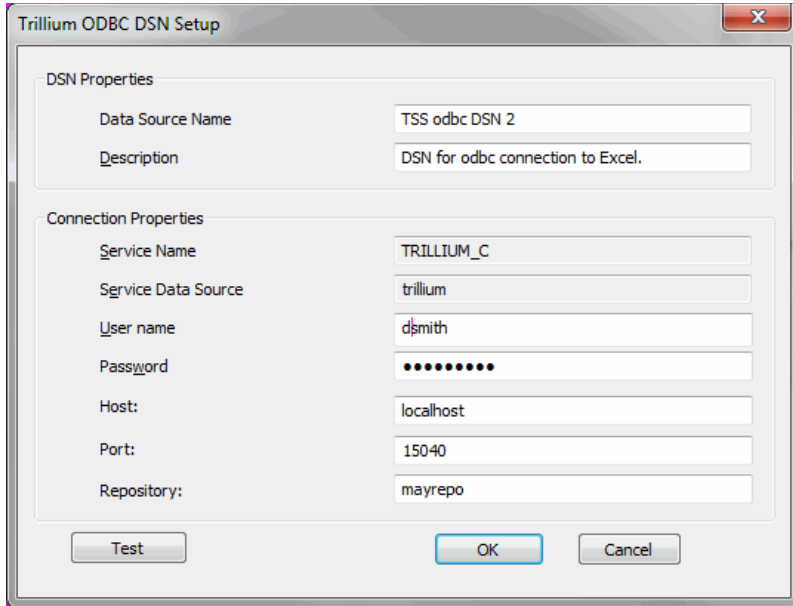
► To configure ODBC DSN data source

1. On the TSS repository server system, click **Start > Programs/All Programs > Trillium Software > ODBC Administrator**. The ODBC Data Source Administrator window opens.
2. Click the **System DSN** tab.



3. Click **Add**. The Create New Data Source window opens.

4. Scroll through the list of available drivers and select **TSS ODBC Reporting Adapter**.
5. Click **Finish**. The Trillium ODBC DSN Setup window opens.

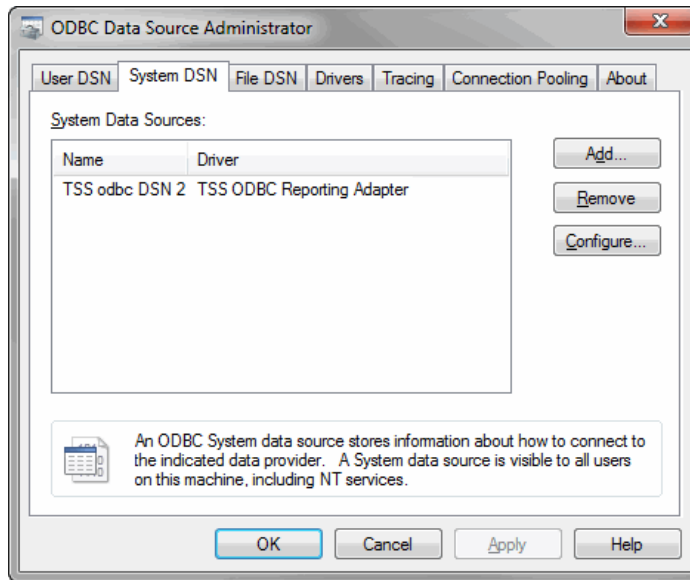


6. In the DSN Properties section, enter information in the following fields:
 - **Data Source Name.** Enter a name for the DSN you are creating. This will be the name displayed by the application when it requests a connection to the data source.
 - ⓘ *This name cannot be changed after you click **OK** to save these properties.*
 - **Description.** Enter a brief description of the data source.

7. In the Connection Properties section, enter information in the following fields:
 - ① *Service Name and Service Data Source fields are populated automatically and cannot be modified.*
 - **User name.** Name of the TSS administrator who created the repository.
 - **Password.** Password of the TSS administrator who created the repository.
 - **Host.** TSS repository server host name for the system where the repository is located. Enter **localhost** if you are creating the DSN on the TSS server system. Otherwise, enter the name or IP address; for example, tsserver or 123.456.789.10.
 - **Port.** Repository Server port defined during installation of the repository server. For example, 15040.
 - **Repository.** Name of the repository.
8. Click **Test**. After a few seconds a message opens stating that the data source connection was successful. If the test is not successful, a Failed to attach to Repository [*repository_name*] opens. Verify the information entered in the Trillium ODBC DSN Setup window and click **Test** again.

To use the reporting adapter, follow the guidelines and procedures in the *TS Reporting Adapter for Excel User's Guide*.

9. Click **OK**. The Setup window closes and the name of the new DSN displays in the System Data Sources section of the System DSN tab.



10. (Optional) To change the properties for the DSN, select the DSN name and click **Configure**. You cannot change the data source name or the Service Name and Service Data Source connection properties.
11. (Optional) To delete a DSN, select it and click **Remove**.
12. Click **OK** to close the ODBC Data Source Administrator window.

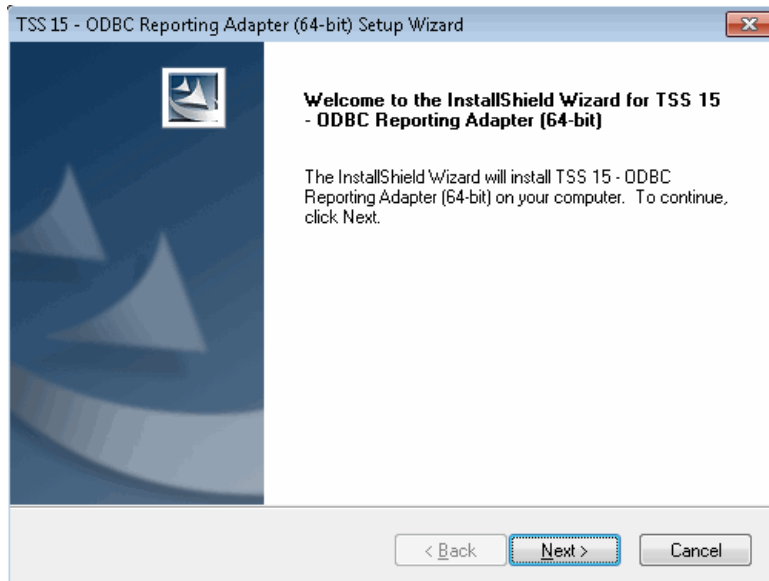
Installing ODBC 64-Bit Reporting Adapter

The ODBC reporting adapter supports 32- and 64-bit versions of Excel. Before you use the ODBC Provider with a 64-bit version of Excel, you must install the 64-bit version of the ODBC Provider.

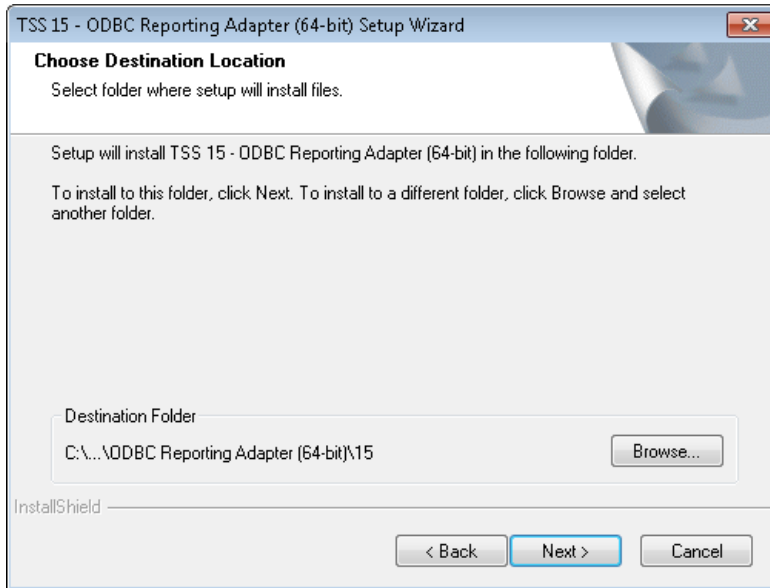
The ODBC reporting adapter (64-bit) is available with the TSS client/Control Center installation package, although it must be installed separately.

► **To install the TSS ODBC reporting adapter (64-bit)**

1. Navigate to the Client\ODBC_Reporting_Adapter installation file directory in the TSS installation files. For example, ... \TSS_Windows_Client_and_Server\Client\ODBC_Reporting_Adapter.
2. Double-click the setup.bat file. The Welcome window opens. The setup wizard Welcome window opens.



3. Click **Next**. The License Agreement window opens.
4. Click **I accept the terms of the License Agreement**.
5. (Optional) Click **Print** to print a copy of the text displayed in the License Agreement window.
6. Click **Next**. The Choose Destination Window opens.



7. Do one of the following:

- To install the software to the default directory, click **Next**.
- To choose another directory, click **Browse**, navigate to the directory, click **OK**, then click **Next**.

The Select Program Folder window opens.

8. Select a Program Folder (the default is Trillium Software) and click **Next**. The Start Copying Files window opens.
9. Review the install settings. Click **Back** to change a selection. Click **Next** to start the install. The Setup Status window opens and displays the progress of the installation. When the install finishes, the InstallShield Wizard Complete window opens.
10. Click **Finish** to close the wizard.

To use the reporting adapter, follow the guidelines and procedures in the *TS Reporting Adapter for Excel User's Guide*.

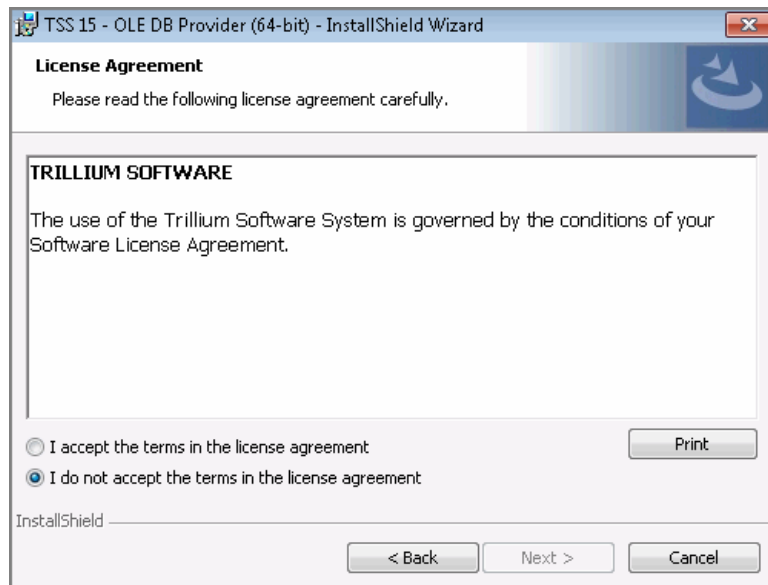
Installing OLE DB 64-Bit Provider

The OLE DB Data Provider supports 32- and 64-bit versions of Excel. Before you use the OLE DB Provider with a 64-bit version of Excel, you must install the 64-bit version of the OLE DB Provider.

The OLE DB Provider (64-bit) is available with the TSS installation package, although it must be installed separately.

► To install the TSS OLE DB Provider (64-bit)

1. Navigate to the Client\OLEDB64 installation file directory in the TSS installation files. For example, ...\\TSS_Windows_Client_and_Server\Client\OLEDB64.
2. Double-click the **setup.bat** file. The Welcome window opens.
3. Click **Next**. The License Agreement window opens.



4. Click **I accept the terms of the License Agreement** if you accept the terms.

5. (Optional) Click **Print** to print a copy of the text displayed in the License Agreement window.
6. Click **Next**. The Destination Folder window opens.
7. Do one of the following:
 - Click **Next** to accept the default install location.
 - Click **Change** to navigate to and select a different install destination location. Then click **Next**.

The Ready to Install the Program window opens.
8. Click **Install** to start the installation.
9. When the Completed window opens, click **Finish**.

To use the reporting adapter, follow the guidelines and procedures in the *TS Reporting Adapter for Excel User's Guide*.

Installing EDQ

This chapter describes how to install Enterprise Data Quality (EDQ) on Linux and Windows systems.

This chapter includes:

- [About EDQ on page 127](#)
- [Installing EDQ on Linux on page 128](#)
- [Installing EDQ on Windows on page 143](#)
- [Starting the Apache Tomcat Web Server on page 167](#)
- [Setting Table Locations on page 168](#)
- [Running 64-Bit and 32-bit Concurrently on page 170](#)

About EDQ

Enterprise Data Quality (EDQ) is the 64-bit enabled implementation of TS Quality. Depending on your product key, your EDQ installation options may include:

- Enterprise Data Quality, which installs the 64-bit enabled core TS Quality modules and Trillium tables.
- TS Quality for Real Time, which installs the TS Director, and includes two optional components:

- TS Web Services, which enables TS Quality processing through REST and SOAP requests to the Apache Tomcat web server.
- Director SDK, which enables TS Quality processing through a connector client.
- 64-bit EDQ client interface components (Windows only):
 - Director System Manager (64-bit) - A graphical user interface that allows you to control Director, cleansing and matching.
 - Project Rule Analyzer (64-bit) - A tool that allows you to test cleansing and matching rules and logic.
 - Web Service Manager (64-bit) - A web service test tool that allows you to send REST and SOAP requests for cleansing and matching services.
- ① *The 64-bit client interface components are automatically installed with the Enterprise Data Quality option. No installation option is displayed for these; you cannot select a subset of these components for installation.*
- TS Quality for SAP, which installs the SAP connector, enabling TS Quality integration with the SAP NetWeaver RFC client.

Installing EDQ on Linux

The EDQ installation on Linux requires:

- The basic calculator (bc). If not installed, the following error will display:
`'bc' command was not found. Please make sure bc is in the path and run the installer again.`
Install the basic calculator and restart the installation.
- Libraries that allow for 32-bit applications to run on 64-bit architecture. If these are not found, the following error will display:
`Bundled JRE is not binary compatible with host OS/Arch or it is corrupt. Testing bundled JRE failed.`
Running the following commands from an account with sudo privileges will resolve this issue.
`sudo yum install glibc-common glibc`


```
sudo yum install glibc.i686
```

- ① *If you are installing EDQ on Red Hat, EDQ supports Red Hat Enterprise Linux versions 6 and above only.*

► To install EDQ on Linux

1. Download the Enterprise Data Quality installation zip file from the TSS Download Center (File Portal) FTP website and decompress the zip file.
2. Copy the executable (`tss_edq_version.build_linux.bin`) from the EDQ64 folder into a directory to be used as the base directory.

① *If you are copying the executable file from another machine, such as a PC, be sure to copy the file in binary mode, so that it can be executed on the UNIX system.*

3. Run the executable file that you copied in [Step 2](#), using the **-console** option.
4. Read the Welcome message and enter **1** to continue.
5. At the License Agreement prompt enter **1** to select **I accept the terms of the license agreement**, then enter **0** then **1** to continue.
6. Enter your product key, then enter **1** to continue.
7. Enter a Destination Directory or accept the default `/opt/trillium`, then enter **1** to continue. If the directory you specify does not exist, the installation program creates it.
8. Select the features to install on this computer. The features listed vary depending on your product key. By default, all features activated by your product key will be installed. To omit a feature, enter the number of the feature to be excluded.

Some features include optional components. These are described in their relevant sections.

Because EDQ uses a distributed architecture, you can install these components on different computers in your network.

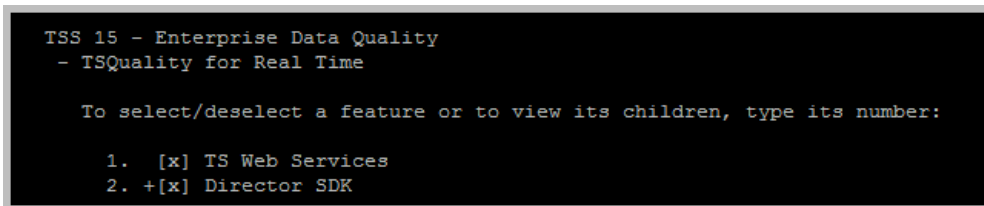
The next prompt displayed depends on the features you have selected for installation.

Installing TS Quality for Real Time

The TS Quality for Real Time option installs the TS Director, a service that provides transaction load balancing and server connection management for client applications. There are two optional components available with the TS Quality for Real Time installation:

- TS Web Services - TS Web Services enables Trillium processing through industry-standard REST and SOAP requests. Selecting this option installs the Apache Tomcat Web Server. Java 64-bit version 1.8 is required and the JRE_HOME variable must be set to the JRE location.
- Director SDK - The Software Development Kit includes the Java API, code samples, and a sample project, director_proj. You can optionally install cleansing and matching services to test your client application.

To view the optional components, enter **3**, and enter **2**.



```
TSS 15 - Enterprise Data Quality
- TSQuality for Real Time

To select/deselect a feature or to view its children, type its number:

1. [x] TS Web Services
2. +[x] Director SDK
```

Figure 7-1 TS Quality for Real Time Optional Components

To use TS Quality for Real Time, install both the Enterprise Data Quality option and one or both of the TS Quality for Real Time options. If you will be installing TS Quality for SAP, installation of TS Quality for Real Time is required; the optional components (TS Web Services and Director SDK) are not required for SAP.

Follow the prompts to select components to be installed.

① *Depending on components installed, the following prompt may display after the Apache prompts.*

Set the following parameter:

Director Port: Enter the TCP/IP port number on which the Director will listen for incoming connection requests. The default is 15400. You can assign any port number available on your system. The Director requires

two consecutive ports for communication; ensure that the next consecutive port number is also available.

Enter **2** to make changes, or enter **1** to continue. The next prompt displayed depends on the components you have selected for installation.

Installing TS Web Services

TS Web Services installs the Apache Tomcat Web Server. Before using TS Web Services, you must start the Apache Tomcat Web Server. See [page 167](#) for startup information.

Set the following parameters:

Apache Tomcat Start Port: Enter the port number on which the Apache Tomcat server listens for requests. The default is 8484.

Apache Tomcat Stop Port: Enter the port number on which the Apache Tomcat server listens for stop requests. The default is 8405.

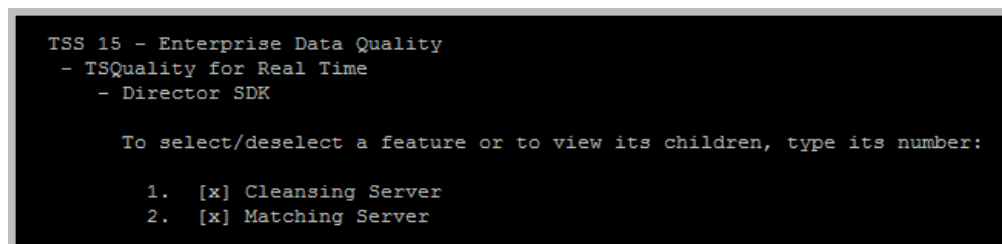
Enter **2** to make changes or enter **1** to continue. The next prompt displayed depends on the components you have selected for installation.

Installing Director SDK

The TS Quality Director SDK contains the application programming interface (API) tools required to develop client applications that call the TS Quality data cleansing and matching servers. The SDK installs the Java API and a sample Director project, `director_proj`. You can optionally install:

Cleansing Server: A server that handles data cleansing requests.

Matching Server: A server that handles data matching requests.



```
TSS 15 - Enterprise Data Quality
- TSQuality for Real Time
- Director SDK

To select/deselect a feature or to view its children, type its number:

1. [x] Cleansing Server
2. [x] Matching Server
```

Figure 7-2 SDK Optional Components

Installing the SDK Cleansing Server

When you install the SDK cleansing server, you are prompted for the following:

Director Host: Enter the host name or IP address of the node on which the Director is running.

Director Port: Verify that the port number is the same as the port number on which the Director is listening.

Cleansing Server Port: Enter the port number on which the cleansing server will listen for requests. Ensure that the same port is not used by multiple services. The default is 15410.

Cleansing Configuration File: Accept the default path and file name for the sample Trillium configuration file, designed for use with the sample project, or enter a new path and name.

Processing Level: The Processing Level determines how requests will be queued for handling by the server. The optimum processing level is dependent on your hardware configuration. In general, using one thread for each processor yields optimum performance.

At all levels, the maximum number of concurrent attaches is 128. The processing level options are:

Minimum - No threads will be spawned for cleansing. Requests will be placed in a queue. The client that has been waiting the longest for a request to be serviced (based on when the server last processed a request for that client) is processed next. Note that the network queue limits the number of attach requests that can be waiting.

Default - One thread will be actively cleansing; another thread will be listening for requests on the network. Other requests will wait until the request is completed. This level is most appropriate for a system with one or two execution cores.

High - Eight threads will be actively cleansing. Other requests will wait until a request is completed. This level is most appropriate for a system with more than four cores.

Maximum - A thread will be created for each incoming request,

within the limit of 128 concurrent attaches. This level can increase performance depending on the overall load on the system, for example, if some records require more processing resources.

A summary of your selections displays. Enter **2** to make changes or enter **1** to continue. The next prompt displayed depends on the components you have selected for installation.

Installing the SDK Matching Server

When installing the SDK matching server, you are prompted for the following:

Director Host: Enter the host name or IP address of the node on which the Director is running.

Director Port: Verify that the port number is the same as the port number on which the Director is listening.

Matching Server Port: Enter the port number on which the matching server will listen for requests. Ensure that the same port is not used by multiple services. The default is 15412.

Matcher Configuration File: Accept the default path and file name for the sample Trillium configuration file, designed for use with the sample project, or enter a new path and name.

Processing Level: The Processing Level determines how requests will be queued for handling by the server. The optimum processing level is dependent on your hardware configuration. In general, using one thread for each processor yields optimum performance.

At all levels, the maximum number of concurrent attaches is 128. The processing level options are:

Minimum - No threads will be spawned for matching. Requests will be placed in a queue. The client that has been waiting the longest for a request to be serviced (based on when the server last processed a request for that client) is processed next. Note that the network queue limits the number of attach requests that can be waiting.

Default - One thread will be actively matching; another thread will be listening for requests on the network. Other requests will wait until the request is completed. This level is most appropriate for a

system with one or two execution cores.

High - Eight threads will be actively matching. Other requests will wait until a request is completed. This level is most appropriate for a system with more than four cores.

Maximum - A thread will be created for each incoming request, within the limit of 128 concurrent attaches. This level can increase performance depending on the overall load on the system, for example, if some records require more processing resources.

A summary of your selections displays. Enter **2** to make changes or enter **1** to continue. The next prompt displayed depends on the components you have selected for installation.

Installing TS Quality for SAP

TS Quality for SAP is a client application that passes cleansing and matching requests from your SAP environment to TS Quality cleansing and matching services, and returns the cleansed and matched data to your SAP environment. It includes the TrilliumSAPNW client, a cleansing service, matching service, and a sample project.

TS Quality for SAP requires installation of both the Enterprise Data Quality option and TS Quality for Real Time. Installation of the two optional components of TS Quality for Real Time (TS Web Services and Director SDK) is not required.

- ① *Installing TS Quality for SAP is a two-part process. After you have finished the installation steps described in this section, refer to [Installing the SAP Add-On and Support Packages on page 256](#) of this manual and to the [TS Connector for SAP Products Reference Guide](#) for additional installation and configuration information.*

Pre-Installation Checklist

The following information should be available prior to installation.

- What version of SAP is implemented?
- What version of SAP Basis is implemented?
- Is the SAP operating system installed on a Windows system or a Linux system?
- Are you creating a stand-alone gateway for the two systems to communicate? (This is highly recommended for failover.)
- Typically, the following team members should be available during installation:
 - SAP Basis Administrator – to install the Add-On
 - SAP function team member – to perform the configuration
 - Other (system administrator)

To view the subfeatures available, enter **4**, then enter **2**.

```
TSS 15 - Enterprise Data Quality
- TSQuality for SAP

To select/deselect a feature or to view its children, type its number:

1.  [x] SAP Client
2.  [x] Cleansing Server
3.  [x] Matching Server
4.  [x] SAP Sample Project
```

Figure 7-3 SAP Optional Components

Optional components include:

SAP Client: The SAP NW client and a sample project for the SAP Connector, which you can use to test your SAP Connector installation.

Cleansing Service: A service that handles data cleansing requests. The default service name is TSQSAPCleanser15.

Matching Service: A service that handles data matching requests. The default service name is TSQSAPMatcher15.

When you install the SAP Client, the following prompts display:

Director Port: Verify that the port number is the same as the port number on which the Director is listening. The default is 15400.

Director Host: The host name or IP address of the node on which the Director is running.

SAP Client Maximum threads: The maximum concurrent requests that the client can handle. The default is ten (10).

SAP Client Configuration File: The path and filename of the TS Quality SAP configuration file, by default `/conf/TrilsAP.cfg`.

A summary of your selections displays. Enter **2** to make changes or enter **1** to continue.

Set the following TS Client for SAP RFC parameters:

Destination: Unique destination name entry. Defaults to TRILLIUM_R.

Gateway Host: The SAP Gateway server host name.

Gateway Service: SAP Gateway server name, generally the value "sapgw" followed by the two-digit system number.

Program ID: The registered SAP RFC server program name. Defaults to TRILLIUM.CONNECTOR.

SAP Version: Defaults to 610.

SAP Client: The SAP customizing client where the TS Quality Connector is activated.

System ID: Unique SAP application system name, for example C5W.

Language: Defaults to EN (English).

Username: The SAP RFC service user name, for example TRILLRFC.

Password: The SAP RFC user's password that was set by the Security Administrator.

User Logon Group: Application server's group name (optional); default is PUBLIC.

Message Server Host: Host name of the message server, for example localhost.

A summary of your selections displays. Enter **2** to make changes or **1** to continue. The next prompt displayed depends on the components you have selected for installation.

Installing the Cleansing Service for SAP

When you install the Cleansing Service for SAP, set the following parameters:

Director Host: The host name or IP address of the node on which the Director for this client is running.

Director Port: Verify that the port number is the same as the port number on which the Director is listening. The default is 15400.

Cleansing Server Port: The port number on which the cleansing service will listen for requests. Ensure that the same port is not used by multiple services. The default is 15420.

Cleansing Configuration File: Accept the default path and file name for the sample TS Quality configuration file, `/samples/projects/sap_proj/settings/TrilSAP.cfg`, or type a new path and name.

Processing Level: The Processing Level determines how requests will be queued for handling by the server. The optimum processing level is dependent on your hardware configuration. In general, using one thread for each processor yields optimum performance.

At all levels, the maximum number of concurrent attaches is 128. The processing level options are:

Minimum - No threads will be spawned for cleansing. Requests will be placed in a queue. The client that has been waiting the longest for a request to be serviced (based on when the server last processed a request for that client) is processed next. Note that the network queue limits the number of attach requests that can be waiting.

Default - One thread will be actively cleansing; another thread will be listening for requests on the network. Other requests will wait until the request is completed. This level is most appropriate for a system with one or two execution cores.

High - Eight threads will be actively cleansing. Other requests will wait until a request is completed. This level is most appropriate for a system with more than four cores.

Maximum - A thread will be created for each incoming request, within the limit of 128 concurrent attaches. This level can increase performance depending on the overall load on the system, for example, if some records require more processing resources.

A summary of your selections displays. Enter **2** to make changes or enter **1** to continue. The next prompt displayed depends on the components you have selected for installation.

Installing the Matching Service for SAP

When you install the matching service for SAP, set the following parameters:

Director Host: The host name or IP address of the node on which the Director for this client is running.

Director Port: Verify that the port number is the same as the port number on which the Director is listening. The default is 15400.

Matching Server Port: The port number on which the matching service will listen for requests. Ensure that the same port is not used by multiple services. The default is 15422.

Search Matching Server Port: The port number on which the Fuzzy Search matching service will listen for requests. Ensure that the same port is not used by multiple services. The default is 15424.

Matching Configuration File: Accept the default path and file name for the sample TS Quality configuration file, `/samples/projects/sap_proj/settings/TrilSAP.cfg`, or type a new path and name.

Search Matching Configuration File: Accept the default path and file name for the sample TS Quality configuration file for Fuzzy Search, `/samples/projects/sap_proj/settings/TrilSAP001.cfg`, or type a new path and name.

Processing Level: The Processing Level determines how requests will be queued for handling by the server. The optimum processing level is dependent on your hardware configuration. In general, using one thread for each processor yields optimum performance.

At all levels, the maximum number of concurrent attaches is 128. The processing level options are:

Minimum - No threads will be spawned for matching. Requests will be placed in a queue. The client that has been waiting the longest for a request to be serviced (based on when the server last processed a request for that client) is processed next. Note that the network queue limits the number of attach requests that can be waiting.

Default - One thread will be actively matching; another thread will be listening for requests on the network. Other requests will wait until the request is completed. This level is most appropriate for a system with one or two execution cores.

High - Eight threads will be actively matching. Other requests will wait until a request is completed. This level is most appropriate for a system with more than four cores.

Maximum - A thread will be created for each incoming request, within the limit of 128 concurrent attaches. This level can increase performance depending on the overall load on the system, for example, if some records require more processing resources.

A selections summary displays. Enter **2** to make changes; enter **1** to continue.

After TS Quality for SAP installation, you must set the following environment variables:

- TRILLDIRADDR: Name of the host or IP address (in dotted decimal format) of the node on which the Director listens. Set on client and cleansing/matching service machines.
- TRILLDIRPORT: Port on which the Director listens for incoming requests. Set on client and cleansing/matching service machines.

① *Installing the TS Connector for SAP is a two-part process. After you have finished the installation steps described in this section, refer to [Installing the SAP Add-On and Support Packages on page 256](#) of this manual and to the [TS Connector for SAP Products Reference Guide](#) for additional installation and configuration information.*

Completing Installation

After entering all selections for components, a summary of the features to be installed displays. Enter **2** to make changes or enter **1** to begin the installation.

A progress bar displays during the installation.

```
TSS 15 - Enterprise Data Quality - InstallShield Wizard

Installing TSS 15 - Enterprise Data Quality. Please wait...

|-----|-----|-----|-----|
0%      25%     50%     75%     100%
|||||
Creating uninstaller...

Finalizing the Vital Product Data Registry. Please wait...

-----
TSS 15 - Enterprise Data Quality - InstallShield Wizard

The InstallShield Wizard has successfully installed TSS 15 - Enterprise Data
Quality. Choose Finish to exit the wizard.

Press 3 to Finish or 5 to Redisplay [3]
```

Figure 7-4 Completing Installation on Linux

When installation completes, enter **3** to finish. Following the installation:

- Set environment variables, as described in the following section.
- If you are using TS Web Services, start Apache Tomcat, as described in [Starting the Apache Tomcat Web Server on page 167](#).
- Set your table locations, as described in [Setting Table Locations on page 168](#).
- Install your postal directories/tables and city tables as needed. See [Installing Postal Directories on page 172](#) and [Copying City Tables on page 189](#).

Environment Variables - Linux

Depending on the components installed, after installation you must manually set the following environment variables.

Table 7-1 Environment Variables

Variable	Use
LD_LIBRARY_PATH	Library path environment variable, which must include the path to the client library files (libtriltGenClientLibrary.so or the xerces library). If you have installed TS Web Services, include <code>%JRE_HOME%/bin</code> and <code>%CATALINA_HOME%/bin</code> in the path.
JRE_HOME	If you use TS Web Services or you are using a Java SDK client, set JRE_HOME to your JRE location.
TS_DUMP_FILES	(Optional; used for debugging when tracing is enabled in the cleanser or matcher.) Path to the location where binary dump files will be created. If the I/O buffers dump trace level is set, as described in the <i>TS Director User's Guide</i> , individual I/O buffer dump files will be created in this location.
TRILLDIRADDR	(Set for clients using TS Director) Name of the host or IP address (in dotted decimal format) of the node on which the Director listens. Set on client and cleansing/matching service machines.
TRILLDIRPORT	(Set for clients using TS Director) Port on which the Director listens for incoming requests. Set on client and cleansing/matching service machines.

① *Trillium Software recommends that you set the environment variables in the .cshrc file, or other startup configuration file, to avoid setting them up manually each time you start the system.*

Installing EDQ on Windows

EDQ is installed using the InstallShield wizard. During the installation process, you can click **Cancel** at any time to stop the install program and exit the InstallShield wizard.

► To install EDQ

1. If you have not yet done so, download the setup file from the TSS Download Center (File Portal) FTP website. Copy the installer file, [tss_edq_version.build_win.exe](#).
2. Run the installer. The Welcome window opens. Read the welcome message and click **Next**.

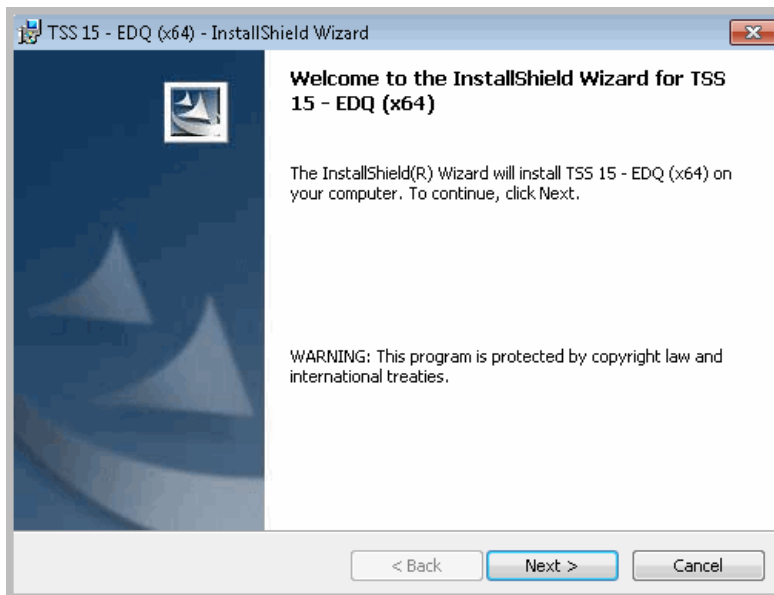


Figure 7-5 Welcome

3. The License Agreement window opens. You must accept the terms of the license agreement in order to install solution components. Select **I accept the terms in the license agreement** and click **Next**.

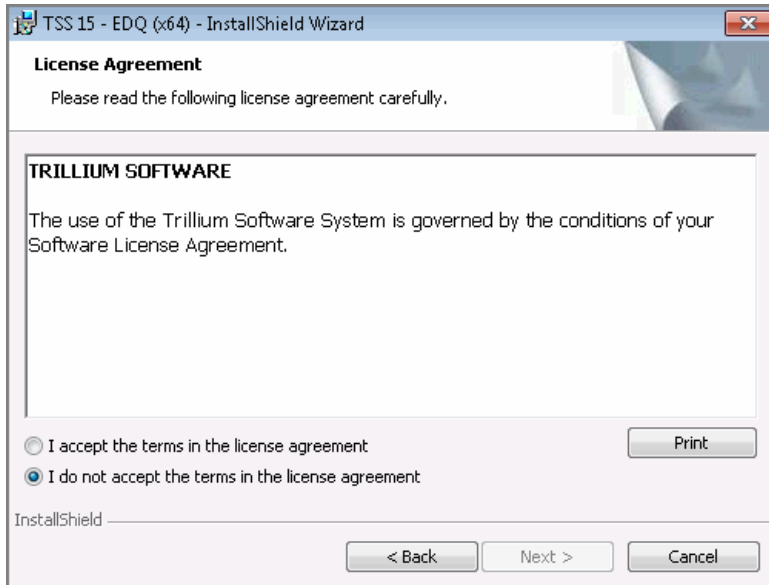


Figure 7-6 License Agreement

4. The Product Key window opens. Enter your product key and click **Next**.

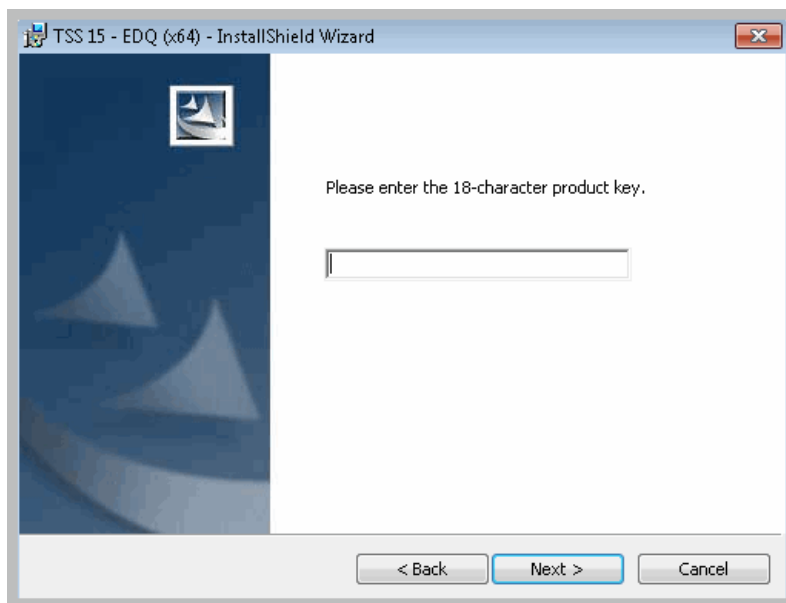


Figure 7-7 Product Key

5. The Destination Folder window opens. Accept the default installation directory or browse to select a different directory. If the directory you specify does not exist, the installation program creates it. Click **Next**.

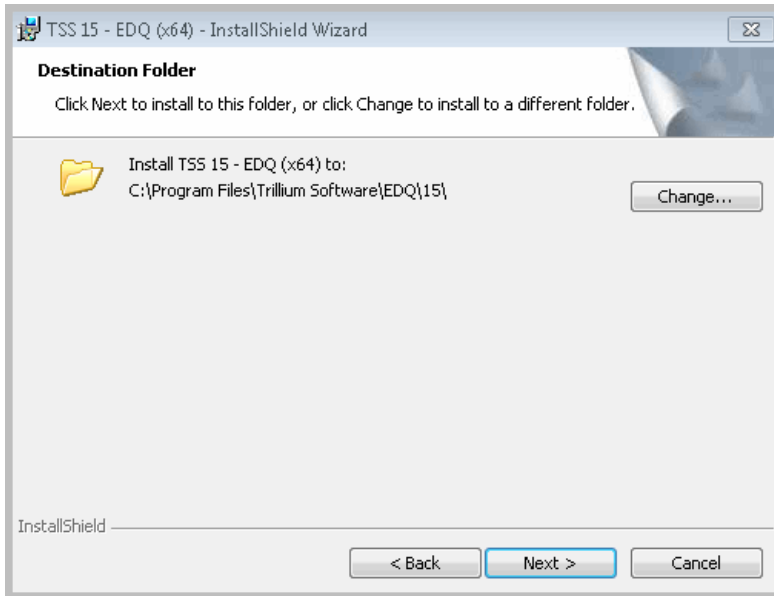


Figure 7-8 Install Location

6. The Custom Setup window opens. Select the features and components to install on this computer.

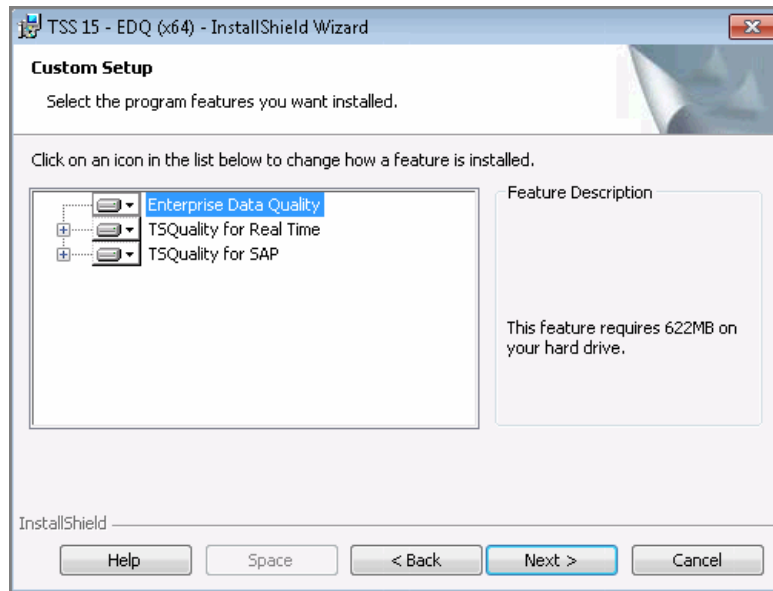


Figure 7-9 Select Components to Install

The features listed on this screen vary depending on your product key. By default, all components activated by your product key will be installed. To omit a feature, click the icon next to the feature name and select the **This feature will not be available** option, as shown in Figure 7-10.

Installation of Enterprise Data Quality includes the following 64-bit client user interface components:

- Director System Manager - A graphical user interface that allows you to control Director, cleansing and matching.
- Project Rule Analyzer - A tool that allows you to test cleansing and matching rules and logic.
- Web Service Manager - A web service test tool that allows you to send REST and SOAP requests for cleansing and matching services.

i *The 64-bit client interface components are automatically*

installed with the Enterprise Data Quality option. No installation option is displayed for these; you cannot select a subset of these components for installation.

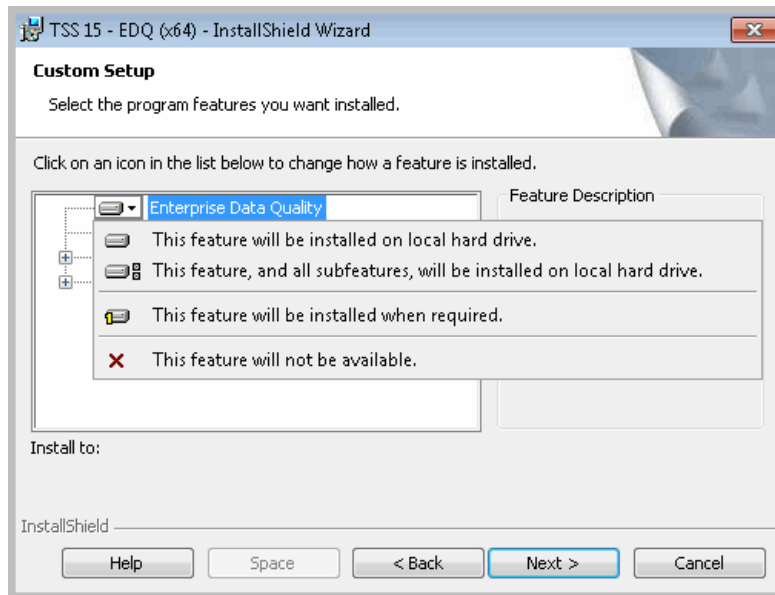


Figure 7-10 Component Selection Options

7. Click **Next**. The next window displayed depends on the components you have selected for installation.

Installing TS Quality for Real Time

The TS Quality for Real Time option installs the TS Director, a service that provides transaction load balancing and server connection management for client applications. There are two additional components available with the TS Quality for Real Time installation:

- TS Web Services - TS Web Services enables Trillium processing through industry-standard REST and SOAP requests. Selecting this option installs the Apache Tomcat Web Server. Java 64-bit version 1.8 is required and the JRE_HOME variable must be set to the JRE location.

- Director SDK - The Software Development Kit includes the Java API, code samples, and a sample project, director_proj. You can optionally install cleansing and matching services to test your client application.



Figure 7-11 TS Quality for Real Time Options

To install the TS Director, install both Enterprise Data Quality and TS Quality for Real Time; optionally install one or both of the TS Quality for Real Time options (TS Web Services and Director SDK).

When you install the TS Director, the Director parameters window opens, as shown in Figure 7-12.

- ① *The Director is automatically installed as a service, and the configuration parameters discussed in this section are stored in the Windows registry.*

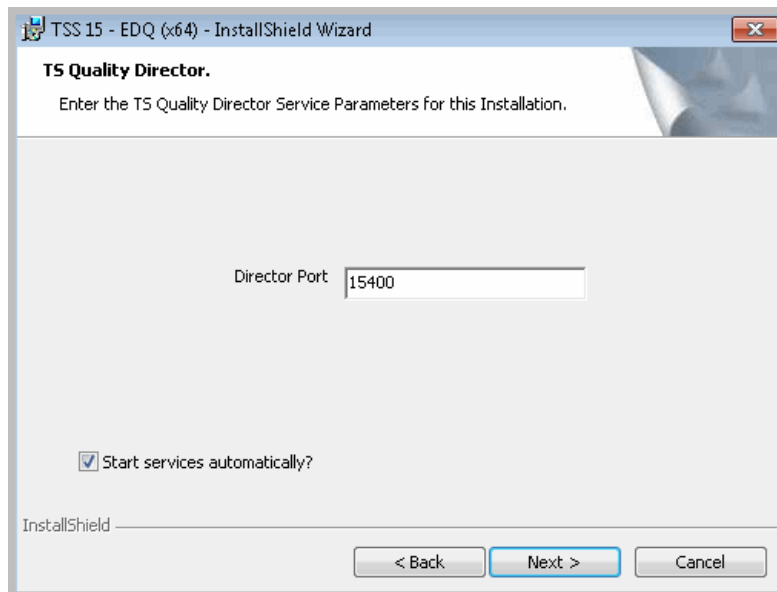


Figure 7-12 Director Port

► **To install the TS Director**

1. Set the following parameter:

Director Port: Enter the TCP/IP port number on which the Director will listen for incoming connection requests, or accept the default 15400. You can assign any port number available on your system. The Director requires two consecutive ports for communication; ensure that the next consecutive port number is also available.

2. If you want the Director to start automatically when Windows starts, verify that **Start services automatically?** is selected. This check box is selected by default.
3. Click **Next**. The next window displayed depends on the components you have selected for installation.

Installing TS Web Services

Selecting the TS Web Services option installs the Apache Tomcat Web Server.

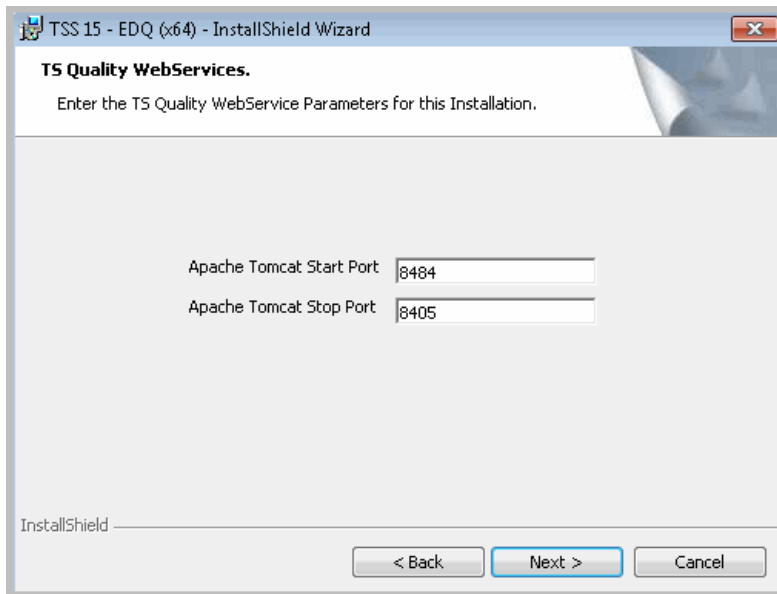


Figure 7-13 Assign Ports for Tomcat

► **To install TS Web Services**

1. Set the following parameters:

Apache Tomcat Start Port: Enter the port number on which the Apache Tomcat server listens for requests. The default is 8484.

Apache Tomcat Stop Port: Enter the port number on which the Apache Tomcat server listens for stop requests. The default is 8405.

2. Click **Next**. The next window displayed depends on the components you have selected for installation.

Director SDK

The Director SDK contains the application programming interface (API) tools used to develop client applications that call the TS Quality data cleansing and matching services. The Java API, samples illustrating API calls and a sample project, `director_proj` are installed. Optionally, you can install:

Cleansing Service: A service that handles data cleansing requests. The default service name is `TSQCleanser15`.

Matching Service: A service that handles data matching requests. The default service name is `TSQMatcher15`.

Installing the SDK Cleansing Service

When installing the cleansing service, the window shown in Figure 7-14 opens.

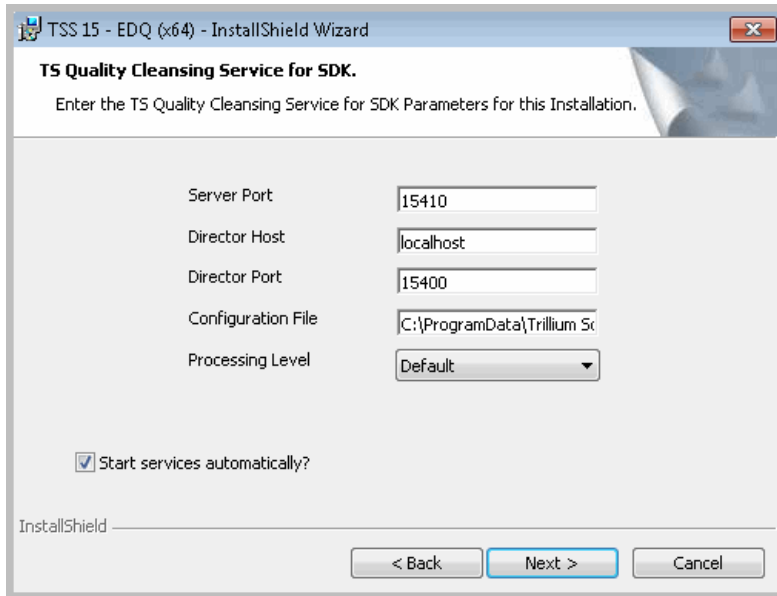


Figure 7-14 SDK Cleansing Service

► To install the SDK cleansing service

1. Set the following parameters:

Server Port: Enter the port number on which the cleansing service will listen for requests. Ensure that the same port is not used by multiple services. The default is 15410.

Director Host: Enter the host name or IP address of the node on which the Director is running.

Director Port: Verify that the port number is the same as the port number on which the Director is listening. This port was established when the Director was installed. The default is 15400.

Configuration File: Accept the default path and file name for the sample Trillium configuration file or enter a new path and name.

Processing Level: The Processing Level determines how requests will be queued for handling by the server. The optimum processing level is dependent on your hardware configuration. In general, using one thread for each processor yields optimum performance.

At all levels, the maximum number of concurrent attaches is 128. The processing level options are:

Minimum - No threads will be spawned for cleansing. Requests will be placed in a queue. The client that has been waiting the longest for a request to be serviced (based on when the server last processed a request for that client) is processed next. Note that the network queue limits the number of attach requests that can be waiting.

Default - One thread will be actively cleansing; another thread will be listening for requests on the network. Other requests will wait until the request is completed. This level is most appropriate for a system with one or two execution cores.

High - Eight threads will be actively cleansing. Other requests will wait until a request is completed. This level is most appropriate for a system with more than four cores.

Maximum - A thread will be created for each incoming request, within the limit of 128 concurrent attaches. This level can increase performance depending on the overall load on the system, for example, if some records require more processing resources.

2. If you want the cleansing service to start automatically when Windows starts, verify that **Start services automatically?** is selected. This check box is selected by default.
3. Click **Next**. The next window displayed depends on the components you have selected for installation.

Installing the SDK Matching Service

When you install the SDK matching service, the window shown in Figure 7-15

opens.

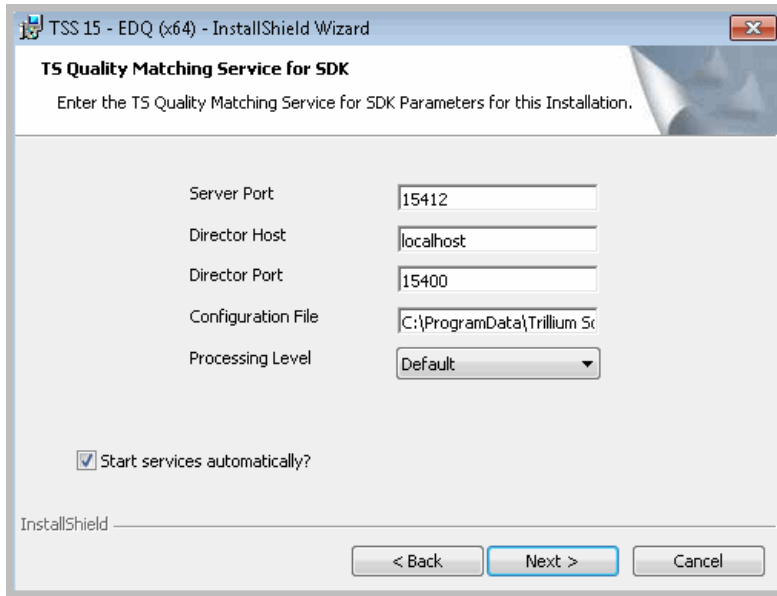


Figure 7-15 SDK Matching Service

► **To install the SDK Matching Service**

1. Set the following parameters:

Server Port: Enter the port number on which the matching service will listen for requests. Ensure that the same port is not used by multiple services. The default is 15412.

Director Host: Enter the host name or IP address of the node on which the Director for TS Quality is running.

Director Port: Verify that the port number is the same as the port number on which the Director is listening. This port was established when the Director was installed. The default is 15400.

Configuration File: Accept the default path and file name for the sample Trillium configuration file or enter a new path and name.

Processing Level: The Processing Level determines how requests will be queued for handling by the server. The optimum processing level is

dependent on your hardware configuration. In general, using one thread for each processor yields optimum performance.

At all levels, the maximum number of concurrent attaches is 128. The processing level options are:

Minimum - No threads will be spawned for matching. Requests will be placed in a queue. The client that has been waiting the longest for a request to be serviced (based on when the server last processed a request for that client) is processed next. Note that the network queue limits the number of attach requests that can be waiting.

Default - One thread will be actively matching; another thread will be listening for requests on the network. Other requests will wait until the request is completed. This level is most appropriate for a system with one or two execution cores.

High - Eight threads will be actively matching. Other requests will wait until a request is completed. This level is most appropriate for a system with more than four cores.

Maximum - A thread will be created for each incoming request, within the limit of 128 concurrent attaches. This level can increase performance depending on the overall load on the system, for example, if some records require more processing resources.

2. If you want the matching service to start automatically when Windows starts, verify that **Start services automatically?** is selected. This check box is selected by default.
3. Click **Next**. The next window displayed depends on the components you have selected for installation.

Installing TS Quality for SAP

TS Quality for SAP is a client application that passes cleansing and matching requests from your SAP environment to TS Quality cleansing and matching services, and returns the cleansed and matched data to your SAP environment. It includes the TrilliumSAPNW client, a cleansing service, matching service, and a sample project.

TS Quality for SAP requires installation of both the Enterprise Data Quality (EDQ) option and TS Quality for Real Time. Installation of the two optional components of TS Quality for Real Time (TS Web Services and Director SDK) is not required.

- ① *Installing TS Quality for SAP is a two-part process. After you have finished the installation steps described in this section, refer to [Installing the SAP Add-On and Support Packages on page 256](#) of this manual and to the [TS Connector for SAP Products Reference Guide](#) for additional installation and configuration information.*

Pre-Installation Checklist

The following information should be available prior to installation.

- What version of SAP is implemented?
- What version of SAP Basis is implemented?
- Is the SAP operating system installed on a Windows system or a Linux system?
- Are you creating a stand-alone gateway for the two systems to communicate? (This is highly recommended for failover.)
- Typically, the following team members should be available during installation:
 - SAP Basis Administrator – to install the Add-On
 - SAP function team member – to perform the configuration
 - Other (system administrator)

Optional components include:

SAP Client: The SAP NW client and a sample project for the SAP Connector, which you can use to test your SAP Connector installation.

Cleansing Service: A service that handles data cleansing requests. The default service name is TSQSAPCleanser15.

Matching Service: A service that handles data matching requests. The default service name is TSQSAPMatcher15.



Figure 7-16 SAP Options

When you install the TS Quality for SAP, the window shown in Figure 7-17 opens.

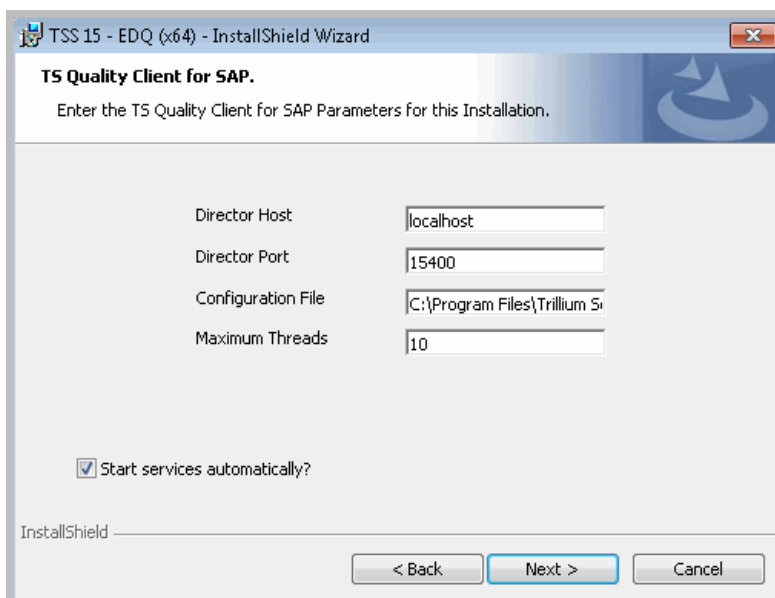


Figure 7-17 Installing the SAP Client

► **To install TS Quality for SAP**

1. Set the following parameters:

Director Host: The host name or IP address of the node on which the Director is running.

Director Port: Verify that the port number is the same as the port number on which the Director is listening. This port was established when the Director was configured. The default is 15400.

Configuration File: The path and filename of the TS Quality SAP configuration file.

Maximum threads: The maximum concurrent requests that the client can handle. The default is ten (10).

2. If you want the TS Client for SAP to start automatically when Windows starts, verify that the **Start services automatically?** check box is selected. This check box is selected by default.
3. Click **Next**. The TS Client for SAP RFC window opens.

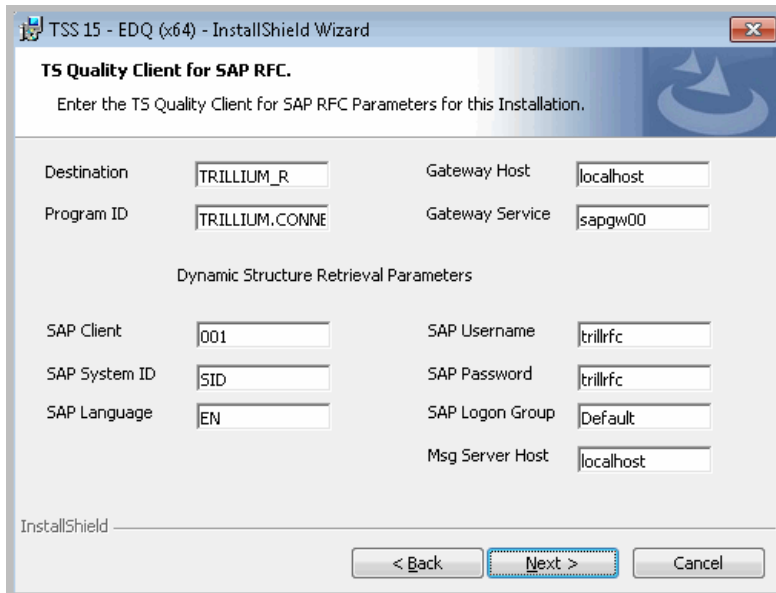


Figure 7-18 SAP RFC

4. Set the following RFC parameters:

Destination: Unique destination name entry. Defaults to TRILLIUM_R.

Program ID: The registered SAP RFC server program name. Defaults to TRILLIUM.CONNECTOR.

Gateway Host: The SAP Gateway server host name.

Gateway Service: SAP Gateway server name. It is usually the value "sapgw" followed by the two-digit system number.

SAP Client: The SAP customizing client where the TS Quality Connector is activated.

SAP System ID: Unique SAP application system name, for example C5W.


SAP Language: Defaults to EN (English).

SAP Username: The SAP RFC service user name, for example TRILLRFC.

SAP Password: The SAP RFC user's password that was set by the Security Administrator.

SAP Logon Group: Application server's group name (optional); default is Default.

Msg Server Host: Host name of the message server, for example localhost or wnarkka-lt.

 *In a Windows environment, these parameters are automatically copied to the SAPRFC.INI file that is used for communication between TS Quality and the SAP system. Refer to the TS Connector for SAP Products Reference Guide for additional information on the SAPRFC.INI.*

5. Click **Next**. The next window displayed depends on the components you have selected for installation.

Installing the Cleansing Service for SAP

When you install the Cleansing Service for SAP, the window shown in Figure 7-19 opens.

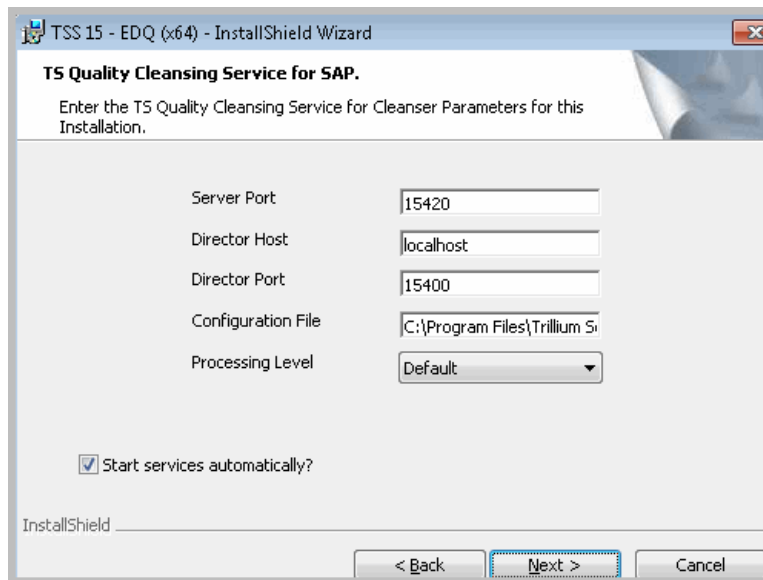


Figure 7-19 SAP Cleanser Service

► To install the cleansing service for SAP

1. Set the following parameters:

Server Port: The port number on which the cleansing service will listen for requests. Ensure that the same port is not used by multiple services. The default is 15420.

Director Host: The host name or IP address of the node on which the Director for this client is running.

Director Port: Verify that the port number is the same as the port number on which the Director is listening. This port was established when the Director was configured. The default is 15400.

Configuration File: Accept the default path and file name for the

sample TS Quality configuration file or type a new path and name.

Processing Level: The Processing Level determines how requests will be queued for handling by the server. The optimum processing level is dependent on your hardware configuration. In general, using one thread for each processor yields optimum performance.

At all levels, the maximum number of concurrent attaches is 128. The processing level options are:

Minimum - No threads will be spawned for cleansing. Requests will be placed in a queue. The client that has been waiting the longest for a request to be serviced (based on when the server last processed a request for that client) is processed next. Note that the network queue limits the number of attach requests that can be waiting.

Default - One thread will be actively cleansing; another thread will be listening for requests on the network. Other requests will wait until the request is completed. This level is most appropriate for a system with one or two execution cores.

High - Eight threads will be actively cleansing. Other requests will wait until a request is completed. This level is most appropriate for a system with more than four cores.

Maximum - A thread will be created for each incoming request, within the limit of 128 concurrent attaches. This level can increase performance depending on the overall load on the system, for example, if some records require more processing resources.

2. If you want the cleansing service to start automatically when Windows starts, verify that the **Start services automatically?** check box is selected. This check box is selected by default.
3. Click **Next**. The next window displayed depends on the components you have selected for installation.

Installing the Matching Service for SAP

When you install the matching service for SAP, the Matching Service for SAP window opens.

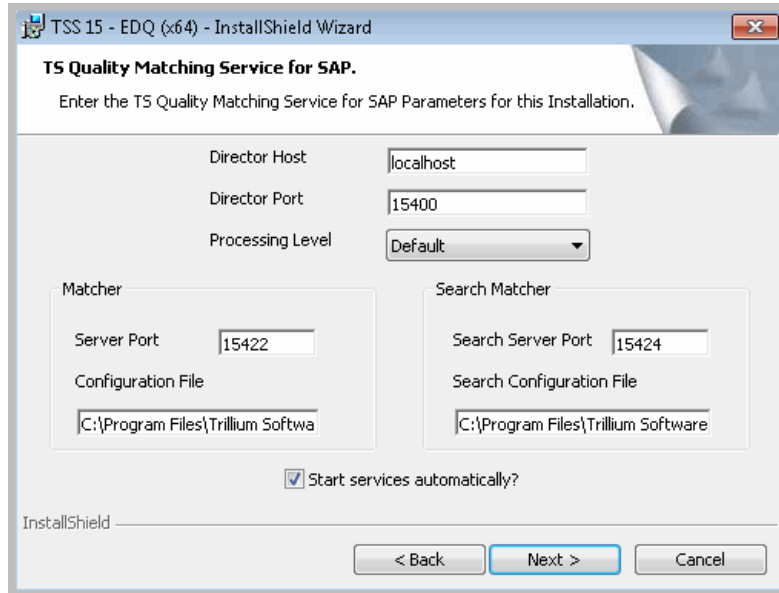


Figure 7-20 SAP Matching Service

► To install the matching service for SAP

1. Set the following parameters:

Director Host: The host name or IP address of the node on which the Director for this client is running.

Director Port: Verify that the port number is the same as the port number on which the Director is listening. This port was established when the Director was configured. The default is 15400.

Processing Level: The Processing Level determines how requests will be queued for handling by the server. The optimum processing level is dependent on your hardware configuration. In general, using one thread for each processor yields optimum performance.

At all levels, the maximum number of concurrent attaches is 128. The processing level options are:

Minimum - No threads will be spawned for matching. Requests will be placed in a queue. The client that has been waiting the longest for a request to be serviced (based on when the server last processed a request for that client) is processed next. Note that the network queue limits the number of attach requests that can be waiting.

Default - One thread will be actively matching; another thread will be listening for requests on the network. Other requests will wait until the request is completed. This level is most appropriate for a system with one or two execution cores.

High - Eight threads will be actively matching. Other requests will wait until a request is completed. This level is most appropriate for a system with more than four cores.

Maximum - A thread will be created for each incoming request, within the limit of 128 concurrent attaches. This level can increase performance depending on the overall load on the system, for example, if some records require more processing resources.

Server Port: The port number on which the matching service will listen for requests. Ensure that the same port is not used by multiple services. The default is 15422.

Configuration File: Accept the default path and file name for the sample TS Quality configuration file or type a new path and name.

Search Server Port: The port number on which the Fuzzy Search matching service will listen for requests. Ensure that the same port is not used by multiple services. The default is 15424.

Search Configuration File: Accept the default path and file name for the sample TS Quality configuration file for Fuzzy Search or type a new path and name.

2. If you want the matching service to start automatically when Windows starts, verify that the **Start services automatically?** check box is selected. This check box is selected by default.
3. Click **Next**. The Ready to Install window opens.

After TS Quality for SAP installation, you must manually set the following environment variables:

- TRILLDIRADDR: Name of the host or IP address (in dotted decimal format) of the node on which the Director listens. Set on client and cleansing/matching service machines.
 - TRILLDIRPORT: Port on which the Director listens for incoming requests. Set on client and cleansing/matching service machines.
- ① *Installing the TS Connector for SAP is a two-part process. After you have finished the installation steps described in this section, refer to [Installing the SAP Add-On and Support Packages on page 256](#) of this manual and to the [TS Connector for SAP Products Reference Guide](#) for additional installation and configuration information.*

Completing Installation

Once components have been selected and configured, you are ready to complete the installation.

► To complete installation

1. On the **Ready to Install** window, click **Back** to modify your selections, or click **Install** to begin the installation. The status bar displays the progress of the installation.

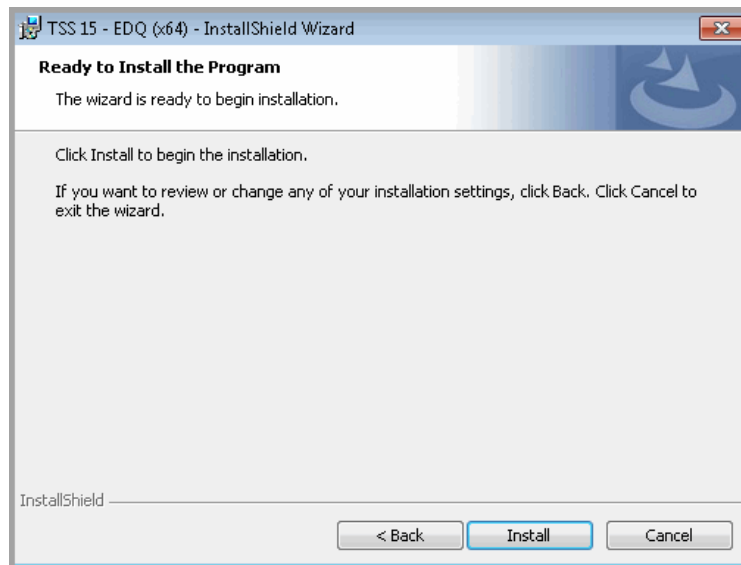


Figure 7-21 Ready to Install

2. When installation is complete, the Completion window opens.

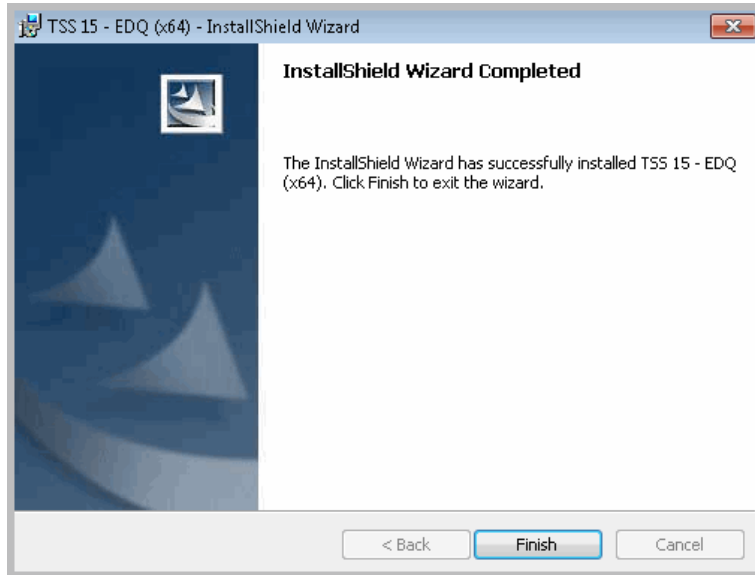


Figure 7-22 Installation Complete

3. Click **Finish** to close the InstallShield wizard. Following the installation:
 - Set environment variables, as described in the following section.
 - If you are using TS Web Services, start Apache Tomcat, as described in [Starting the Apache Tomcat Web Server on page 167](#).
 - Set your table locations, as described in [Setting Table Locations on page 168](#).
 - Install your postal directories/tables and city tables as needed. See [Installing Postal Directories on page 172](#) and [Copying City Tables on page 189](#).

Environment Variables - Windows

Depending on the components installed, the installation sets the PATH environment variable on your system, except for TRILLDIRADDR and TRILLDIRPORT which must be set manually.

Table 7-2 Environment Variables - Windows

Variable	Use
PATH	Library path environment variable, which must include the path to the <code>TGenClient.dll</code> , <code>trillTGenClientLibrary.dll</code> , and <code>libtsi.dll</code> .
TS_DUMP_FILES	(Optional; used for debugging when tracing is enabled in the cleanser or matcher; not set automatically.) Path to the location where binary dump files will be created. If the I/O buffers dump trace level is set, as described in the <i>TS Director User's Guide</i> , individual I/O buffer dump files will be created in this location.
JRE_HOME	If you installed TS Web Services or you are using a Java SDK client, set JRE_HOME to your JRE location.
TRILLDIRADDR	(Set manually for clients using TS Director) Name of the host or IP address (in dotted decimal format) of the node on which the Director listens. Set on client and cleansing/matching service machines.
TRILLDIRPORT	(Set manually for clients using TS Director) Port on which the Director listens for incoming requests. Set on client and cleansing/matching service machines.

Starting the Apache Tomcat Web Server

Before you can begin working with TS Web Services, you must start the Apache Tomcat Web Server.

► To start Apache Tomcat on Linux

1. Log in as a user with system administrator privileges.
2. Set the `JRE_HOME` variable to your Java JRE location.

3. Change directories to Trillium's Apache directory, by default `/opt/trillium/apache-tomcat-8.0.47/bin`.
4. Run the start-up script, `startup.sh`.
5. After Tomcat has started, navigate to `/apache-tomcat-8.0.47/webapps/TrilliumSOAP/WEB-INF/conf` and edit the file `axis2.xml`. Search for port 8080 and change it to the port specified during installation, by default **8484**.

► To start Apache Tomcat on Windows

1. Log in as a user with system administrator privileges and open a command window.
2. Set the `jre_home` variable to your Java JRE location, for example `C:\Program Files\Java\jre1.8.0_102`.
3. Change directories to Trillium's Apache directory, by default `C:\Program Files\Trillium Software\EDQ\15\apache-tomcat-8.0.47\bin`.
4. Run the start-up script, `startup.bat`. A Tomcat window opens. Allow the startup process to complete before attempting to use Tomcat.
5. After Tomcat has started, navigate to `C:\Program Files\Trillium Software\EDQ\15\apache-tomcat-8.0.47\webapps\TrilliumSOAP\WEB-INF\conf` and edit the file `axis2.xml`. Search for port 8080 and change it to the port specified during installation, by default **8484**.

❗ *Tomcat must have been started at least once before you make this change.*

Setting Table Locations

To process your data, Trillium projects use several tables, such as postal tables, parser rule tables, code page tables, and so on. (See [Installing Postal Directories on page 172](#) for information on installation of postal tables.) The location of your tables is defined in an initialization file, `EDQ.ini`. By default, `EDQ.ini` identifies the path to your tables as `/install_path/tables` (Linux) or `\install_path\Trillium Software\EDQ\15\tables` (Windows).

- ① *Tables used with EDQ use UTF-8 character encoding. Tables using any other encoding mechanism are not compatible with EDQ.*

The `tables` directory is created by the EDQ installation and contains the following subdirectories:

- ACE_tables
- aptables
- census_tables
- code_pages
- gatables
- general_resources
- parser_rules
- postal_utf8

If your tables are stored in an alternate location, after you install EDQ you must modify `EDQ.ini` to change the table location. When a project is run for the first time, the path defined in `EDQ.ini` is used to create the file `Config64.tbl` in the project's `settings` directory. To change table locations after the project is run, run the program `trilconfig64.exe` to reset the table locations.

For the 16 Postal Matcher countries (including those for the Custom Postal Matcher) there are two versions of the postal tables—one for 32-bit TS Quality processes, and the UTF-8 version to support EDQ 64-bit. However, all other countries (APAC, global postal matcher, and so on) need only one instance of the ACE_tables, aptables, census_tables, and gatables postal tables as they are already compliant with UTF-8 and/or Unicode data. Therefore, you can simplify project configuration and set `EDQ.ini` to point to a single set of tables used for EDQ 64-bit processing or 32-bit processing.

- ① *For Trillium Quality for Big Data installations, do not change the table locations.*

► To change the default table location

1. Using a text editor open the file `EDQ.ini`, located in the `conf` folder in your Trillium directory path, by default `/opt/trillium/conf` on Linux and `C:\Program Files\Trillium Software\EDQ\15\conf` on Windows.
2. Change the table location definitions.

3. Save and close the EDQ.ini file.
4. If your project has been run previously, run the program `trilconfig64.exe`, located in `/install_path/bin` (Linux) or `\install_path\Trillium Software\EDQ\15\bin` (Windows), specifying the `-f` (force) switch and the project path. For example:

```
trilconfig64 -f /opt/trillium/projects/myproj
```

5. Check the configuration file (`Config64.tbl`) located in the project's settings folder to verify the table locations.
- ① *You can change the top-level TABLES location or change the location of the subdirectories. For example, the following would set the table location to `/tables`, but would specifically set the location of the postal tables to `/mypostaldirectory`:*

```
TABLES = "/opt/trillium/tables"  
POSTAL_TABLES = "/mypostaldirectory"
```

Do NOT change the location of the ACE_tables. ACE tables must reside in the default location.

Running 64-Bit and 32-bit Concurrently

You can install TS Quality (32-bit) and EDQ (64-bit) on the same machine. Components are segregated in different directory paths and do not conflict. The version that will be used depends on your project selections.

- Batch scripts - When you export a project to a batch script, TS Quality creates different versions of the script. Run the 32-bit version to use the 32-bit core components; run the 64-bit version to use the 64-bit core components. See the help file in the TSS Control Center for information on running batch scripts.
- Real-time projects - When you create a cleanser or matcher, you select the processing type, which determines whether the project will run with 32-bit or 64-bit components.

When switching between 32-bit and 64-bit projects, you must make two changes to your environment:

- If both 32-bit and 64-bit locations are included in your PATH environment variable, the first location in the path list will be used. You can find the currently defined location by using the 'which' command on Linux to search for libtrilTGenClientLibrary or the 'where' command on Windows to search for TGenClient.dll. Change the PATH environment variable to point to the correct library location.
- Change the JRE_HOME location. 32-bit projects must use the JRE you installed for the 32-bit Trillium installation; 64-bit projects use the 64-bit JRE.

Improving Performance

If you are planning to use TS Director with EDQ, for improved performance, add the DWORD values shown in Table 7-3 to HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters registry key on the TS Quality/ECS machine.

Table 7-3 TCP/IP Registry Entries

DWORD Value Name	Value Data (Decimal Base)	Description
MaxUserPort	60000	Determines the highest port number TCP can assign when an application requests an available user port from the system. Typically, ephemeral ports (those used briefly) are allocated to port numbers 1024 through 5000, but decimal values up to 65534 are valid.
TcpTimeWaitDelay	30	Determines the time that must elapse before TCP can release a closed connection and reuse its resources. This interval between closure and release is known as the TIME_WAIT state or 2MSL state. During this time, the connection can be reopened at much less cost to the client and server than establishing a new connection. The default value is 240 seconds (4 minutes).

Installing Postal Directories

Postal directories (tables) are a critical part of the data quality process because they provide the address information used to validate and improve the name and address data in your records.

Periodically, the postal services of various countries issue updates to the postal tables. Trillium Software distributes the updates two ways:

- **TSS Download Center (File Portal) FTP website.** TSS Download Center allows you to manually download postal directories through Trillium Software's secure website. *This guide describes how to download and install postal directories using this method.*
- **Trillium Postal Download Web Service.** Trillium Postal Download Web Service is an automated download service introduced in v15.7. The download service allows you to check the status of your postal license and download the postal directories from a browser-based application. See the *Trillium Postal Download Web Service User's Guide* for details.

This chapter has the following sections:

- [File Naming Conventions on page 173](#)
- [EDQ Postal Tables on page 176](#)
- [Default Installation Locations on page 178](#)
- [Defining Alternative Postal Table Locations on page 179](#)

- [Installing on Windows and UNIX on page 185](#)

The installation procedure is the same, whether you are installing for the first time or installing an update.

File Naming Conventions

The postal tables are delivered in a compressed format. The file extensions are .zip (for Windows operating systems) and .tar (for UNIX operating systems). The following file naming conventions are used:

UTF-8 Postal Tables

XXMMMq64.ext, where *XX* is the 2-letter country code, *MMM* is the abbreviation for the month the postal table was issued, and *ext* is either zip or tar. Valid for use on Windows and Linux 64-bit operating systems. Available for TSS v15.2 and later when you install EDQ (64-bit). For more information, see [EDQ Postal Tables on page 176](#).

- ① *Trillium Software ships two sets of Canadian Postal Directories. One set, which has the prefix CAC, is required for SERP certification and is limited to batch processing. The second set has the prefix CA; this set can be used in batch or real-time processing, but does not produce a SERP certificate.*

General and Asian Postal Tables

XXMMMq.ext, where *XX* is the 2-letter country code, *MMM* is the abbreviation for the month the postal table was issued, and *ext* is zip or tar. For example, *USJULq.zip* is the United States postal table for July.

- ① *The General Postal Tables are for 32-bit processing only and do not support UTF-8.*
- ① *Trillium Software ships two sets of Canadian Postal Directories. One set, which has the prefix CAC, is required for SERP certification and is limited to batch processing. The second set has the prefix CA; this set can be used in batch or real-time processing, but does not produce a SERP certificate.*

ACE Postal Tables

jpACEMMM.zip, where *MMM* is the month the postal table was issued.

- ① *ACE Postal Tables are used by the Japanese Address Code Edition (ACE) Postal Matcher. These tables provide address dictionaries to validate and enrich address data. They can be used to return standard address fields as well as address codes and bar codes.*

Global Postal Tables

XXXMMMY.ext, where *XXX* is the 3-letter country code, *MMMY* represents the abbreviation for the month and year the postal table was issued, and *ext* is either zip or tar. For example, `NORJAN15.zip` is the Norwegian postal table for January 2015.

- ① *Global Postal Tables are a subset of international postal tables that are invoked from within Trillium Software System. The postal tables in this subset are: Austria, Brazil, Czech Republic, Denmark, Finland, Greece, Hungary, Ireland, Mexico, New Zealand, Norway, Poland, Sweden, and the Basic countries.*

US Census Directories

USCMMMq.ext. This is the name of the United States census directory that includes the Interpolated Rooftop files. *MMM* is the abbreviation for the month the directory was issued and *ext* is either zip or tar.

USXMMMq.ext. This is the name of the United States census directory that includes the ZIP+4 Centroid files. *MMM* is the abbreviation for the month the directory was issued and *ext* is either zip or tar.

USPMMMq.ext. This is the name of the file that contains only the Interpolated Plus directory, where *MMM* is the abbreviation for the month the directory was issued and *ext* is either zip or tar.

- ① *Census tables, which are available for the U.S. only, assign census geographic codes, such as county, tract, latitude and longitude, to address data. If you are interested in assigning latitude and longitude values to address data for other countries, contact your account manager for more information.*

DPV Directory

USDMMMq.ext. This is the name of the United States Delivery Point Validation directory. *MMM* is the abbreviation for the month the directory was issued and *ext* is either zip or tar.

- ① *Delivery Point Validation (DPV) is a U.S. Postal Service product that helps validate the accuracy of existing address information and identify inaccurate, incomplete, or erroneous addresses.*

LACS^{Link} Directory

USLMMMq.ext. This is the name of the United States LACS^{Link} directory, where *MMM* is the abbreviation for the month the directory was issued and *ext* is either zip or tar.

- ① *LACS^{Link} is a product of the U.S. Postal Service that provides users with an automated method of obtaining a new address for locations that have been converted by local municipalities, usually when the community has implemented a 911 emergency system.*

Suite^{Link} Directory

USSMMMq.ext. This is the name of the United States Suite^{Link} directory, where *MMM* is the abbreviation for the month the directory was issued and *ext* is either zip or tar.

- ① *Suite^{Link} is a product of the U.S. Postal Service that improves business address information by adding suite numbers to qualified records. Only business records that have been identified through CASS processing as having a high-rise default are candidates for Suite^{Link} processing.*

RDI Tables

USRMMMq.ext. This is the name of the Residential Delivery Indicator (RDI) table, where *MMM* represents the abbreviation for the month the RDI table was issued and *ext* is either zip or tar. For example, USRAPRq.tar.

- ① *Residential Delivery Indicator (RDI) is a product available from the U.S. Postal Service (USPS) that identifies a USPS delivery point as being a residential or commercial.*
- ① *Trillium Software's license agreements with the U.S. Postal Service limit the shipment and transfer of DPV, LACS^{Link}, Suite^{Link}, and RDI directories to the United States and its territories. Customers who purchase these directories from Trillium Software must adhere to the same restriction.*

EDQ Postal Tables

As of TSS v15.2, Trillium Software expanded support of 64-bit processing on Windows and Linux operating systems with Enterprise Data Quality (EDQ). EDQ is the 64-bit enabled implementation of TS Quality.

- ① *EDQ 64-bit supports postal tables in UTF-8/Unicode format only.*

To enhance postal table support for 64-bit environments, a set of UTF-8 encoded postal tables are available. The UTF-8 tables are valid for ASCII data on Windows and Linux platforms. For the TSS Postal Matchers, the new UTF-8 postal tables are required for EDQ processing for the following 16 countries: Australia, Belgium, Canada, France, Germany, Great Britain, Hong Kong, Italy, Luxembourg, Malaysia, Netherlands, Portugal, Singapore, Spain, Switzerland, and United States.

For these Postal Matcher countries there are two versions of the postal tables available—one for 32-bit TS Quality processes, and a UTF-8 version to support EDQ 64-bit. However, all other countries (APAC, global postal matcher, and so on) need only one instance of the ACE_tables, aptables, census_tables, and gatables postal tables as they are already compliant with UTF-8 and/or Unicode data.

- ① *Previously only 32-bit versions of these postal tables were available for use with TS Quality. Continue to use the 32-bit supported tables for TS Quality project testing in the Control Center and to export batch scripts to 32-bit systems.*

EDQ Tables Directory

When you install EDQ, a default `\tables` directory is created containing sub-directories for postal tables, code pages, parser rules, and general process files.

Install the appropriate postal tables in the following sub-directories:

- `ACE_tables`. Tables for the JP Postal Matcher Address Code Edition (ACE) Postal Matcher.
- `aptables`. Tables for the Postal Matcher for China, Japan, Korea, and Taiwan.
- `census_tables`. Tables for US Census Geocoder used with the US Postal Matcher.
- `gatables`. Tables for countries used by the Global Postal Matcher.
- `postal_utf8`. 64-bit UTF-8 postal tables for the 16 countries listed above.

The following sub-directories are populated during the EDQ install:

- `code_pages`. Code page tables.
- `general_resources`. General process files, including rule, table, ddx, ddl, and map files.
- `parser_rules`. Parser rule file.

To use a different location for the postal tables, follow the instructions in the section [Defining Alternative Postal Table Locations on page 179](#), to specify the location.

Default Installation Locations

By default, postal-related files and directories are installed to the locations shown in this section. (Windows paths are shown. For Linux, the top-level path is */install_path/tables.*)

UTF-8

TSS 15 EDQ (64-Bit):

`C:\Program Files\Trillium Software\EDQ\15\tables\postal_utf8`

General Postal Tables

TSS 15:

`C:\Program Files (x86)\Trillium Software\MBSW\15\tsq\tables\postal_tables`

Asian Postal Tables (China, Japan, Korea, Taiwan)

TSS 15:

`C:\Program Files (x86)\Trillium Software\MBSW\15\tsq\tables\aptables`

TSS 15 EDQ (64-Bit):

`C:\Program Files\Trillium Software\EDQ\15\tables\aptables`

ACE Postal Tables (Japanese Address Code Edition dictionaries)

TSS 15:

`C:\Program Files (x86)\Trillium Software\MBSW\15\tsq\tables\ACE_tables`

TSS 15 EDQ (64-Bit):

`C:\Program Files\Trillium Software\EDQ\15\tables\ACE_tables`

Census Tables

TSS 15:

`C:\Program Files (x86)\Trillium Software\MBSW\15\tsq\tables\census_tables`

TSS 15 EDQ (64-Bit):

C:\Program Files\Trillium Software\EDQ\15\tables\census_tables

Global Postal Tables

TSS 15:

C:\Program Files (x86)\Trillium Software\MBSW\15\tsq\tables\gatables\datastore

C:\Program Files (x86)\Trillium Software\MBSW\15\tsq\tables\gatables\license

TSS 15 EDQ (64-Bit):

C:\Program Files\Trillium Software\EDQ\15\tables\gatables\datastore

C:\Program Files\Trillium Software\EDQ\15\tables\gatables\license

If you want to use a different location for the postal tables, follow the instructions in the section [Defining Alternative Postal Table Locations](#), to specify the location.

Defining Alternative Postal Table Locations

Depending on your needs, you may want to install the tables to a location other than the specified default directories. If you plan to install some or all of the tables in a non-default location, you must first define those alternative locations before you install the postal tables. (See [Default Installation Locations on page 178](#) for more information.)

The procedure varies, depending on whether you are defining locations for tables used for EDQ 64-bit processing or 32-bit processing.

- ① *For the 16 countries that have both the 32-bit postal tables and 64-bit UTF-8 postal tables, these tables cannot reside in the same directory. Tables for other countries (APAC, global postal matcher, and so on) can reside in the same directory.*

If you are installing the postal tables in their default locations, skip this section

and go to [Installing on Windows and UNIX on page 185](#).

Defining EDQ 64-Bit Table Locations

Use this procedure to define an alternative location for tables used for EDQ 64-bit processing. For example, you might want to configure EDQ to point to a single instance of the ACE_tables, aptables, census_tables, and gatables tables on your network (that is, one set of tables used for both 32-bit and 64-bit processing) instead of copying those country tables to the default EDQ tables directory.

About EDQ.ini and Config64.tbl

The location of your EDQ tables is defined in an initialization file, EDQ.ini. By default, EDQ.ini identifies the path to your tables as `/install_path/tables` (Linux) or `\install_path\Trillium Software\EDQ\15\tables` (Windows).

The following subdirectories are found in the tables directory:

- aptables
- census_tables
- code_pages
- gatables
- general_resources
- parser_rules
- postal_utf8

When you run a 64-bit batch script for an exported TS Quality project for the first time, a configuration file named `Config64.tbl` is created in the project's `/Settings` folder. The tables location used in `Config64.tbl` is determined by the TABLES setting in the EDQ.ini file. Depending on the requirements of your data processing environment, you can change the default table location by changing the path in EDQ.ini.

① *Do not change the location of the ACE_tables. ACE tables must reside in the default location.*

If you change the TABLES location in EDQ.ini after you start your project, you must stop your project, stop Tomcat, delete `Config64.tbl`, restart Tomcat, and restart your project. A new `Config64.tbl` will be created using the new Tables path defined in EDQ.ini.

- ① *On Linux, you must create a symbolic link to the alternative directory, which can be on any mounted drive.*

Alternatively, you can regenerate `Config64.tbl` manually by running `trilconfig64.exe`, located in `/install_path/bin` (Linux) or `\install_path\Trillium Software\EDQ\15\bin` (Windows), specifying the `-f` (force) switch and the project path. For example:

```
trilconfig64 -f trillium/projects/myproj
```

The next time you run the project the new table locations will be recognized. Check the configuration file (`Config64.tbl`) located in the project's settings folder to verify the table locations.

Changing the Global Postal Tables Location

When changing the tables location for Global Postal Tables, you must also change the `gaserver.ini` file.

► To change Global Postal Table locations

1. With a text editor, open the global postal table `gaserver.ini` file, which is located in the `\conf` directory: `C:\Program Files\Trillium Software\EDQ\15\conf`.
2. Set the **CountryDataDirectory** entry to point to the alternative location of the Global Postal Table `datastore\rdata` directory.
3. Set the **KnowledgeBaseDirectory** entry to point to the location of the global postal table `datastore\kbase` directory.
4. Locate the **LicenseDirectory** entry and point it to the global postal table `license` directory.

Figure 8-1 shows an example of a modified `gaserver.ini`.

```
1 [Server]
2 UserName=user
3 CompanyName=companyname
4 CountryDataDirectory=\\server1\driveA\tsq\gaserver_area\datastore\rdata
5 KnowledgeBaseDirectory=\\server1\driveA\tsq\gaserver_area\datastore\kbase
6 LicenseDirectory=\\server1\driveA\tsq\gaserver_area\License
7 LicenseRecipientList=
8 ServerEmailAddress=
9 SMTPServer=
10
11 [Logging]
12 Level=CRITICAL, ERROR, WARNING, INFO, CLIENT
13 LogToFile=Yes
14 LogToScreen=No
15
```

Figure 8-1 Sample of Modified EDQ `gaserver.ini`

5. Save and close the file.

Defining 32-Bit Table Locations

Use this procedure to define an alternative location for postal tables used for 32-bit (non-EDQ) processing so that TSS repositories are able to access the tables.

① *You cannot define an alternative directory for ACE Postal Tables.*

► **To define an alternative location for the 32-bit (non-EDQ) postal tables**

1. Shut down TSS, including all TSS clients.
2. Stop the TSS Scheduler service.
3. Create the alternative postal table installation directory.
 - ① *On UNIX, you must create a symbolic link to the alternative directory, which can be on any mounted drive.*
4. Start the TSS command line utility.
 - On Windows, select **Programs > Trillium Software > version > Repository Administration Command Prompt**.
 - On UNIX, type `./mtb_admin`.

5. When prompted, supply your username, password, and repository name.

① *Use the `_control` repository name to apply the alternative location to all repositories.*

6. Ensure that changes have not already been made to the postal directory installation locations by typing the following commands, individually.

```
define postal_directory
define apac_postal_directory
define census_directory
define ga_directory
```

The commands should each return a failure message of the form “No setting with name ‘`nnn_directory`’ found in table ‘`default_settings`’.” For example, “No setting with name ‘`census_directory`’ found in table ‘`default_settings`’.”

If a value is returned, you need to remove the current setting before defining a new one. See “Removing a postal directory definition” on page 185 for more information.

7. At the `mtb_admin` prompt, type:

```
expert
```

8. Issue one or more of the following commands, pressing **Enter** after each one:

- For non-Asian postal tables:

```
define postal_directory [file join {d:\newpostal}]
```

- For Asian postal tables:

```
define apac_postal_directory [file join {d:\newpostal}]
```

- For census tables:

```
define census_directory [file join {d:\newpostal}]
```

- For global postal tables:

```
define ga_directory [file join {d:\newpostal\datastore}]
```

where `d:\newpostal` is the path of the alternative postal directory

and `datastore` is the required name of the subdirectory.

❶ *On Windows systems, the path must be specified as a UNC path, not a mapped drive.*

9. Type `exit` to close the command prompt window.
10. Move any installed `xxCITY.ext` files (where `ext` is either `len` or `ben`) from the default installation directory to the new, alternative directory.

❶ *These files were copied to the default postal directories when TS Quality project templates were installed. They must be in the same location as the postal tables.*

11. Remove the default directories (or leave them empty).
12. For Global Postal Tables, there is an additional step.
 - a. With a text editor, open the global postal table **gaserver.ini** file, which is located in the `/Software/bin` directory.
 - b. Set the **CountryDataDirectory** entry to point to the alternative location of the global postal table `datastore\rdata` directory.
 - c. Set the **KnowledgeBaseDirectory** entry to point to the location of the global postal table `datastore\kbase` directory.
 - d. Locate the **LicenseDirectory** entry and point it to the global postal table `license` directory.

Figure 8-2 shows an example of a modified `gaserver.ini`.

```
1 [Server]
2 UserName=user
3 CompanyName=companyname
4 CountryDataDirectory=\\server1\driveA\tsq\gaserver_area\datastore\rdata
5 KnowledgeBaseDirectory=\\server1\driveA\tsq\gaserver_area\datastore\kbase
6 LicenseDirectory=\\server1\driveA\tsq\gaserver_area\License
7 LicenseRecipientList=
8 ServerEmailAddress=
9 SMTPServer=
10
11 [Logging]
12 Level=CRITICAL, ERROR, WARNING, INFO, CLIENT
13 LogToFile=Yes
14 LogToScreen=No
15
```

Figure 8-2 Sample of Modified `gaserver.ini`

- e. Save and close the file.
13. Restart Trillium Software System and the Scheduler.
 - ① *On Windows operating systems, if you installed the postal tables on a network drive, you must change the Scheduler and inetd service to run as a Windows domain account instead of a system account.*
14. Install the postal tables. See [Installing on Windows and UNIX](#).

► **To remove a postal directory definition**

1. Shut down Trillium Software System, including all TSS clients.
2. Stop the TSS Scheduler service.
3. Start the TSS command line utility, as described on page 182.
4. When prompted, log on to the `_control` repository.
5. Issue the appropriate command:

```
undefine postal_directory
undefine apac_postal_directory
undefine census_directory
undefine ga_directory
```

Installing on Windows and UNIX

The installation procedures for Windows and UNIX are generally the same and apply to all versions. Where there are differences, they are noted.

- ① *EDQ 64-bit tables are supported on Windows and Linux systems only.*

The installation procedure has multiple parts:

- Install the files in a temporary directory. This procedure is recommended so that the file integrity can be validated before being implemented by your TS Quality production system.

- Validate the integrity of the files.
- Install the files into the production directory.

Installing the Files into a Temporary Directory

There are two procedures you can run, one for non-ACE postal tables and one for ACE postal tables.

► To install/update non-ACE postal directory files

1. Stop the TSS Scheduler and the cleansing services (32-bit, non-EDQ tables only).
2. Create a temporary directory. The temporary location is recommended so that the file integrity can be validated prior to being implemented by TS Quality production processes.
3. Copy the compressed file to the temporary location. Download this file from the TSS Download Center (File Portal) FTP website. See [File Naming Conventions on page 173](#) for a description of the file name formats.
4. Unzip or explode the postal file using the appropriate command (for example, `winZip` or `tar`). The expanded files are placed into the temporary location.
5. (UNIX users only) Review the list of files for any that have a `.Z` extension, indicating that they have been compressed. If necessary, uncompress files by entering the following command:

```
uncompress *.Z
```

ⓘ *Due to the size of some files, the `uncompress` command may produce the error message "MAX FILE LIMIT EXCEEDED." If this occurs, talk to your System Administrator about resetting the `ULIMIT` environment variable to `UNLIMITED` in the UNIX Bourne shell.*

► To install ACE postal directory files

1. Stop the TSS Scheduler and the cleansing services, if not already stopped (32-bit, non-EDQ tables only).

2. Copy the `jpACEMMM.zip` file to a temporary directory. This file is provided by Trillium Software from the TSS Download Center (File Portal) FTP website.
3. Uncompress the `.zip` file.
4. Copy the appropriate file(s) from the temporary directory to the `install_path\tables\ACE_tables` directory:
 - For Windows operating systems, copy all the files under the `len` **directory**.
 - For Linux operating systems, copy the `len.tar` file to the `ACE_tables` directory and uncompress it.
 - For UNIX operating systems, copy the `ben.tar` file to the `ACE_tables` directory and uncompress it.

① *The ACE tables must be installed in the default location to be recognized by Trillium Software System.*

Validating File Integrity

It is strongly recommended that you check the file integrity of postal tables before using them in your projects. The process uses a Trillium Software-provided utility to determine the hash value of the newly installed files. To complete the validation, you compare that value to the one provided in a text file that was delivered with the tables.

① *There are no hash files for ACE tables.*

① *If you have purchased Global Postal Tables, hash files are available for rdata (country data) but not for kdata (knowledge base data).*

About the Hash File

Every postal table you install includes a text file named `xxHASH.txt`, where `xx` is the 2- or 3-character directory identifier. For example, the file `CAHASH.txt` contains the hash values for each of the files in the Canadian postal directory; the file `USCHASH.txt` contains the hash values for each of the files in the US census directory.

About the Hash Utility

The tuhash utility performs a byte-by-byte evaluation of the input file and returns a resulting numerical value (called the hash value) to the screen. You use this utility to generate values for monthly postal updates that are delivered with updates. You then compare the values to the ones provided. If the values match, the postal directories are installed properly. This process can be applied to any file.

The syntax of the tuhash command is:

```
tuhash -i <input_file> -l <lrecl>
```

- i** <input_file> Specifies the input file name.
- l** <lrecl> Specifies the record length of the file. The default record length is 1. For larger files, using a record length of 1 makes the hash program run very slowly. We recommend that you specify the logical record length of the file if it is known. Otherwise, specify a number that can be divided evenly into the file size.

► To run the hash utility

1. Go to a command prompt.
2. Change to the directory that contains the files you want to validate.
3. Enter the tuhash command for the first file you want to validate. For example:

```
tuhash -i CAINDEX2.tbl -l 2
```

4. Press **Enter**. The utility returns the final hash value as shown in Figure 8-3.
5. Open the appropriate hash text file with a text editor.
6. Locate the line that corresponds to the file to which you applied the hash utility.
7. Compare the value in the file with the value in the command window.
8. If the values match, the file integrity is valid. If the values do not match, contact Trillium Software Customer Support.

9. Repeat the process for each postal directory file you installed.

```
C:\Program Files\Trillium Software\TSQuality\14\tables\postal_tables>tuhash -i
caindex2.tbl -1 2

Trillium Utility TUHASH

File           = caindex2.tbl
Final Hash Value = 27891

C:\Program Files\Trillium Software\TSQuality\14\tables\postal_tables>
```

Figure 8-3 Sample TUHASH Results

Error Codes for TUHASH

The following table describes the tuhash error codes.

Code	Description
0	Program completed successfully.
1	<p>The error code '1' can reflect any of the following errors:</p> <ul style="list-style-type: none"> ■ Input file name not specified ■ Unable to open input file ■ Missing or invalid (less than zero) record length ■ Unable to allocate enough memory – try smaller record length
91	Invalid command line option – check spelling.

Installing the Files into the Production Directory

Once you have validated the integrity of the postal files, you can move them into the production directory.

- ① *The delivery of GA Postal Tables includes a series of dump files, named xxxL1DUMP.txt (where xxx is the 3-character country code).*

Copying City Tables

TSS uses city tables in conjunction with the postal tables to validate and enhance address data. City tables are installed with country templates. Updated city tables are also delivered with postal directory (table) updates.

Naming Conventions

There are two city tables per country. The naming conventions are `xxxCITY.ext` where `xxx` is the 2- or 3-character country code and `.ext` is either `len` or `ben`. For example, the city tables for Austria are `ATCITY.len` and `ATCITY.ben`.

City Table Install Location

City tables are stored in the same location as the postal tables. For example, when you receive new postal files for the U.S., you copy both the postal tables *and* city tables into the default tables directory, `install path\tables\postal_tables` or `\postal_utf8` (or the alternative directory you have set up).

An exception are city tables associated with Global Postal Tables (see [Global Postal Tables on page 174](#)); these tables are generally stored in the same directory as the standard postal tables (also referred to as non-Asian postal tables). For example, when you receive new postal files for Finland (or one of the other Global Postal countries), you copy the *postal tables* to the `install path\tables\gatables\datastore` directory (or the alternative directory you have set up); then you copy the *city tables* to the `install path\tables\postal_tables` or `\postal_utf8` directory (or its alternative).

- ① *Whenever you receive updated city tables, you must copy the updated tables to the appropriate directories.*

This section discusses potential problems you may encounter during TSS installation and the steps to resolve them. It includes:

- [Error: Could not create file on page 191](#)
- [Error: Writing to File TrilliumSoftware.DirectorManagerLib.dll on page 192](#)
- [Error: Permission Issues when Building Repository Environment on Linux on page 193](#)
- [Error: PANIC: Not enough space BDB Unable to join the environment on page 193](#)

Error: Could not create file

Problem:

When installing TSS, you get the error:

```
Error: Could not create file
```

Solution:

You see the error because you do not have write permissions to the working directory when running the setup program.

During TSS install, the installer needs to unpack some temporary files, and

does so to the current directory. If you cannot write to that directory, you receive the error.

To workaroud the problem, assign yourself read/write permissions. You can, for example make yourself a member of the TSS admin group so you have all the admin privilege before installing TSS.

Error: Writing to File TrilliumSoftware.DirectorManagerLib. dll

Problem:

When installing the Control Center, you get the error:

```
Error 1304: Error writing to file  
TrilliumSoftware.DirectorManagerLib.dll
```

Solution:

You are getting this error because the client machine has a .NET version that is lower than the recommended version.

Check the version of .NET 4 installed on the client machine. If the version listed is below the recommended version of v4.5.1, install Microsoft .NET Framework v4.5.1. Then install the Control Center.

► To check .NET version

1. In the Control Panel, go to Add/Remove Programs.
2. Scroll through the list of installed programs and locate Microsoft .NET Framework.
3. Check the version. We recommend the .NET version is v4.5.1 or higher.

Error: Permission Issues when Building Repository Environment on Linux

Problem:

When installing the Repository Server on Linux, you are getting permission issues/errors even though you have write access to the installation directory.

Solution:

Check the `SELINUX` value in the configuration file and set value as `disabled`.

► To change config file setting

1. Go to `/etc/selinux/` and open the `config.txt` file.
2. Locate `SELINUX`.
3. If the current value is `enforcing`, change value to:
`SELINUX=disabled`
4. Reboot your server system.

Error: PANIC: Not enough space BDB Unable to join the environment

Problem:

When upgrading or converting a repository, you see the error:

`PANIC: Not enough space BDB Unable to join the environment`

Solution: You see this message and may see other messages related to **BDB out of resources** because the upgrade process opens all repositories without closing them as a result the system may run out of space.

To resolve the issue:

- remove the repository's `tmp` directory
- rerun upgrade

Uninstalling TSS on UNIX

Use the instructions in this chapter to uninstall the Repository Server, Country Templates and Batch Deployment Tool. The chapter includes the following topics:

- [Uninstalling the Country Templates on page 195](#)
- [Uninstalling the Repository Server on page 196](#)
- [Uninstalling the Batch Deployment Tool on page 200](#)
- [Uninstalling Enterprise Data Quality \(EDQ\) 64-bit on page 201](#)

① *When uninstalling TSS components, always initiate the process from outside of the `_uninst` directory. This directory was created during the TSS installation and will be removed during uninstall.*

Uninstalling the Country Templates

Uninstall the country templates before you uninstall the repository server.

► To uninstall the Country Templates

1. Log in as the TSS administrator. Locate the directory where you installed country templates.

2. Run the uninstaller program:

```
./_uninst/CountryProjects15/uninstaller.bin -console
```

(Always run the uninstall outside of the `_uninst` directory. This directory was created during the TSS installation and is removed during uninstall.) The setup prepares for the uninstall and prompts you to confirm the uninstall.

3. Click **Next**.

```
Press 1 for Next, 3 to Cancel or 5 to Redisplay [1]
-----
TSS 15 - Country Templates - InstallShield Wizard
TSS 15 - Country Templates will be uninstalled from the following location:
/home/jchatte/V15
with the following features:
Quality Country Projects
  US - United States
  ZZ - Basic Level Countries
  XX - Default Project
Press 1 for Next, 2 for Previous, 3 to Cancel or 5 to Redisplay [1] █
```

You will see a list of the country templates that will get uninstalled.

4. Press **Enter** to begin to uninstall. After uninstall is complete, you will see the message.

```
-----
TSS 15 - Country Templates - InstallShield Wizard
The InstallShield Wizard has successfully uninstalled TSS 15 - Country
Templates. Choose Finish to exit the wizard.
Press 3 to Finish or 5 to Redisplay [3] █
```

Uninstalling the Repository Server

To successfully uninstall the repository server, you need to remove data import directories, binaries, and repository servers. You also need to edit the services and inetd.conf files. These procedures are described in the following sections.

Before You Begin

Before you begin:

- Uninstall country templates.
- Back up repositories you want to retain.
- Verify all users are logged off the TSS repository server.
- Check with your UNIX administrator and ensure that stopping and restarting `inetd.conf` (which listens for client connections) will not cause problems in your environment.

Stopping TSS Scheduler on UNIX

The TSS Scheduler schedules the background tasks for the repository. You must stop the Scheduler prior to uninstalling the Repository Server.

► To stop TSS Scheduler

1. Verify that there are no users logged on to TSS.
2. Log in to the server as the TSS administrator.
3. Change directories to `/<Server Path>/metabase/bin`
4. Enter the command: `./scheduler -stop`

Stopping TSS Rest APIs on UNIX

You must stop the Rest APIs prior to uninstalling the Repository Server.

► To stop TSS Rest APIs

1. Verify that there are no users logged on to TSS.
2. Log in to the server as the TSS administrator.
3. Change directories to `<Server Path>/metabase/bin`
4. Enter the command: `./svr_stop`

Removing Data Import Locations

When configuring the TSS repository servers, you defined import locations. These locations store the source files used for data imports into Trillium Software System. If you are planning to reuse the source files or directory structure, ignore this section. Otherwise, follow the instructions below to delete the data import locations.

► To manually remove data import locations

1. Click **Start > All Programs > Trillium Software > TSS 15 > Repository Manager**.
2. Log in as the TSS repository administrator.
3. Expand the folder **Control Admin**.
4. Double-click on the folder **Loader Connections**.
5. From the List View, right click on a Data Connection and select **Edit**.
6. Take note of the directory location and click **Cancel**.
7. Delete the directory if it is no longer required.
8. Repeat steps for each defined Data Connection and delete as necessary.

For more information about the Repository Manager, refer to the TSS Repository Administrator's Guide. You can access the document from the Windows Start menu. (Click **Start > All Programs > Trillium Software > TSS 15 > Documentation**.)

Removing TSS Binary Files

When you installed TSS, you had defined the repository server path. This directory has all the repository binary files etc, and this is the location you will remove in the following procedure.

► To remove TSS binaries

1. Log in to the repository server as the TSS repository administrator.
2. Locate and verify the directory that contains the TSS binaries.
3. After you are satisfied that this is the correct directory location, type the command:

```
rm -R <Server Path>
```

This removes the directory and all its subdirectories and files under <Server Path>. For example, if you installed the TSS server application in /rel15, enter `rm -R /rel15`.

Removing the TSS Repository

During repository server install, you defined the repository path location by answering the question: **Where would you like to install your Repository Environment?** This is the directory from where you will remove a TSS repository.

► To remove a TSS repository

1. Log in to the server machine as the TSS repository administrator.
2. Locate the directory that contains the TSS repositories.
3. Verify the repository names used with this version by checking the directory /<Repository Path>/metabase. If the names of those repositories are there, then you know that you have the correct path.
4. Once you have verified that you have the correct repository location, type the command:

```
rm -R <Repository Path>
```

This removes the directory and all its sub-directories and files under <Repository Path>. For example, if you installed TSS repositories in /mb15, then you would type:

```
rm -R /mb15
```

- ❗ *If you try to delete the primary directory of a file system, you will see an error message stating that the directory is empty and you will not be able to delete the directory. This however does not mean that the directory is actually empty.*

Removing Entries in Services File

When you installed TSS, two entries were added to the bottom of the `services` file located in the `/etc` directory.

► To remove entries in the Services file

1. Log in to the server system as a root user.

❗ *You must be logged on as root user to modify the services file.*
2. Navigate to the `/etc` directory.
3. Locate the `services` file, then make a backup of the file.
4. Open the `services` file for editing and go to the end of the file. Locate the following lines:

```
# These lines are entered for Trillium Software Metabase
dscserv1_rel1450 8500/tcp
dscserv1_lm_rel1450 8501/tcp
```

5. Delete these three lines from the `services` file.
6. Save your changes and close the file.

Removing Entries from inetd.conf File

When you installed TSS, an entry was added to the bottom of the `inetd.conf` file found in the `/etc` directory.

► To remove entries from inetd.conf

1. In the `/etc` directory, locate the `inetd.conf` file.

❗ *You should still be logged on as root to modify the `inetd.conf` file.*

2. Make a backup of the file.
3. Open `inetd.conf` for editing and go to the end of the file.

You will see two lines inserted into the file. See the graphic below for an example.

```
#These lines are for Trillium Software Metabase
dscserv1_rel1450 stream tcp nowait systest /usr/bin/env -i HOME=/home/systest
.LOGNAME=systest /home/system/rel1450_doc/metabase/bin/mtb_server
```

4. Delete the lines from the `inetd.conf` file.
5. Save your changes and close the file.
6. Restart the **inetd** by entering the command:

```
kill -HUP $(ps -e|grep inetd|head -1|awk '{print$1}')
```

This releases the ports.

This command will stop and restart `inetd`. Check with your UNIX administrator to ensure that this command will not cause problems in your environment.

Uninstalling the Batch Deployment Tool

► To uninstall Batch Deployment Tool

1. Log in as the user who installed BDT.
2. From the location where the BDT `setup` file was copied, run the uninstaller program:

```
./setup -remove
```


Uninstalling Enterprise Data Quality (EDQ) 64-bit

► **To uninstall EDQ 64-bit**

To uninstall EDQ components on Linux machines, run the following uninstall script:

```
_uninst/EDQ/uninstaller.bin -silent
```

You can also execute this command in -console mode.

Uninstalling TSS on Windows

Use the instructions in this chapter to uninstall the Repository Server or other TSS components. The chapter includes the following topics:

- [Uninstalling Country Templates on page 203](#)
- [Uninstalling the Repository Server on page 203](#)
- [Uninstalling the Control Center on page 210](#)
- [Uninstalling the ODBC 32-Bit Reporting Adapter on page 210](#)
- [Uninstalling the OLE DB 64-Bit Provider on page 211](#)
- [Uninstalling the ODBC 64-Bit Reporting Adapter on page 212](#)
- [Uninstalling the Batch Deployment Tool on page 212](#)
- [Uninstalling Enterprise Data Quality \(EDQ\) 64-bit on page 213](#)
- [Removing Post-Installation Files on page 213](#)

① *When uninstalling TSS, follow the product uninstall sequence documented here.*

When uninstalling TSS components, the uninstall process attempts to delete all directory structures associated with the product. However, if files were added to your directory structure after the installation, these directories will not be removed during the uninstall process. You will need to delete them manually. See [Removing Post-Installation Files on page 213](#) for more

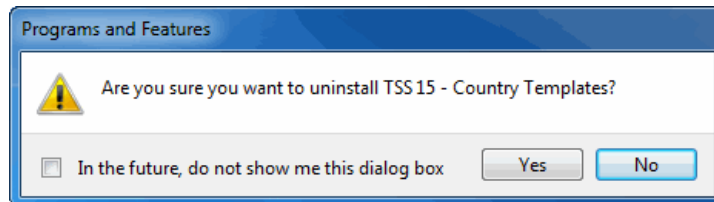
information.

Uninstalling Country Templates

Uninstalling Country Templates will remove all the directories containing the country project templates and the postal tables.

► To uninstall Country Templates

1. Log in to the repository server system as the TSS application administrator.
2. Verify that all users are logged off the Control Center and Repository Manager.
3. From the Control panel, open the **Uninstall or change a program** window and select **TSS 15 – Country Templates**.
4. Click **Uninstall**. You are prompted to confirm the uninstall.



5. Click **Yes** to begin the uninstall.
6. Verify that TSS15 - Country Template is no longer listed

Uninstalling the Repository Server

Before you begin:

- Back up any repository servers or repositories you want to retain.
- Make sure all users are logged off the TSS repository server.

Removing Data Source Import Locations

During repository server installation, you defined the import locations. These locations store the source files used for data imports into Trillium Software System.

① *If you are planning to reuse the source files or directory structure, skip this procedure so that you can reuse them in future.*

► To manually remove data import locations

1. Click **Start > All Programs > Trillium Software > TSS 15 > Repository Manager**.
2. Log in as the TSS repository administrator.
3. Expand the folder **Control Admin**.
4. Double-click the folder **Data Connections**.
5. From the List View, right-click a Data Connection and select **Edit**.
6. Take note of the directory location and click **Cancel**.
7. Delete the directory if it is no longer required.
8. Repeat the steps to delete other data import locations as needed.

For information about the Repository Manager, refer to the *TSS Repository Administrator's Guide*.

Stopping TSS Scheduler Service

1. Log in as the TSS administrator.
2. Open **Control Panel > System and Security > Administrative Tools**.
3. Double-click **Services** and scroll through the list of services.
4. Select **TSS 15 - Scheduler**.
5. Right-click and select **Stop**.

Stopping TSS Apache Tomcat

1. Log in as the TSS administrator.
2. Open **Control Panel > System and Security > Administrative Tools**.
3. Double-click **Services**.
4. Scroll the list and select **Apache Tomcat 8.0 Tomcat8**.
5. Right-click and select **Stop**.

Stopping TSS Rest APIs service

1. Log in as the TSS administrator.
2. Open **Control Panel > System and Security > Administrative Tools**.
3. Double-click **Services**.
4. Scroll the list and select **TSS 15 - Rest APIs**.
5. Right-click and select **Stop**.

Stopping TSS inetd Service

1. Log in as the TSS Administrator
2. Open **Control Panel > System and Security > Administrative Tools**.
3. Double-click **Services**.
4. Locate and select **TSS - inetd**.
5. Right-click and select **Stop**.

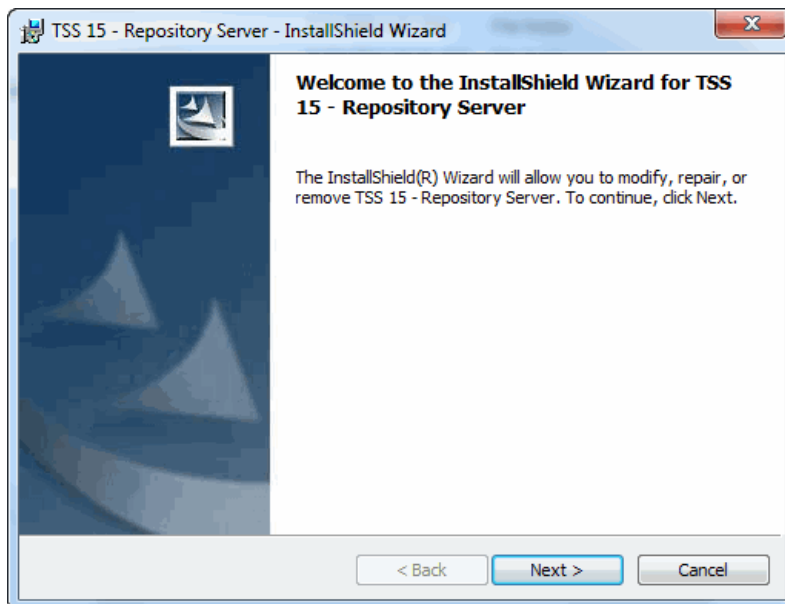
During repository uninstall, you can:

- **Delete** all data and repositories. (See [Deleting all Data and Repositories on page 206](#))
- **Retain** all data and repositories. (See [Retain all Data and Repositories on page 209](#))

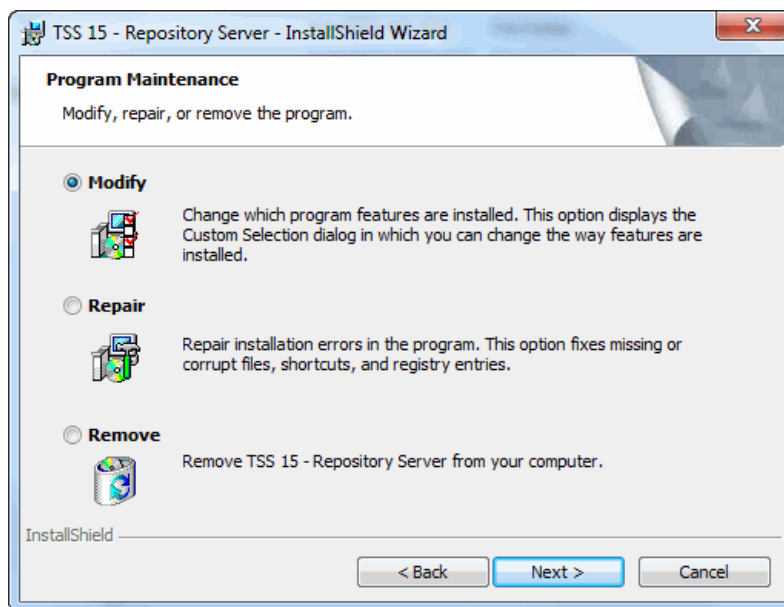
Deleting all Data and Repositories

► **To uninstall TSS repository server and *delete* all data and repositories**

1. Log in to the TSS server as the TSS Administrator.
2. From the Control panel, open the **Uninstall or change a program** window and select **TSS 15 - Repository Server**.
3. Click **Change**. The Welcome window opens.

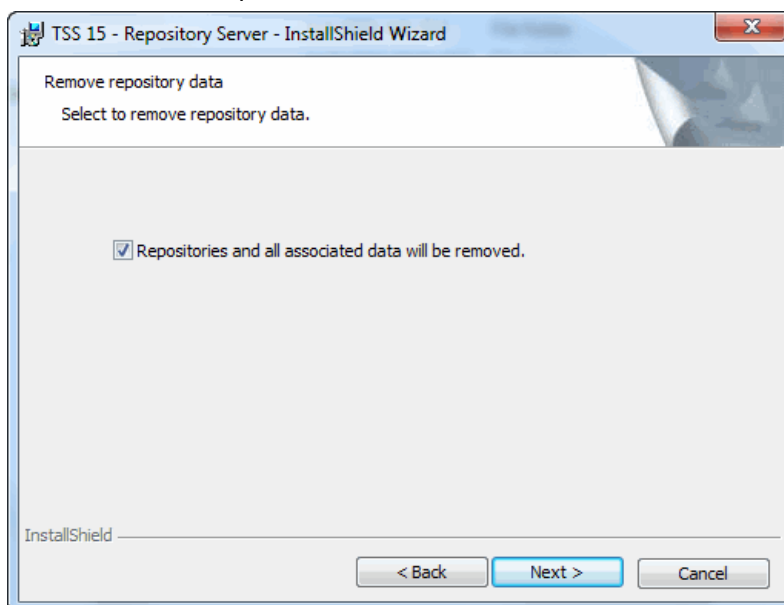


4. Click **Next**. The Program Maintenance window opens.



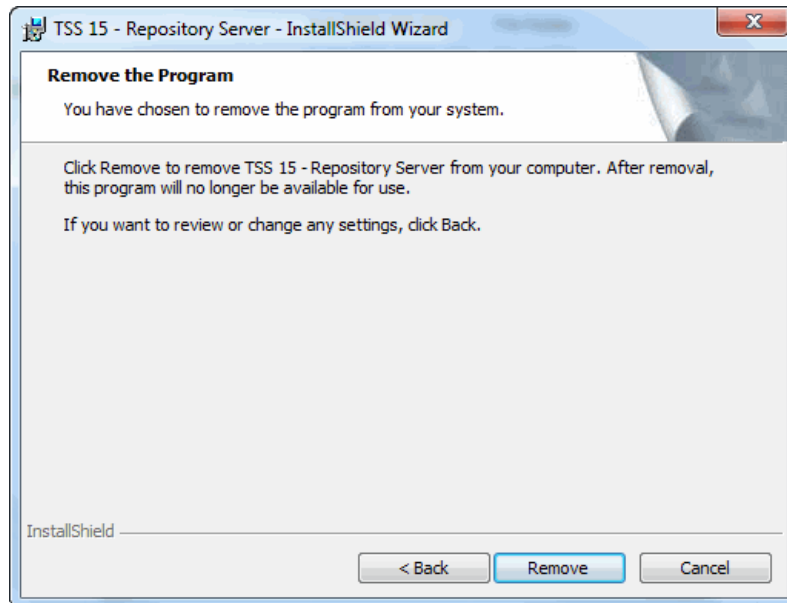
5. Select **Remove** to remove the TSS 15 - Repository Server.
6. Click **Next**.

7. To remove all data, select the **Repository and all associated data will be removed** option.



8. Click **Next**.

The Remove the Program window opens.



9. Click **Remove**. When uninstall is complete, the InstallShield Wizard Completed window opens.
10. Click **Finish** to close the wizard.
11. Verify that **TSS 15 - Repository Server** is no longer listed.

Retain all Data and Repositories

► To uninstall TSS Server and *retain* all data and repositories

1. Follow the instructions in steps 1 to 6 in the procedure above.
2. In the Remove Repository Data window, verify that the **Repository and all associated data will be removed** is **not** selected.
3. Click **Next** to open the Remove the Program window.
4. Click **Remove**. When uninstall is complete, the InstallShield Wizard Completed window opens.

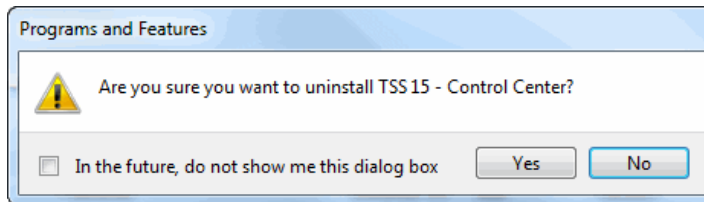
5. Click **Finish** to close the wizard.
6. Verify that **TSS 15 - Repository Server** is no longer listed.

Uninstalling the Control Center

Follow the directions to uninstall the Control Center from each system where it is installed.

► To uninstall the Control Center

1. Log in to the TSS client machine as the Windows Administrator.
2. From the Control panel, open the **Uninstall or change a program** window and select **TSS 15 - Control Center**.
3. Click **Uninstall**. You are prompted to confirm the uninstall.



4. Click **Yes**.
5. Verify that TSS 15 - Control Center entry is no longer listed.

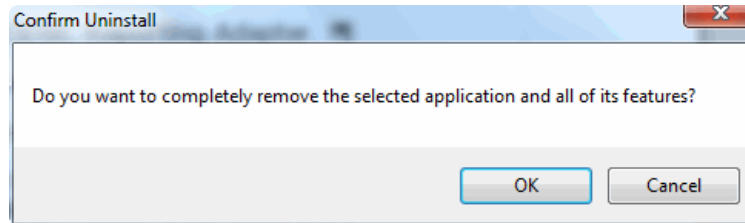
Uninstalling the ODBC 32-Bit Reporting Adapter

Follow these directions to uninstall the ODBC 32-bit Reporting Adapter.

► To uninstall the ODBC Reporting Adapter

1. Log in to the TSS client machine as the Windows Administrator.
2. From the Control panel, open the **Uninstall or change a program** window and select **TSS 15 - ODBC Reporting Adapter**.

3. Click **Remove**. You are prompted to confirm the uninstall.



4. Click **OK**.
5. Click **Finish** to close the wizard.
6. Verify that TSS 15 - ODBC Reporting Adapter entry is no longer listed.

Uninstalling the OLE DB 64-Bit Provider

Follow this procedure if you need to uninstall the OLE DB Provider (64-bit) for any reason.

► To uninstall the 64-bit OLE DB Provider

1. Log on to the TS Quality server as the TSS application administrator.
2. Open the Windows Control Panel and double-click **Add or Remove Programs**.
3. In the Add or Remove Programs window, double-click **Tssversion – OLE DB Provider (64-bit)**. A message opens asking if you are sure you want to uninstall the software.
4. Click **Yes**. When the uninstall finishes, the entry for Tss15 - OLE DB Provider (64-bit) is no longer available.

Uninstalling the ODBC 64-Bit Reporting Adapter

Follow this procedure if you need to uninstall the ODBC Reporting Adapter (64-bit) for any reason.

During the uninstall you may be prompted to uninstall DSNs you created.

► To uninstall the 64-bit ODBC Reporting Adapter

1. Log on to the TS Quality server as the TSS application administrator.
2. Open the Windows Control Panel and double-click **Add or Remove Programs**.
3. In the Add or Remove Programs window, double-click **Tss version – ODBC Reporting Adapter (64-bit)**. A message opens asking if you are sure you want to remove the software.
4. Click **OK**.

Uninstalling the Batch Deployment Tool

Follow the directions to uninstall the Batch Deployment Tool from each system where it is installed.

► To uninstall the Batch Deployment Tool

1. Log in to the TSS client machine as the Windows Administrator.
2. From the Control panel, open the **Uninstall or change a program** window and select **TSS 15 - Batch Deployment Tool**.
3. Click **Uninstall**. You are prompted to confirm the uninstall.
4. Click **Yes**.
5. When the uninstall finishes, verify that TSS15 - Batch Deployment Tool is no longer listed.

Uninstalling Enterprise Data Quality (EDQ) 64-bit

Follow the directions to uninstall EDQ 64-bit from each system where it is installed.

► To uninstall EDQ

1. Log on to the machine where EDQ is installed as an administrator user.
2. Stop all TSO services, such as TSO Director (x64) and TSO Client for SAP (x64).
3. From the Control panel, open the **Uninstall or change a program** window and right-click **TSS 15 - EDQ (x64)**.
4. Select **Uninstall**. You are prompted to confirm the uninstall.
5. Click **Yes**.
6. When the uninstall finishes, verify that TSS 15 - EDQ (x64) is no longer listed.

Removing Post-Installation Files

After uninstall is complete, manually delete any files or folders that were custom added after installation.

Files may be added to the installation directories as a result of user activities. For example, when you deploy a project to real time, the Control Center populates the cache directories in the repository path with projects to be picked up by the Project Deployment Manager. The files in these directories are *not* removed by the uninstall process.

Before you remove any file, check if you need to archive them. For archiving instructions, see [Archiving Post-Installation Files on page 214](#).

► **To manually remove post-installation files and directories (optional)**

1. Log in to the TSS server as the TSS Administrator.
2. Locate the installation directory, also referred to as the repository server path. Assuming you selected the default during installation, the path is *Install_path*\Trillium Software\MBSW\15.
3. Delete any files you do not want to save.
4. Next, navigate to: C:\ProgramData\Trillium Software\MBSW\15
5. Delete files.
6. Delete the directory 15 and any sub-directories.

Archiving Post-Installation Files

If you are planning to reinstall Trillium Software System, it is recommended that you archive any post-installation files you may want to use.

During re-install, the Control Center may overwrite old files with new files of the same name, or write new data into existing files, thereby corrupting them.

► **To manually archive post-installation files and directories (optional)**

1. Log in to the TSS server as the TSS administrator.
2. Locate the installation directory, also referred to as the repository server path. Assuming you selected the default during installation, the path is *Install_path*\Trillium Software\MBSW\15.
3. Archive any files you want to save.
4. Navigate to: C:\ProgramData\Trillium Software\MBSW\15
5. Archive any files you want to save.

Installing TS Quality Core Only

- ① *The information in this appendix applies to 32-bit environments only. If you need to install TS Quality Core in a 64-bit environment, see [Installing EDQ on page 127](#).*

TS Quality, an optional component of the Trillium Software System installs executables and libraries for TS Quality processes and utilities. Out of the box, if you are licensed for TS Quality, it is installed with the repository server. You can also install just this component on a as needed basis. For example, you may need to install TS Quality if you will create TS Quality projects to deploy to real time.

This chapter contains instructions on how to install and uninstall **TS Quality Core only** on UNIX and Windows operating systems.

This chapter includes:

- [Installing TS Quality Core Only on UNIX on page 216](#)
- [Uninstalling TS Quality Core Only on UNIX on page 217](#)
- [Installing TS Quality Core Only on Windows on page 218](#)
- [Uninstalling TS Quality Core only on Windows on page 222](#)

Installing TS Quality Core Only on UNIX

By default, TS Quality is installed with the repository server. You can also install just the TS Quality core component on an as needed basis.

Before you begin, verify you have set up user permissions as described in [Defining User Accounts on UNIX on page 23](#).

► To install TS Quality core only on UNIX

1. Log in to the system where you plan to install the TS Quality Core Only as the TSS administrator.
2. If you have not yet done so, download the setup from the TSS Download Center (File Portal) FTP website.
3. Locate the directory `/Repository_Server`
4. Set execute permissions on the launcher (if necessary):
`chmod +x tss_server_version.build_platform.sh`
5. Run the setup file with the following command:
`tss_server_version.build_platform.sh -coreonly directory`
where *directory* is the TS Quality install location.
The setup prepares the environment and displays the prompt **Choose your Oracle version**.
6. Type the option number (1, 2 or 3) that applies to your site and press **Enter**. The default value is 1 (Oracle 10g).

① Depending on your operating system and configuration, you may see different choices for Oracle client versions.

The process installs the Data Adapter. Data Adapter provides read/write

functionality to various database products supported by TSS.

```
hhdr1dev01:/home/jchatte/V15_135 %./setup.sh -coreonly /home/jchatte/TSQuality
=====
Preparing setup, please wait....
=====
Installing TS Quality core to /home/jchatte/TSQuality/tsq
=====
/home/jchatte/V15/tsq.tar.gz.Z: No such file or directory
tar: blocksize = 0

Choose your oracle version:

    1. Oracle 9i (default)
    2. Oracle 10g
    3. None
Enter choice (1-3): 1

=====
Installing Data Adapter
=====
Installation complete.
=====
```

7. After installation is complete, you see the installation complete message.

Uninstalling TS Quality Core Only on UNIX

When uninstalling TSS, always initiate the process from outside of the `_uninst` directory.

► To uninstall TS Quality on UNIX

1. Locate the directory that contains the TSS Quality installation.
2. Type the command:

```
rm -R <tsqlocation>
```

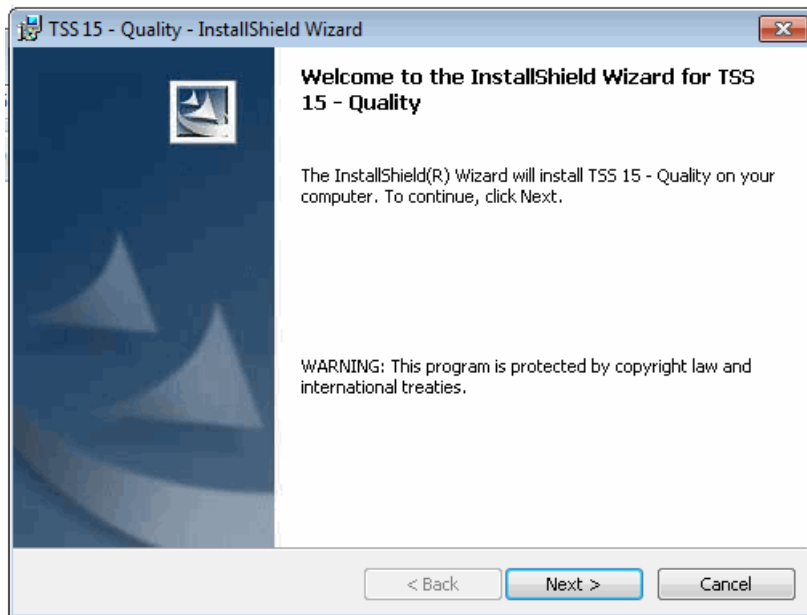
where `<tsqlocation>` is the directory where you installed TS Quality.

Installing TS Quality Core Only on Windows

► To install TS Quality on Windows

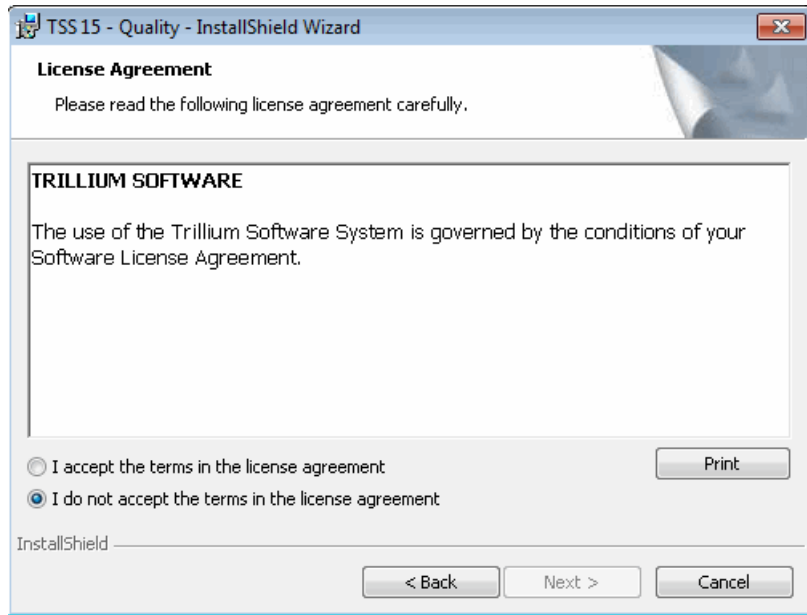
1. Log in as the TSS administrator.
2. Browse to the setup files you downloaded prior to installation from the TSS Download Center (File Portal) FTP website.
3. Go to the folder level: `\\tsq15.0.0\TSS\buildnumber\TSS_Windows_Quality_Core_Only` and run the `tsq15.0.0.build#.Win32` executable.

The InstallShield Wizard gathers the required information and shows the welcome message.

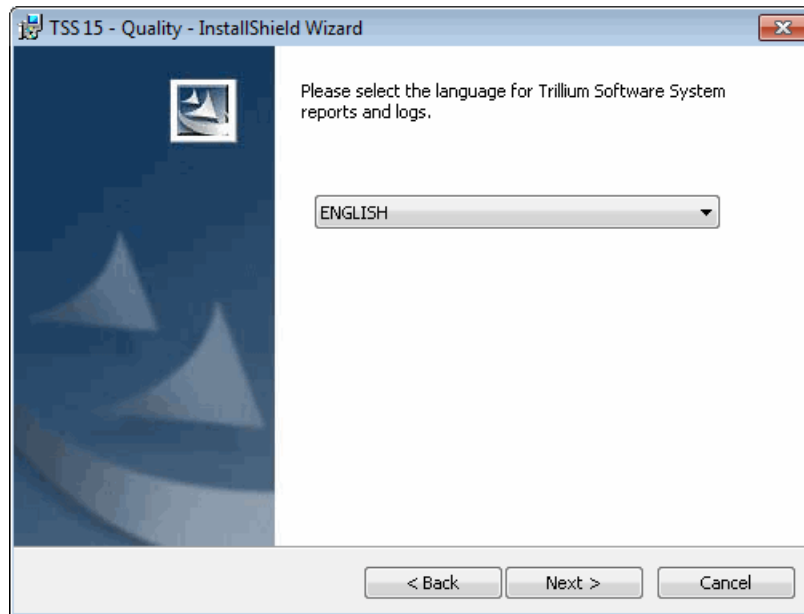


4. Click **Next**.

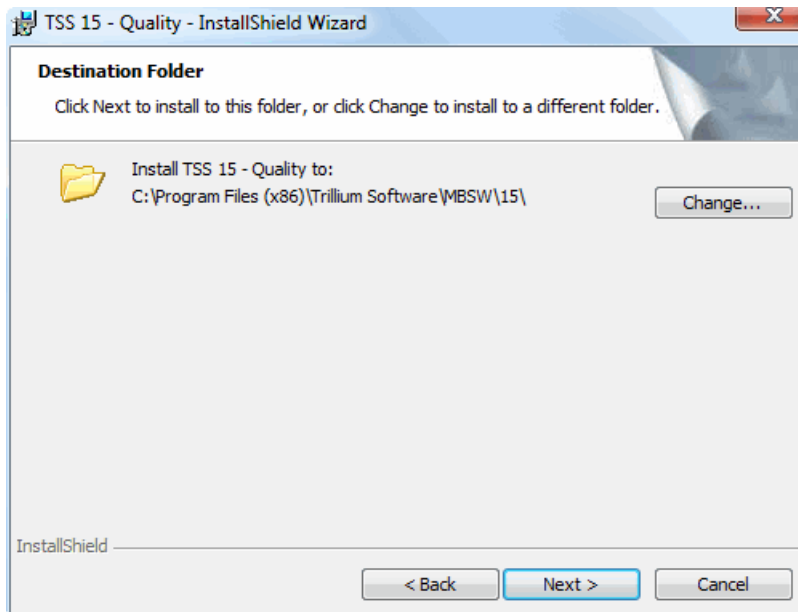
The License Agreement window opens.



5. Read the License Agreement and select **I accept the terms in the license agreement** option.
6. Click **Next**. The Language window opens, with **ENGLISH** as the default language to use for reports and log files.

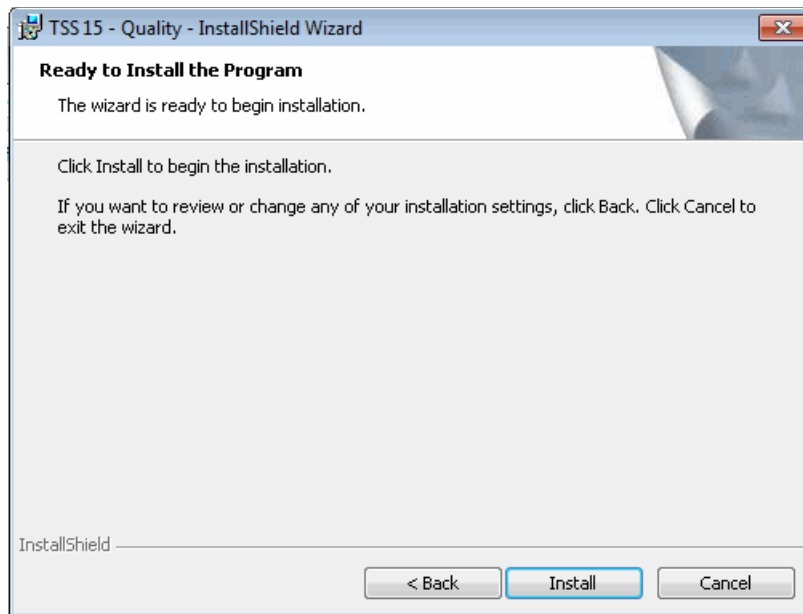


7. To choose another language, click the drop-down list and select from the available languages.
 - ① *This language setting only affects TS Quality processes running outside the Control Center.*
8. Click **Next**. The Destination Folder window opens.



9. Click **Next** to accept the default path. Alternately, click **Change** to specify a custom destination folder and then click **Next**.

The Ready to Install window opens:



10. Click **Install** to begin. A status window shows the progress. When complete, the InstallShield Wizard Completed window opens.
11. Click **Finish** to close the wizard.

Uninstalling TS Quality Core only on Windows

Uninstalling TS Quality removes all TS Quality components. Before you begin, verify that all users are logged off the Control Center and Repository Manager.

► To uninstall TS Quality

1. Log in to the TS Quality server as the TSS administrator.
2. In the Control Panel, open Add or Remove Programs.
3. Scroll through the list and select **TSS 15 – Quality**.
4. Click **Remove**. You are prompted to confirm the uninstall.
5. Click **Yes**.

Installing Standalone TS Web Server

This appendix guides you through the steps required to install standalone TS Web Server. The TS Web Server allows communication between the repository server and web-based Trillium applications the Discovery Center and Administration Center.

This chapter includes the following topics:

- [Understanding Configuration on page 224](#)
- [Installation Checklist on page 225](#)
- [Installing Standalone TS Web Server on page 226](#)
- [Starting and Stopping TSS Rest APIs Service on page 231](#)
- [Uninstalling Standalone TS Web Server on page 231](#)

① *You need to install the TS Web Server only if you installed the repository server on Sun SPARC or AIX and you intend to use the Discovery Center and/or the Administration Center.*

Understanding Configuration

In Linux and Windows environments, when you install the repository server, it automatically installs the TS Web Server.

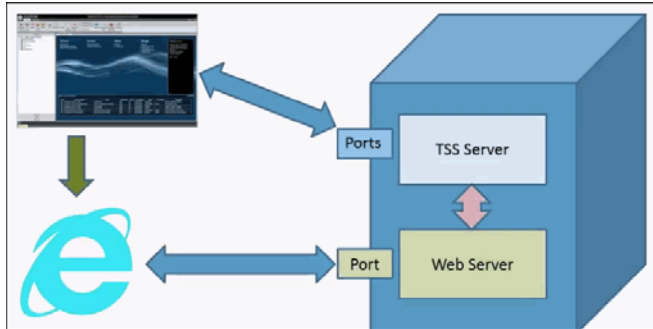


Figure 2-1 Standard TS Web Server Configuration

The repository server installation does not install TS Web Server on Sun SPARC or AIX.

Therefore, you must install the TS Web Server as a standalone application on a Windows system so that the web server can communicate with the repository server.

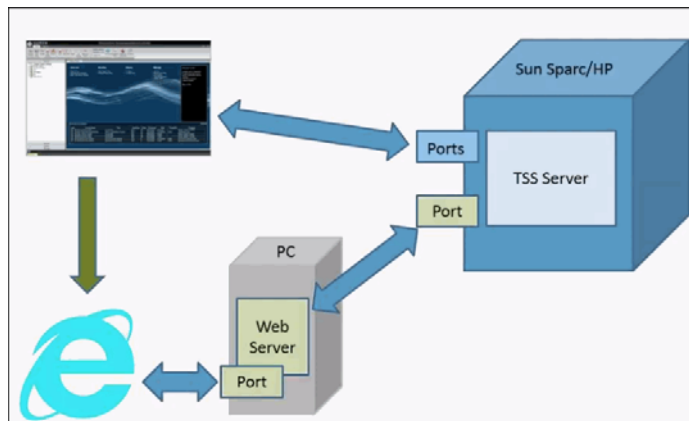


Figure 2-2 Standalone TS Web Server Configuration

Installation Checklist

Before you install the TS Web Server:

- Familiarize yourself with the install setup and any associated release notes.
- Verify network connectivity and access to the repository server by issuing a telnet command from the Windows system to the server. If you cannot telnet to the repository server, you will not be able to install the Web Server.
- Identify repository server port and hostname.
- Identify available port for UI Web Server.

During installation, you are prompted to provide port numbers for UI Web Server.

► To find available port number for UI Web Server

1. From the Windows Start menu, select **Start > Run...**
2. Type `cmd` and click **OK**.
3. At the prompt, type:

```
netstat -an
```
4. Press **Enter**. This returns a list of active ports.
5. Review the list and identify available ports. Available ports do **not** appear in the list.
6. Type `exit` to close the window.

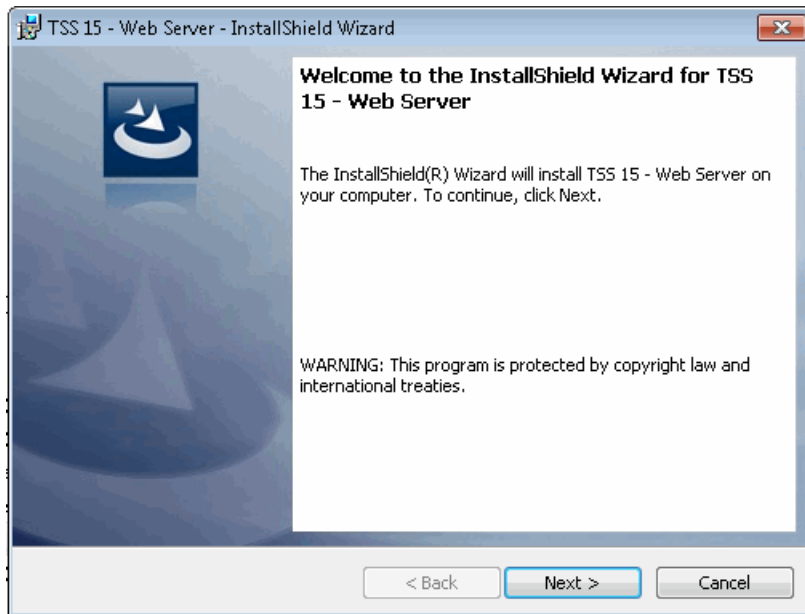
Installing Standalone TS Web Server

Install the TS Web Server application only if your repository server is running on Sun SPARC or AIX.

Do not install the TS Web Server on a Windows system where you installed the repository server. The TS Web Server should be installed on a separate Windows system.

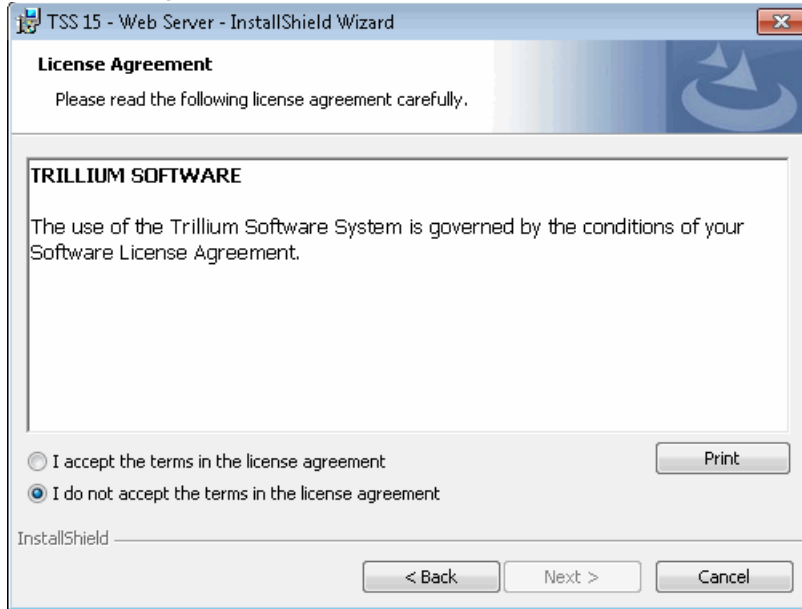
► To install TS Web Server on Windows

1. Log in as the TSS administrator.
2. Browse to the setup files you downloaded prior to installation from the TSS Download Center (File Portal) FTP website.
3. Click **TSS 15- Web Server**. The InstallShield Wizard gathers the required information and shows the Welcome window.

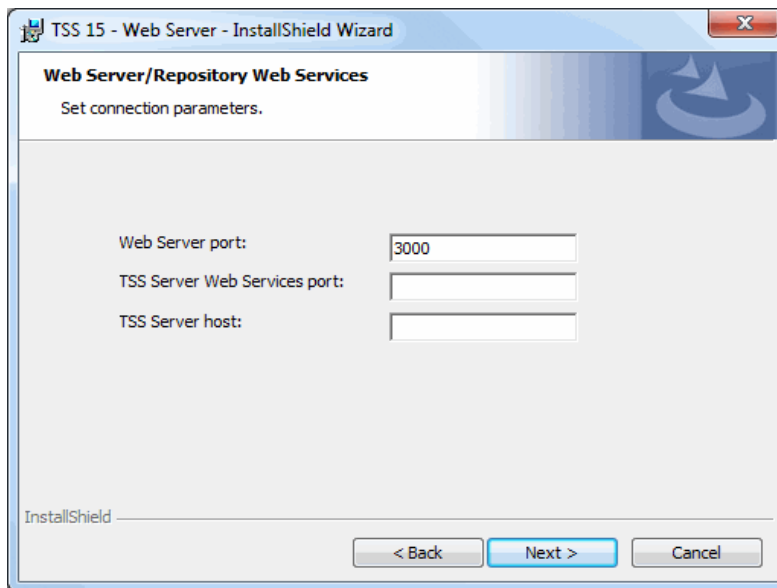


4. Click **Next**.

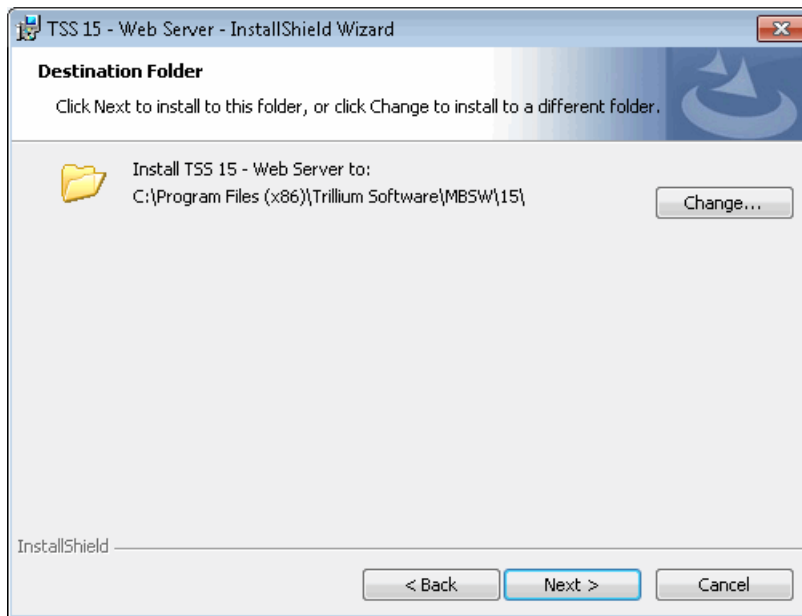
The License Agreement window opens.



5. Read the License Agreement and select **I accept the terms in the license agreement** option.
6. Click **Next**. The Web Server/Repository Web Services window opens.

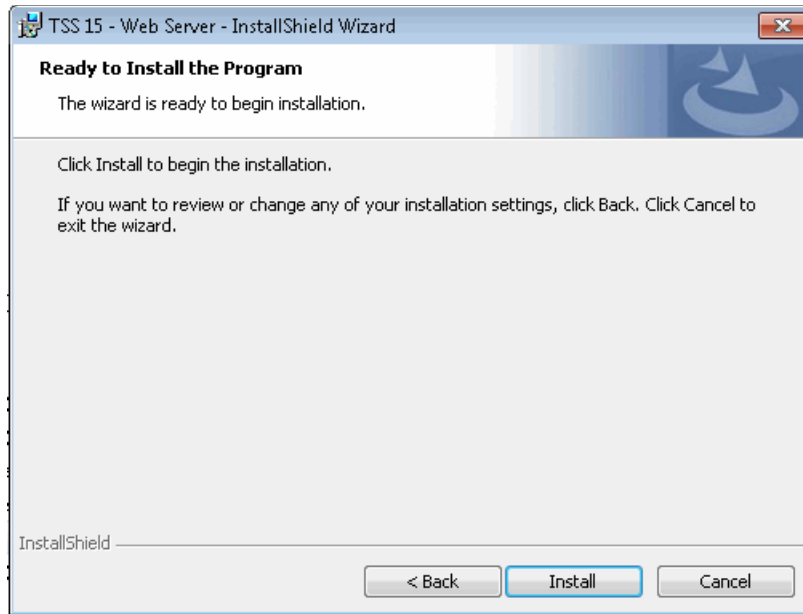


7. In **Web Server Port**, enter a port number or keep the default of 3000. This is the port number the TS Web Server will listen on.
8. In **TSS Server Web Services port**, enter the same port number you used for web services, when you installed the repository server.
9. In **TSS Server host**, enter the fully qualified domain name or the IP address of the repository server system.
10. Click **Next**. The Destination Folder window opens.



11. Click **Next** to accept the default path.
Alternately, click **Change** to specify a custom destination folder and then click **Next**.

The Ready to Install window opens.



12. Click **Install** to begin the install. A status window shows the progress. When the installation is complete, the InstallShield Wizard Completed window opens.
13. Click **Finish** to close the wizard.

After you have installed the TS Web Server, verify that the TSS Rest APIs service is running (see [Starting and Stopping TSS Rest APIs Service](#)).

Starting and Stopping TSS Rest APIs Service

The TSS 15-Rest APIs service should start automatically. You can start the service manually if needed.

► To restart TSS Rest APIs

1. Log in as the TSS administrator.
2. From the Windows Control Panel, open **System and Security > Administrative Tools > Services**.
3. Select the service named **TSS 15 - RestAPIs**.
4. Right-click and select **Start**. The Status changes to Started.

To stop TSS Rest APIs

1. Log in as the TSS administrator.
2. Open **Control Panel > System and Security > Administrative Tools**.
3. Double-click **Services**.
4. Scroll the list and select **TSS 15 - Rest APIs**.
5. Right-click and select **Stop**.

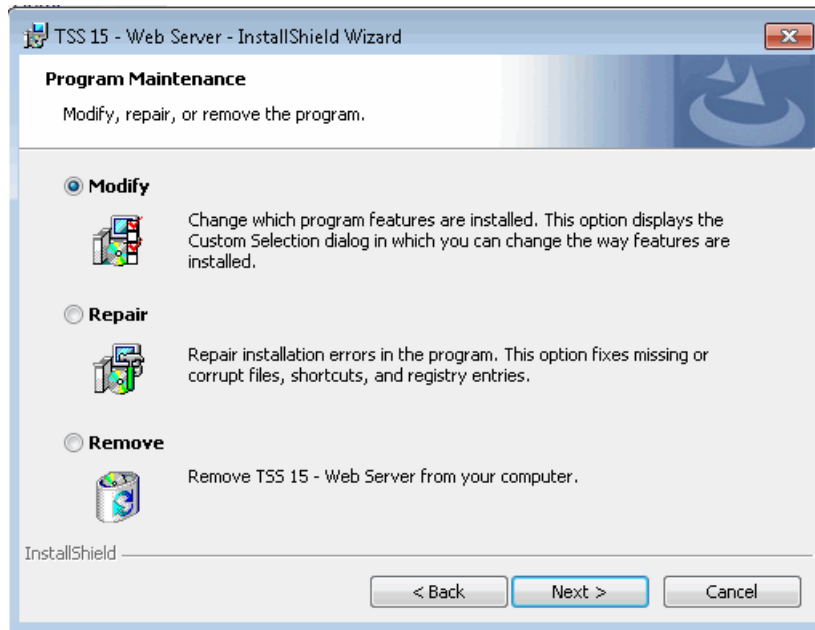
Uninstalling Standalone TS Web Server

Uninstalling TS Web Server will remove all web server components. Before you begin, verify that all users are logged off the Repository Manager.

► To uninstall TS Web Server

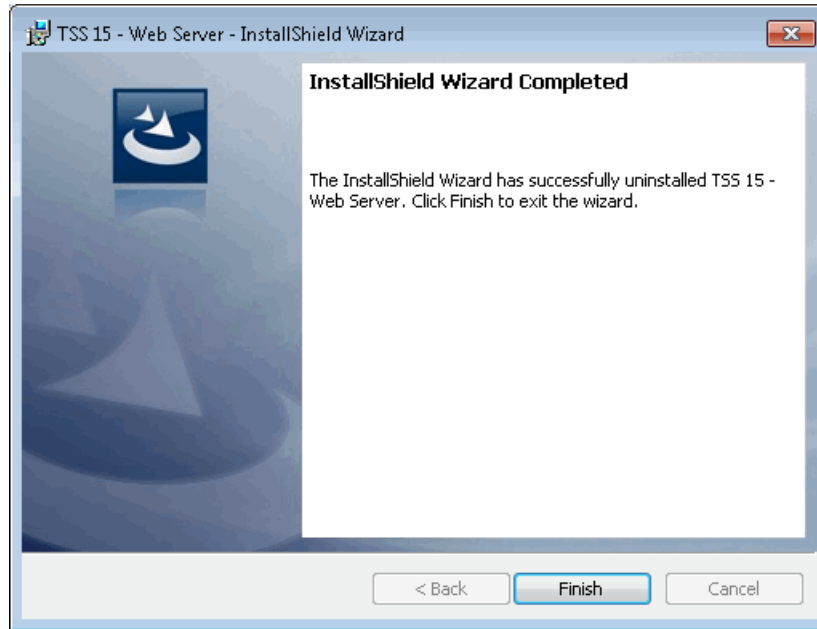
1. Log in as the TSS administrator.
2. In the Control Panel, open Add or Remove Programs.

3. Scroll through the list and select **TSS 15 – Web Server**.
4. Click **Change**. The Program Maintenance window opens.



5. Select **Remove** and click **Next**.

The Remove the Program window opens.



6. Click **Remove**. When uninstall is complete, the InstallShield Wizard Completed window opens.
7. Click **Finish** to close the wizard.
8. Verify that TSS 15 - Web Server is no longer listed.

APPENDIX C *Converting/Upgrading an Older Repository Server to v15.x*

This appendix describes the process for converting an older repository server to TSS v15.x on both on UNIX and Windows operating systems. After you have successfully converted or upgraded an older repository, verify the country project templates and postal tables are pointing to the correct location.

- ① *You can only convert repositories that are pre TSS v14.x. If your repository is of a TSS v14.x or v15.x version, you will need to upgrade the repository.*

This appendix includes:

- [Converting Pre TSS v14 Repositories on page 234](#)
- [Upgrading TSS v14 or v15 Repository on page 239](#)

Converting Pre TSS v14 Repositories

We recommend that you convert existing repositories during the installation of TSS 15.x. However, if for some reason, you did not perform the conversion, manually copying the source repository to the destination directory ready for conversion is not applicable. You will instead need to use the mtb_admin copy

command for repository conversion.

Conversion is a process by which an earlier version of a TSS repository server is made compatible with a later version; for example, converting a v13.0 repository server to be used with v15.x. A repository server is a collection of repositories. You **cannot** convert an individual repository.

① *You can only convert a single repository server! For example, if you convert a repository server during the installation process, you cannot convert another repository server using the `mtb_admin copy` command.*

If you opt to use the `mtb_admin copy` command to convert an older repository server, you must use it **before** you create new repositories, loader connections, users, entities, and so on in TSS v15.x.

Requirements

If you plan to convert an older repository server, it must satisfy the following conditions:

- It must be from TSS Version 11.0.1, 11.5.2, 12.0.1, 13.0 or 13.5.1
- It must be complete and valid.
- It must be clean. You must delete unneeded repositories, users, and so on.

In addition, before you convert the older repository server:

- Delete the v15.x repository installed during v15.x installation.
- Stop the TSS Scheduler for both TSS v15 and the older TSS version from which you are converting.
- Remove the `metabase`, `logging`, and `tmp` directories from the `C:\ProgramData\Trillium Software\MBSW\15\Data` directory.
- All users must be logged off TSS.

You must also know the user ID and password of the repository administrator who created the older repository server.

Converting an Older Repository to TSS v15.x

This section includes instructions on how to convert an older repository server to TSS v15.x and has the following topics.

- [Converting a Repository on UNIX on page 236](#)
- [Converting a Repository on Windows on page 237](#)

Do not use this procedure for an older v15.x repository. You must run an upgrade in that case. See [Upgrading TSS v14 or v15 Repository on page 239](#).

Converting a Repository on UNIX

Follow the instructions to convert an older repository to TSS v15 on UNIX.

► To convert an older repository server to TSS 15.x

1. In the system where you installed TSS v15.x, use the copy command to point to the source repository. For example:

```
/home/username/TSS15/metabase/bin/mtb_admin -user madmin -  
password madmin -copy /home/username/data13.0/
```

where `data13.0` is the path to the source repository.

2. Start the repository conversion:

```
/home/username/TSS15/metabase/bin/mtb_admin -user madmin -  
password madmin -convert ddl convert.ddl
```

where `user` is the TSS v15.x repository administrator ID and `password` is the password associated with that ID.

i *If you are using Windows-authentication with TSS, you must log in with your fully-qualified user name.*

A series of messages display on the console, as shown below.

```
Converting metabase "_control"  
Converted metabase "_control"  
Converting metabase "meta1152"  
Converted metabase "meta1152"  
Upgrading metabases  
Upgraded metabases
```

-
3. When the conversion is complete, restart the TSS Scheduler service.

```
/home/username/TSS15/metabase/bin/scheduler -start
```

Sample

A sample Unix conversion script looks like this:

```
#!/bin/sh

/home/username/TSS15/metabase/bin/scheduler -stop

echo "Deleting 15 metabase"
rm -rf /data/discovery/engg/username/DATA/metabase
rm -rf /data/discovery/engg/username/DATA/logging
rm -rf /data/discovery/engg/username/DATA/logs
rm -rf /data/discovery/engg/username/DATA/tmp
rm -rf /data/discovery/engg/username/DATA/license.db

echo "Copy & upgrade source metabase to v15..."
/home/username/TSS15/metabase/bin/mtb_admin -user madmin -
password madmin -copy /home/username/data13.5.1/

echo "Running conversion..."
/home/username/TSS15/metabase/bin/mtb_admin -user madmin -
password madmin -convert ddl convert.ddl

/home/username/TSS15/metabase/bin/scheduler -start
```

Converting a Repository on Windows

Follow the instructions to convert an older repository to TSS v15.x on Windows.

► To convert an older repository server to TSS v15.x

1. In the system where you installed TSS v15.x, use the copy command to point to the source repository. For example:

```
C:\Program Files (x86)\Trillium Software\MBSW\15\bin>mtb_
admin -user "madmin" -password "madmin" -copy "c:/
ProgramData/Trillium Software/MBSW/13/data13"
```

where `data13` is the path to the source repository.

2. Start the repository conversion:

```
C:\Program Files (x86)\Trillium Software\MBSW\15\bin>mtb_
admin -user "madmin" -password "madmin" -convert ddl
convert.ddl
```

where *user* is the TSS 15.x repository administrator ID and *password* is the password associated with that ID.

① *If you are using Windows-authentication with TSS, you must log in with your fully qualified user name.*

3. When the conversion is complete, restart the TSS Scheduler service.

Sample

A sample Windows conversion script looks like this:

```
@echo off
echo "Deleting 15 metabase..."
rmdir /S /Q "C:\ProgramData\Trillium
Software\MBSW\15\Data\metabase"
rmdir /S /Q "C:\ProgramData\Trillium
Software\MBSW\15\Data\logging"
rmdir /S /Q "C:\ProgramData\Trillium
Software\MBSW\15\Data\tmp"
attrib -h "C:\ProgramData\Trillium
Software\MBSW\15\Data\license.db"
del /F /Q "C:\ProgramData\Trillium
Software\MBSW\15\Data\license.db"

echo "Copy & upgrade source metabase to v15..."
call "C:\Program Files (x86)\Trillium
Software\MBSW\15\bin\mtb_admin" -user "" -password "" -copy
" C:\ProgramData\Trillium Software\MBSW\12"
```

```
echo "running convert"  
call "C:\Program Files (x86)\Trillium  
Software\MBSW\15\bin\mtb_admin" -user "" -password "" -  
convert ddl convert.ddl  
pause
```

Upgrading TSS v14 or v15 Repository

Upgrade is a process by which an version of a TSS 14.x or 15.x repository server is made compatible with a later version of TSS 15.x; for example, upgrading a v14.3 repository server to be used with v15.3.

Trillium Software recommends that you upgrade existing repositories during the installation of TSS 15.x. However, if for some reason, you did not perform the upgrade, manually copying the source repository to the destination repository is not applicable. You will instead need to use the `mtb_admin upgrade` command for repository upgrade.

Repository upgrade is used to patch from version to version. It only adds new tables and does not remove or significantly alter existing tables.

Requirements

If you plan to upgrade a TSS 14.x repository server, it must satisfy the following conditions:

- It must be from TSS Version 14.x or 15.x
- It must be complete and valid.
- It must be clean. You must delete unneeded repositories, users, and so on.

In addition, you must also know the user ID and password of the repository administrator who created the older repository server.

Upgrading an Older Repository

► To upgrade to TSS 15.x

1. In the system where you installed TSS v15.x, log into `mtb_admin _control` repository.
2. Enter `upgrade`
3. Press **Enter** to begin the upgrade process.

Sample

A sample Windows upgrade looks like this:

```
$ ./mtb_admin
TSS Repository Administration Tool (spf-15-0-0_14164)
login: mtbadmin
password: *
Select repository from "_control test1 test2".
repository:
_control: upgrade
_control:
```


Retaining Customizations During Upgrade

This appendix guides you through the steps required to retain changes made to the `config.txt` and `settings.xml` files when you upgrade to TSS v15.7.

This chapter includes:

- [Retaining Changes in config.txt Files on page 242](#)
- [Retaining Changes in server.xml Files on page 243](#)

You do not need to follow these procedures if:

- You are installing Trillium Software on your system for the first time (no previous versions installed).
- For the `server.xml` file, if you are upgrading from a pre-15 version of TSS.
- The `config.txt` or `server.xml` file on your system has not been modified.
- You do not need to retain modifications and instead want to use the default settings in the new `config.txt` or `server.xml` files that are installed with the TSS software.

Retaining Changes in config.txt Files

This section describes how to retain changes made to the `config.txt` file during an upgrade to TSS version v15.x from any previous version (on either Windows or UNIX systems). All changes made post v15.0 are retained during an upgrade.

During an upgrade, the system can automatically detect changes made to the `config.txt` server configuration file on your system. Once identified, the upgrade process automatically renames the custom config file to `config.txt.backup` and installs a new, clean `config.txt` file in the `etc` directory.

To retain your custom configurations, you must complete the following procedure *after* the upgrade.

① *Modifications can, among other items, include changing of the license server location and modifying time-out settings.*

► To retain modifications made to config.txt

1. Complete the upgrade to TSS 15.x.
2. On the TSS server system, open the new `config.txt` file located in the `etc` directory of your TSS repository server installation path.
 - Windows - `Install_path\Trillium Software\MBSW\15\etc`
 - UNIX - `/TrilliumSoftware/server/metabase/etc`
3. Open the `config.txt.backup` file for reference and make the modifications you want to retain in the new `config.txt` file.

① *Do not rename the backup file to config.txt. For the TSS repository server to be properly configured, you must make the changes in the new, version 15-compliant config.txt file.*
4. Save and close the `config.txt` file.
5. (Optional) Delete the `config.txt` backup file.
6. Restart the TSS Scheduler service.

Retaining Changes in server.xml Files

The `server.xml` file, installed with the 32-bit Apache Tomcat when you run the TSS v15 server install, is used to specify information such as the Tomcat start and stop ports.

When you install the TSS server, the software automatically installs a new version of the `server.xml` file, overwriting the existing `server.xml` file.

Follow this procedure to retain changes made in the `server.xml` file when upgrading TSS.

① *If you are upgrading from a pre-15.0 version of TSS (for example, v13.5.1 or 14.0), you do not need to follow this procedure.*

► To retain modifications made to server.xml

1. Before you install TSS v15.7, rename the existing `server.xml` file as a backup file (for example, `server.xml.bak`). This backup file will be used for reference.

`server.xml` is located in the following location:

Windows: `C:\Program Files (x86)\Trillium Software\MBSW\15\Apache_Tomcat\conf`

UNIX: `server_install_path/metabase/Apache_Tomcat/conf`

2. Install TSS v15.7. The TSS server will install a new `server.xml` file.
3. Using the `server.xml` backup file for reference, open the new `server.xml` file and add the modifications you want to retain.
4. Save and close the `server.xml` file.
5. (Optional) Delete the backup `server.xml` file.

Configuring Vendor-Supplied ODBC

This appendix guides you through the steps required to set up the vendor-supplied ODBC that connects to a relational database, and includes the following topics:

- [Configuring ODBC Source Connections on page 244](#)
- [Installing TSS Vendor ODBC Adapter on page 246](#)
- [Setting Up Oracle/IBM DB2 Data Source Connections on page 252](#)
- [Troubleshooting Sybase on page 255](#)

Configuring ODBC Source Connections

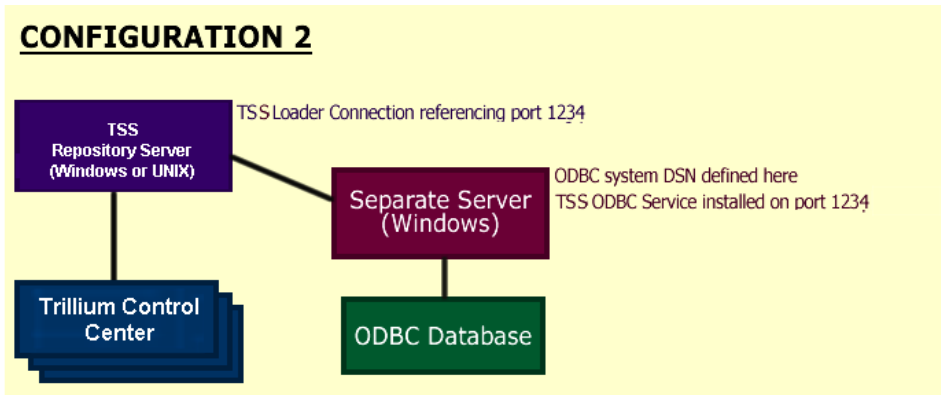
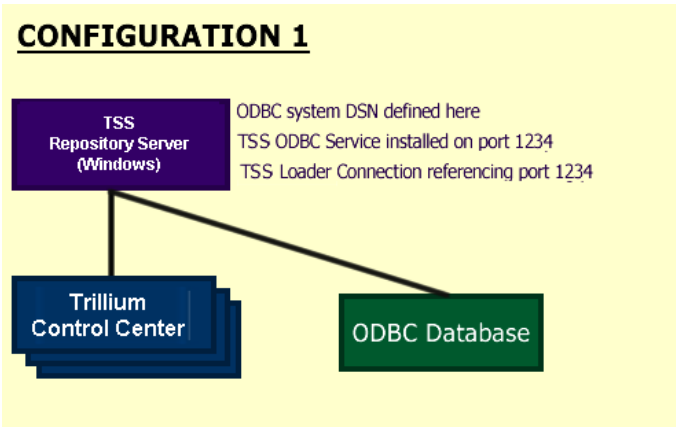
Before you can import data from an ODBC source, complete the following tasks:

- [Determining Configuration](#)
- [Installing TSS Vendor ODBC Adapter](#)
- [Setting Up Oracle/IBM DB2 Data Source Connections](#)

You must also create a TSS data connection to access the ODBC source. For more information about ODBC connections, see the *TSS Repository Administrator's Guide*.

Determining Configuration

To import data from ODBC sources, you must install TSS ODBC support on a Windows Server. TSS ODBC support does not have to reside on the same machine as the TSS server or client. The following figures show two configuration options.

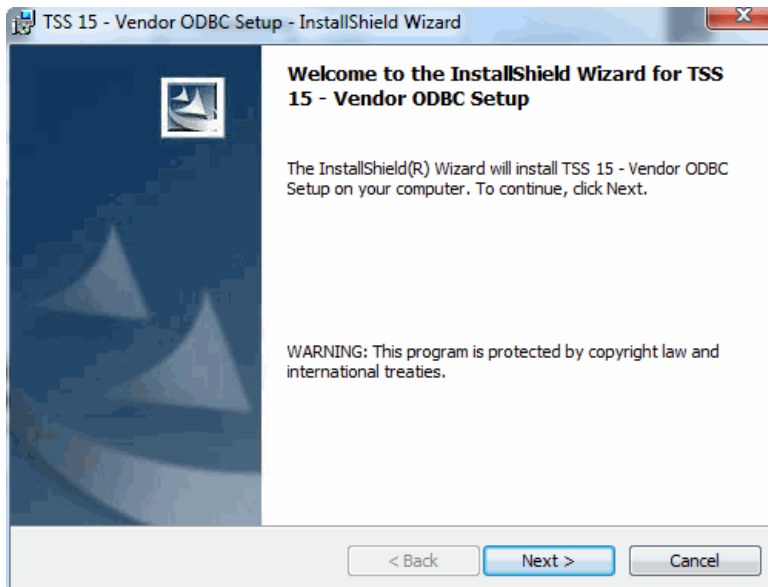


Installing TSS Vendor ODBC Adapter

► To install TSS Vendor ODBC Adapter on a Windows Server

1. Log in to the system where you want to install TSS ODBC Support as the Windows Administrator.
2. Browse to the setup files ([TSS_15_build_Windows_Vendor_ODBC_Adapter.zip](#)) you downloaded from the TSS Download Center (File Portal) FTP website prior to installation and double-click the [setup.exe](#) file.

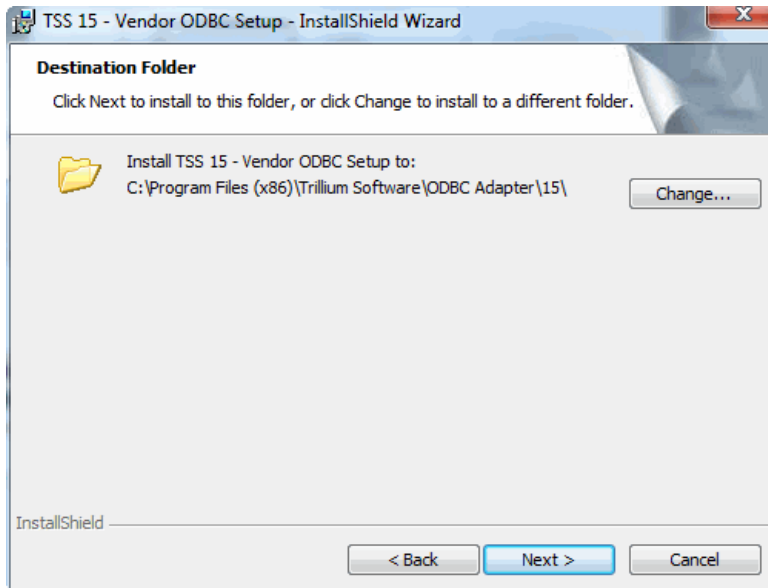
The InstallShield Wizard gathers the required information and opens the Welcome window.



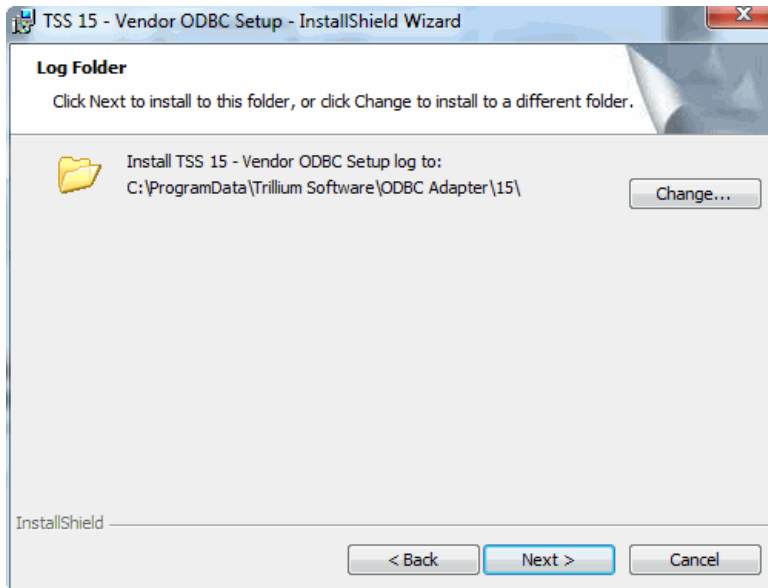
3. Click **Next**. The License Agreement window opens.



4. Read the agreement and if you agree to the terms, select **I accept the terms in the license agreement**.
5. Click **Next**. The Customer Information window opens.
6. Enter User Name and Organization information.
7. Click **Next**. The Destination Folder window opens.

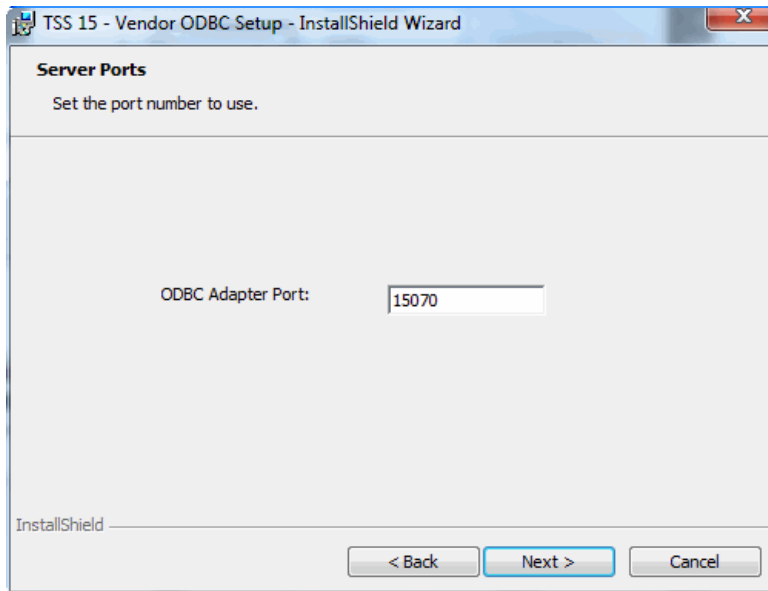


8. Click **Next** to accept the default destination for the TSS ODBC binaries. Alternately, click **Change** to specify a different location, then click **Next**. The Log Folder window opens.



9. Click **Next** to accept the default location for log files. Alternately, click **Change** to specify a different location, then click **Next**. The Server Port window opens.

This port is for the TSS ODBC Service. Note down this number since you will need to supply it when defining the ODBC data connections. This port must not be used by any other service on the machine.



10. In **ODBC Adapter Port**, specify the port number or keep the default value 15070. Then click **Next**. The Ready to Install window opens.
11. Click **Install** to begin the installation. When the installation is complete the InstallShield Wizard Completed window opens.
12. Click **Finish** to close the wizard.
13. Restart the computer for the installation changes to take effect.

If you intend to import data from Oracle or IBM DB2, continue to [Setting Up Oracle/IBM DB2 Data Source Connections on page 252](#).

Create or Validate ODBC System DSN

Verify with the system administrator that the ODBC system DSN for the ODBC source that you will access to import data exists. Depending on your site, you may already have an ODBC system DSN established for the ODBC source. If you do not have a valid ODBC system DSN, create one.

Running the TSS ODBC Component on 64-Bit System

The TSS ODBC component is a 32-bit process. On a 64-bit operating system (for example, Windows Server 2012 x64), DSNs created using the Control Panel ODBC applet apply to 64-bit processes only.

For 32-bit applications to use ODBC on a 64-bit machine, a DSN must be configured using a 32-bit ODBC applet. This can be invoked by running:
`%WINDOWS%\SysWOW64\odbcad32.exe.`

Validate Login Access to the ODBC Source

To import data directly into Trillium Software System from an ODBC source, a TSS user with valid credentials must have login access to the ODBC source.

Working with Excel Spreadsheets

If you want to use an Excel spreadsheet as your ODBC data source, you must:

- Create a Defined Name area for the required data. It is the defined name that appears in the table list when you create an entity.
- Use a system DSN with the Microsoft Excel driver.

► To create a Defined Name area

1. In Excel, open the spreadsheet that contains the data you want to use.
2. Select the required data.
3. From the Insert menu, select **Name > Define**.
4. Enter a name for this data source and click **OK**.

Setting Up Oracle/IBM DB2 Data Source Connections

Make sure that you completed all of these steps:

- Ensure the TSS Repository Server is installed.
- Ensure that the appropriate Oracle/IBM DB2 client is installed on the repository server machine.
- Ensure that you can connect to Oracle/IBM DB2 from an Oracle/IBM DB2 client that is installed on the repository server machine.
- For Oracle, try to connect using the Oracle Network Configuration Assistant, or similar application.
- For IBM DB2, try to connect through Command Center or Control Center, or a similar application.
- For Oracle, find the database name (that TSS accesses for data imports) by checking the name specified in the `tnsnames.ora` file.
- For repository servers installed on UNIX, modify the TSS file `tss_profile` to reflect your site configuration. See the procedure on [To modify the tss_profile file on a UNIX Server on page 253](#).
- If you plan to modify date formats from an Oracle database, modify the `oracleremote.sdf` file.
- Ensure that IBM DB2 and Oracle asynchronous I/O processes have not been removed to increase available memory. This action could result in connectivity failure to these RDBMS applications.
- Ensure that you have login access to your IBM DB2 or Oracle data sources.
- Define an IBM DB2 or Oracle data connection using the Repository Server Manager. (For this procedure, see the *TSS Repository Administrator's Guide*.)
- If you installed Oracle or DB2 clients after the TS repository server installation, reboot the server to set environment variables.

The following steps are only necessary for repository servers on UNIX. If an Oracle/DB2 client is installed on the repository server for Windows, the environment information is automatically located through the system environment variables.

When working with Trillium Software System, **Inetd** accesses `tss_profile` to gather environment information. By making the following changes to the `tss_profile` file, you are ensuring that the Trillium Software System knows how to access Oracle and IBM DB2 databases.

► **To modify the `tss_profile` file on a UNIX Server**

1. Stop the Scheduler.
 - a. Verify that there are no users logged on to TSS.
 - b. Log in to the TSS server as the TSS administrator.
 - c. Change directories to `/<Server Path>/metabase/bin`. When you installed TSS, you were asked Where would you like to install the TSS 15 Repository Server? This is the directory represented by `<Server Path>`.
 - d. Type the command:

```
./scheduler -stop
```

2. Change to the `/<Server Path>/etc` directory.
3. Locate the file named `tss_profile` and open it for editing.
4. Add an entry to the file based on the following table:

Relational Database	Add
Oracle	the entry: <code>export ORACLE_HOME=<path to Oracle client></code>
IBM DB2	an entry to run the <code>db2profile</code> script that is supplied with IBM DB2. Start the line in the script with a <code>."</code> to ensure the environment gets updated. For example: <code>./home/db2inst/sqllib/db2profile</code>

5. You may be able to copy the required Oracle and IBM DB2 information from the file named `.profile` which is in the home directory of the user who installed Trillium Software System.

-
- If you are connecting to an Oracle database, set the library path variable to the location of the Oracle 32-bit libraries. The path name varies, depending on UNIX platform:

Platform	Library Path Setting
AIX	LIBPATH
Solaris	LD_LIBRARY_PATH
Linux	LD_LIBRARY_PATH

- Verify that the path is exported.
- Save and close the file.
- Restart the Scheduler.
 - Make sure that you are logged on to the repository server as the TSS application administrator.
 - Make sure that you are in the directory:

`<Server Path>/metabase/bin`

i *For example, if the repository server path is /TrilliumSoftware/server, then you would change directories to /TrilliumSoftware/server/metabase/bin.*

► To enable modified date formats from Oracle databases

- Open the file `oracleremote.sdf` for editing. This file is located in the repository server's `/etc` directory (for example, `<install path>/MBSW/15/etc`).
- Add the following environment variables to the file:
NLS_LANG
NLS_DATE_FORMAT

For example:

```
set env(NLS_DATE_FORMAT) YYYYMMDD
```

i *Valid values for these variables are defined by Oracle. For more information, check with your Oracle system administrator.*

Both variables are required for UNIX. Only the NLS_DATE_FORMAT variable is required for Windows installations; the NLS_LANG variable is set in the registry automatically.

3. Save and close the file.

Validate Access to the Relational Source

To import data into Trillium Software System directly from IBM DB2 or Oracle, a TSS user must have login access to IBM DB2 or Oracle. Ensure that you have a valid RDBMS user name and password.

Troubleshooting Sybase

If you receive the following error when trying to load data from a Sybase source: `Remote command failed, [DataDirect][ODBC Sybase Wire Protocol driver][SQL Server]Incorrect syntax near x`, make sure that the Sybase ASE ODBC Driver configuration settings (Advanced tab) has the option **Enable Quoted Identifiers** selected.

APPENDIX F

Installing the SAP Add-On and Support Packages

This appendix describes installation of the SAP Add-On and installation of the SAP Add-On support packages, and includes pre-installation and post-installation checklists.

For SAP component installation instructions, see [“Installing EDQ” on page 127](#).

Pre-Installation Checklist

Before installing the SAP Add-On, review the following checklist. After installation, review the post-installation checklist provided on [page 323](#).

- Are there Business Add-Ins (BADIs) already installed that utilize the ADDRESS_CHECK and ADDRESS_SEARCH functions, for example, IS-Media?

► **To verify whether there are existing BADIs**

1. Using Transaction **SE19**, bring up the Search option and enter ADDRESS_CHECK or ADDRESS_SEARCH in the Definition name box, then run the search.

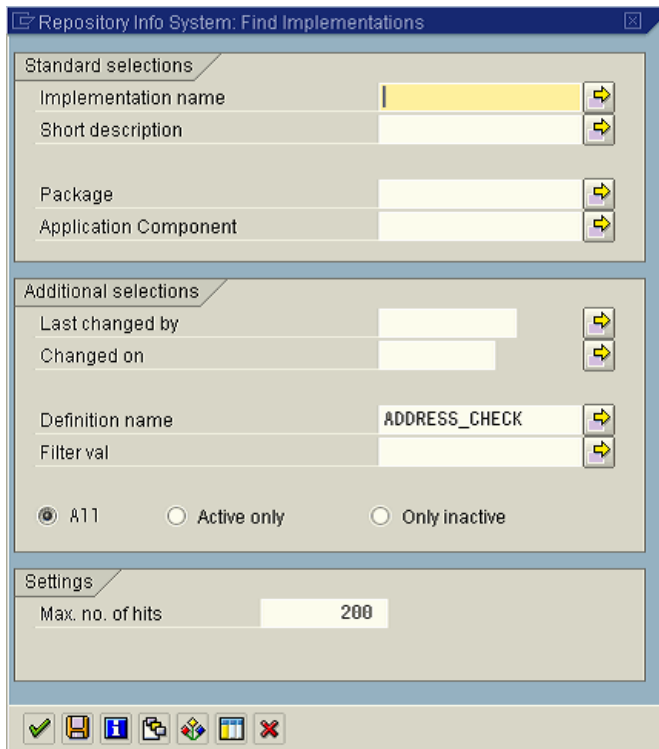


Figure F-1 Transaction SE19 Implementation Search Option

A list of objects implemented against the definition name ADDRESS_CHECK or ADDRESS_SEARCH will display.

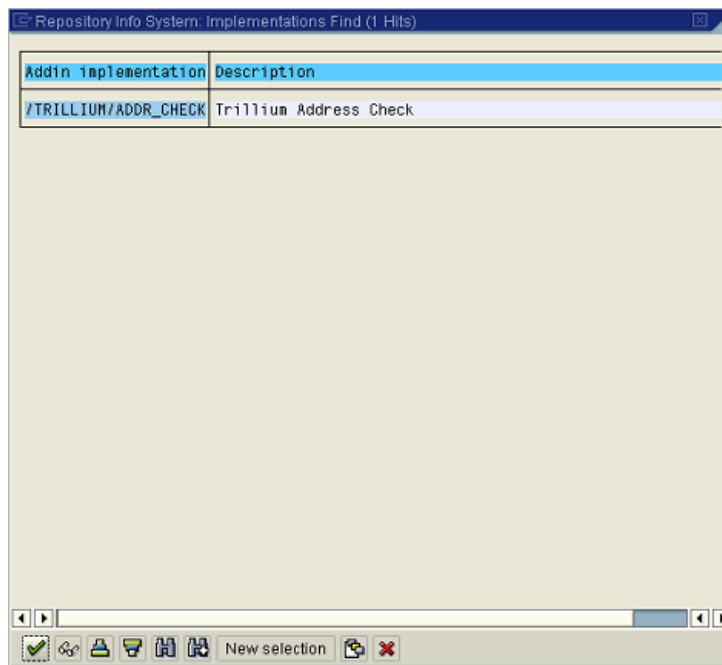


Figure F-2 Transaction SE19 List of Implementations

2. If there are BADIs already installed, contact Trillium Software Customer Support. If the list is empty, continue with the pre-installation checklist.
 - Are you planning to install the Trillium SAP Add-On on both R/3 and CRM (to be able to configure so that both systems can process from one instance of TS Quality)?
 - In which instance will the Add-On be initially installed?
 - Development
 - QA
 - Sandbox
 - Production (not a typical option)
 - Do you have access to the SAP administrative level (Client 000) so you can install the Add-On?

- Do you have access to the SAP customizing client level (Client 0xx) to activate BC-SET and configuration?

Supported SAP Versions

The SAP Add-On packages require one of the SAP versions identified in Table F-1. ***If the Support Package is not up to the required number, the prerequisite OSS Notes must be applied prior to the TS Quality Connector SAP Add-On installation.***

Table F-1 Supported SAP Versions

Component Version	Basis	Enhancement Packages
ERP 6.0	7.xx	Ehp1 - Ehp8
CRM 5.0	7.xx	
CRM 2007 (6.0)	7.xx	
CRM 7.0	7.xx	Ehp1 - Ehp4

Installing the SAP Add-On

The SAP Add-On is delivered as a set of standard SAP archive files according to the Basis or CRM versions, as described in Table F-2. If you have not yet done so, download the archives files from the TSS Download Center (File Portal) FTP website.

Table F-2 SAP Add-On Delivered SAR Files by Basis

Directory	File names	File description
SAP700 (ERP 6.0 and CRM 5.0)	EX854700.SAR IN854700.SAR UP854700.SAR SP01854700.SAR	Upgrade from previous SAP application version Initial Add-On installation Upgrade to existing Add-On version 8.4 or lower Support package 01 for Add-On version 8.5.
CRM600	EX856700.SAR IN856700.SAR UP856700.SAR SP01856700.SAR	Upgrade from previous SAP application version Initial Add-On installation Upgrade to existing Add-On version 8.4 or lower Support package 01 for Add-On version 8.5.
CRM700	EX857701.SAR IN857701.SAR UP857701.SAR SP01857701.SAR	Upgrade from previous SAP application version Initial Add-On installation Upgrade to existing Add-On version 8.4 or lower Support package 01 for Add-On version 8.5.
CRM701 (Ehp1)	EX858702.SAR IN858702.SAR UP858702.SAR SP01858702.SAR	Upgrade from previous SAP application version Initial Add-On installation Upgrade to existing Add-On version 8.4 or lower Support package 01 for Add-On version 8.5.
CRM702 (Ehp 2)	EX859731.SAR IN859731.SAR UP859731.SAR SP01859731.SAR	Upgrade from previous SAP application version Initial Add-On installation Upgrade to existing Add-On version 8.4 or lower Support package 01 for Add-On version 8.5.
CRM703 (Ehp3)	EX85A740.SAR IN85A740.SAR UP85A740.SAR SP0185A740.SAR	Upgrade from previous SAP application version Initial Add-On installation Upgrade to existing Add-On version 8.4 or lower Support package 01 for Add-On version 8.5.
CRM704 (Ehp4)	EX85B750.SAR IN85B750.SAR UP85B750.SAR	Upgrade from previous SAP application version Initial Add-On installation Upgrade to existing Add-On version 8.4 or lower

- ① *The Upgrade to version 8.5 should only be installed if you are upgrading from version 8.4 or lower.*

The Support Package for the Initial Add-On and the Upgrade Add-On should be installed after the Initial Add-On or the Upgrade has been installed. The support package names are SP01YYYYZZZ.SAR, where

01 = Support Package number, YYY = TS Quality version, and ZZZ is the SAP Basis version, for example SP01854700.SAR.

The SAP Add-On is installed into the existing SAP repository using the SAP Add-On installation tool. Generally, TS Connector for SAP Add-On loading and activation is the same for SAP ERP 6.0 and CRM, however the instructions are presented in two separate sections:

- [“Installing the SAP Add-On for SAP ERP 6.0” on page 261](#)
- [“Installing the SAP Add-On for SAP CRM” on page 284](#)

Each section contains instructions for the initial installation, upgrade installation, and support packages installation.

Installing the SAP Add-On for SAP ERP 6.0

This section describes the installation process for the Initial, Upgrade and Support Packages for the SAP Add-On for SAP ERP 6.0.

Initial and Upgrade SAP Add-On Installation

The Initial and the Upgrade Add-On use the same installation procedure. They are loaded via the transaction **/nSAINT** (SAP Add-On Installation Tool).

► To install the Connector for SAP Add-On

1. Log into the SAP system, **client 000** (zero-zero-zero), as a user that has the **SAP_ALL** profile.

2. Invoke the SAP Add-On Installation tool by running transaction **/nSAINT** and click **Start** to begin the loading process.

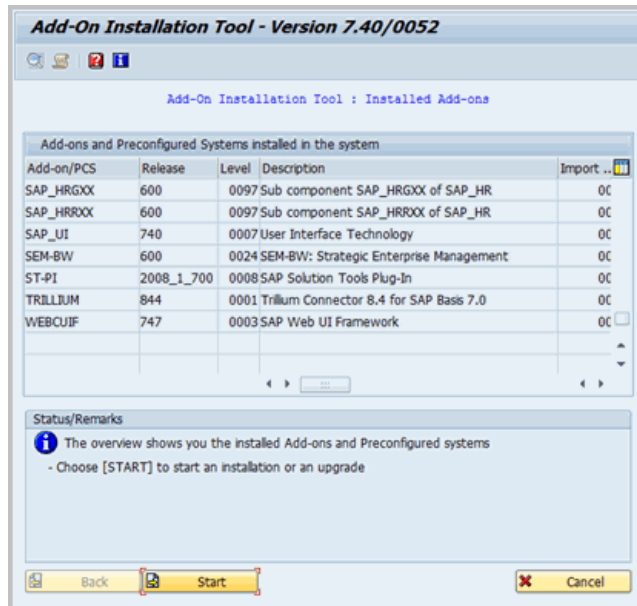


Figure F-3 Add-On Installation Tool

4. In the **Look in** text box, browse to **[CDDRIVE:]\Trillium Software\TSQuality\15\SAPxxx\IN85nXXX.SAR** (or **UP85nXXX.SAR** when installing the upgrade) where:
 - **[CDDRIVE:]** is the drive letter of the drive that contains the SAP Addendum installation software
 - **xxx** is the version of the SAP system, for example 700
 - **n** is the number assigned against the SAP version, for example 4 is assigned against 700
 - **XXX** is the SAP Basis version
5. Click **Open**.

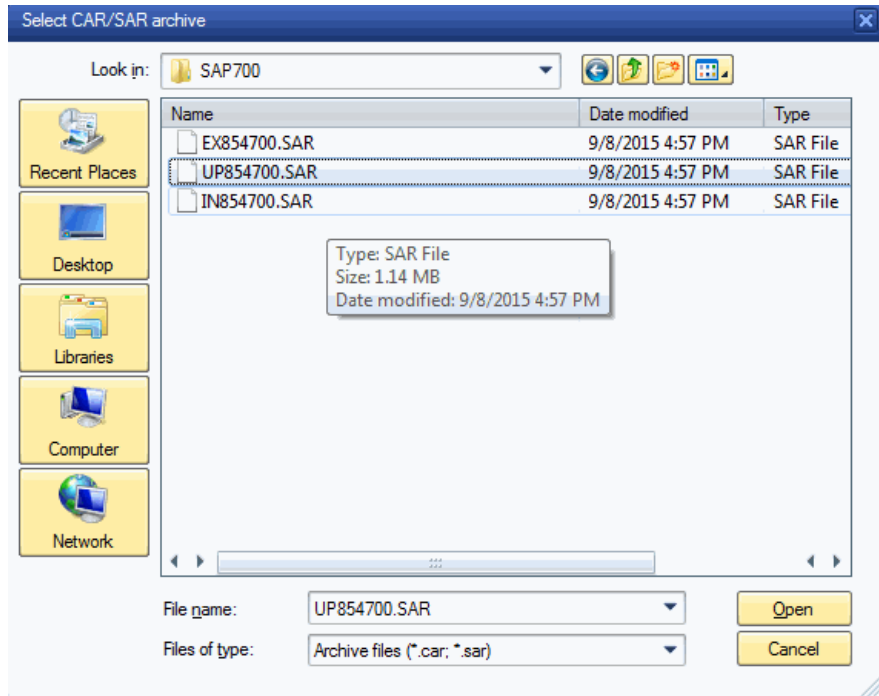


Figure F-5 The Select CAR/SAR Archive Browser Window

- The **Decompress Tool** screen opens. Click **Decompress**.

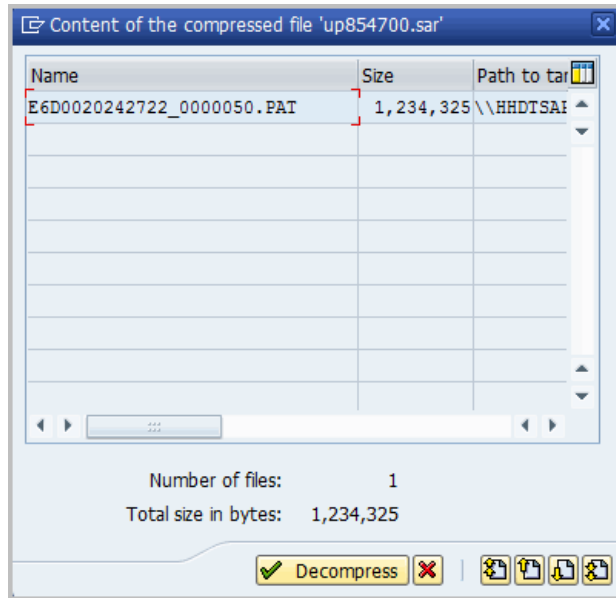


Figure F-6 Decompress Tool

7. On the **Add-On selection** screen, select the **TRILLIUM add-on** and click **Continue**.

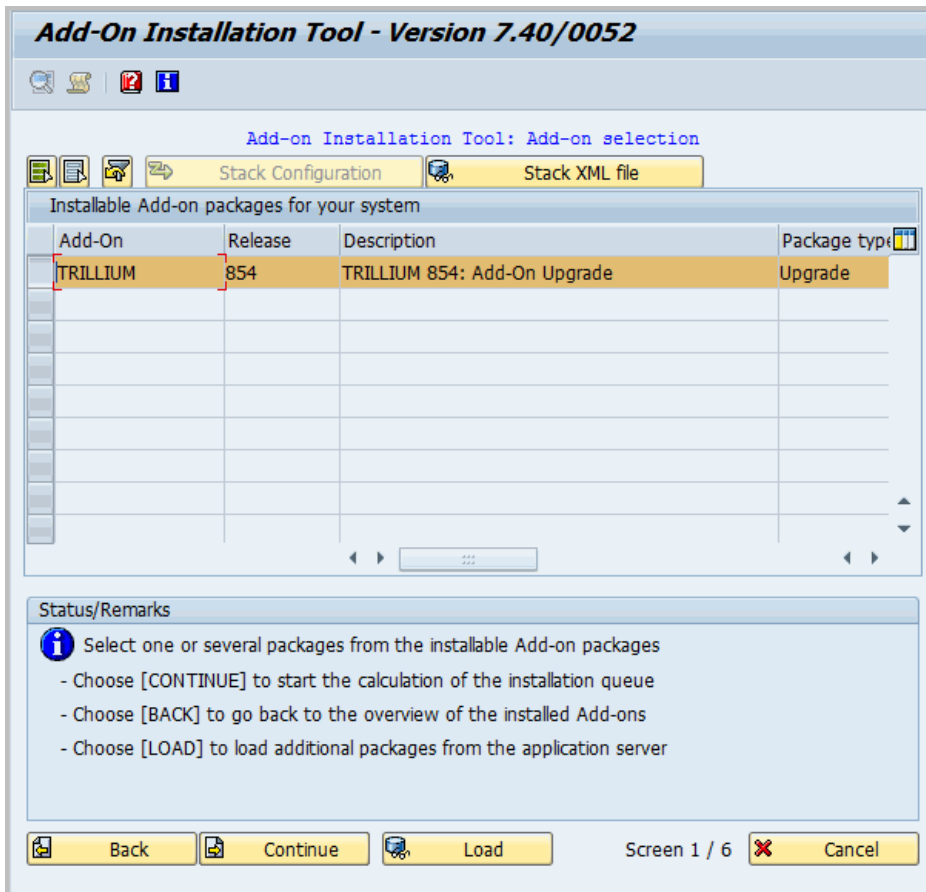


Figure F-7 Add-On Installation Tool Selection Screen

- On the Support Package Selection screen, click **Continue**.

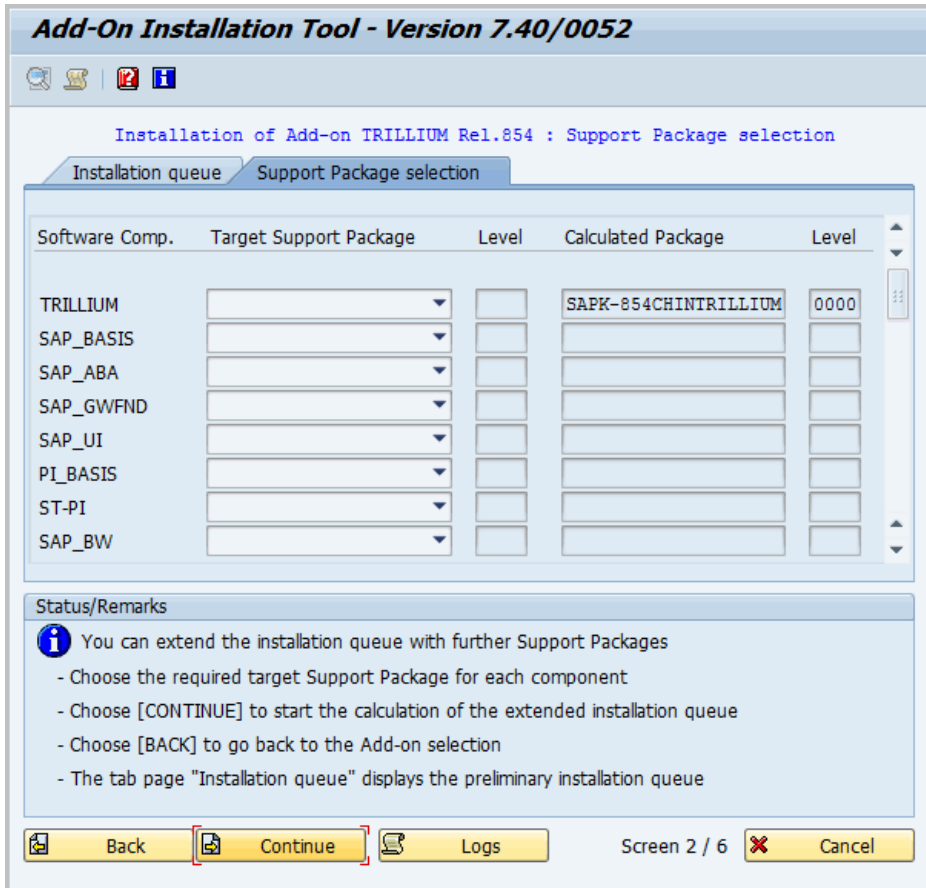


Figure F-8 Support Package Selection

9. On the **Installation Queue** screen, click **Continue**.

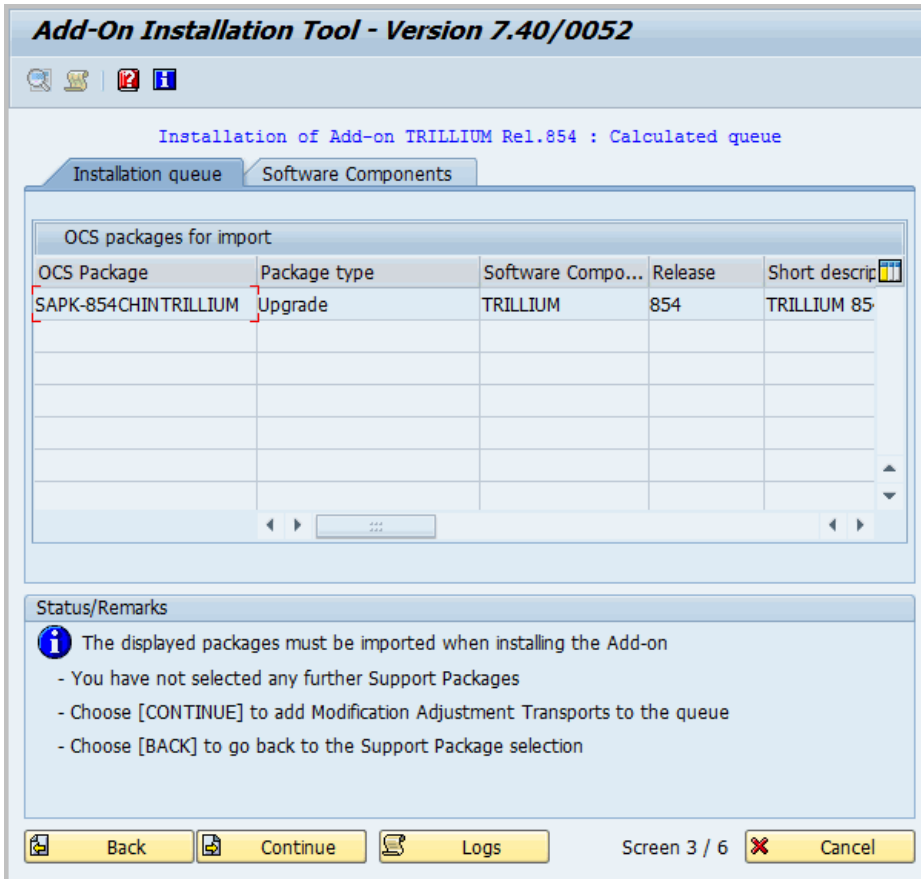


Figure F-9 Installation Queue

- When prompted to add Modification Adjustment Transports to the queue, click **No**.

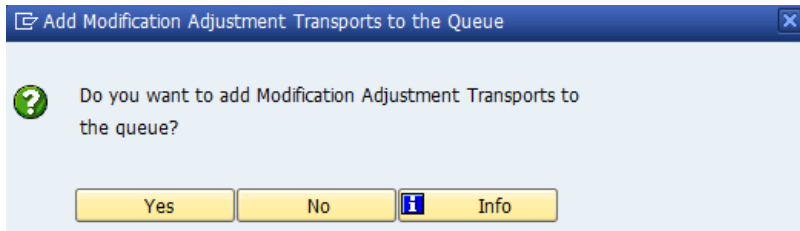



Figure F-10 Do Not Add to the Queue

- A confirmation of import is requested. Click the **check mark**  button to begin importing the Add-On.

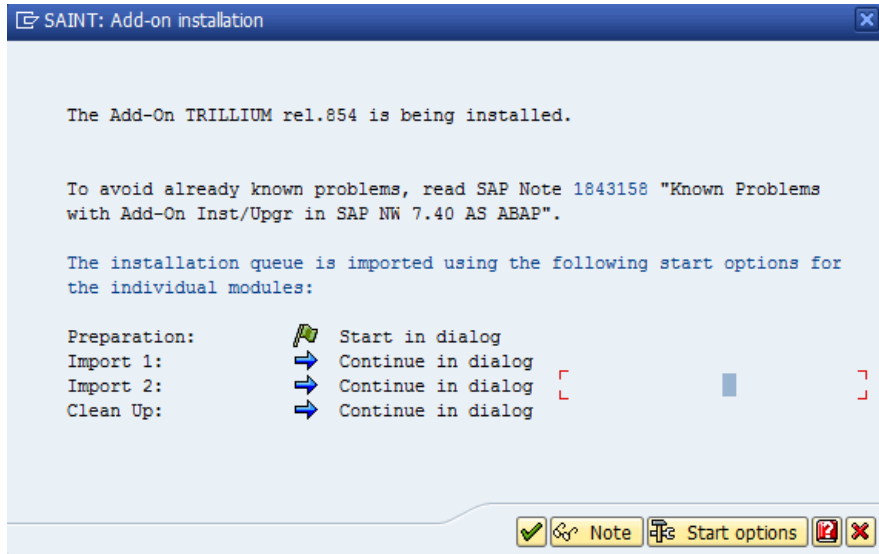


Figure F-11 Confirmation Request Screen for the Add-On Installation

- During the import of the TS Connector for SAP Add-On, the **Import status** should display the following message:
"The add-on will now be imported with the displayed queue."

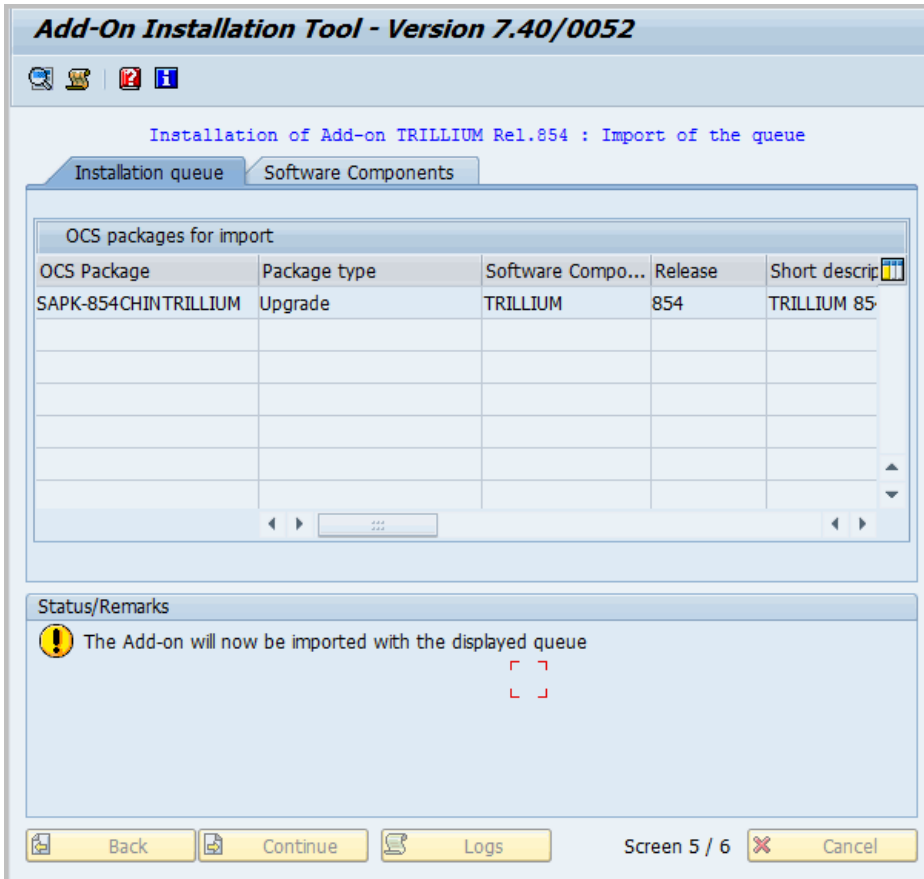


Figure F-12 Add-On Import Queue Status

- When the import of the Add-On is complete, a success message is displayed. Click **Logs** to check the logs for possible errors.

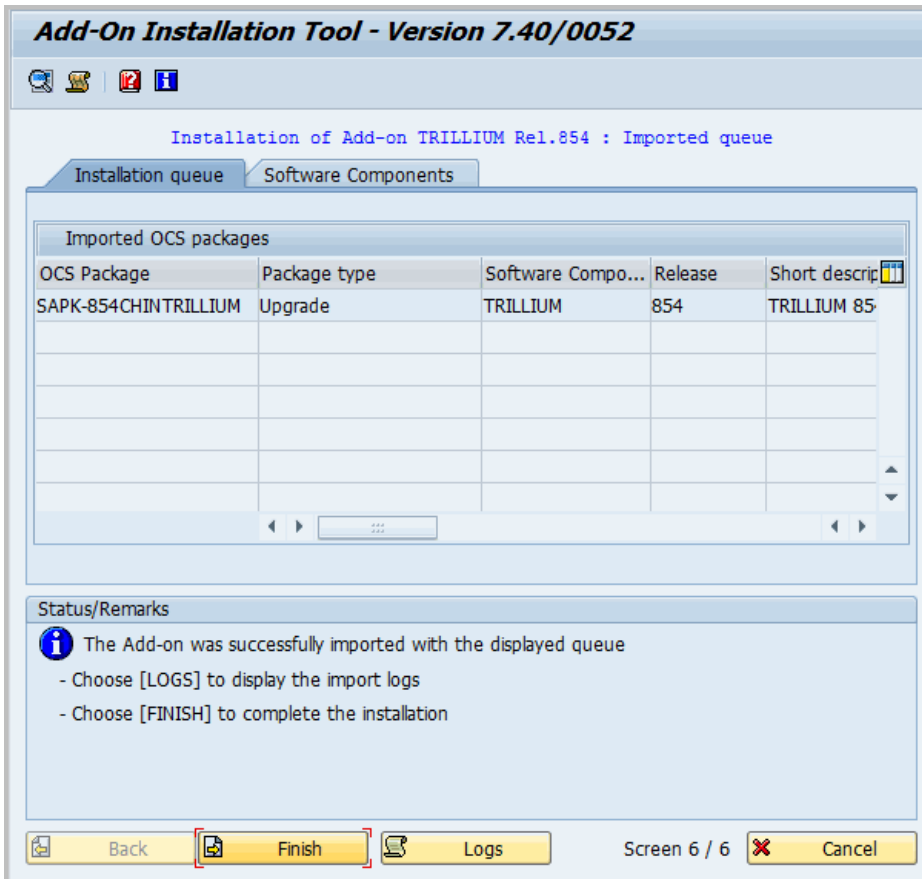


Figure F-13 Success Message, Click Logs

14. The log overview window opens. If any unexplainable errors are found in the log, contact the Trillium Software Customer Support Help Desk.

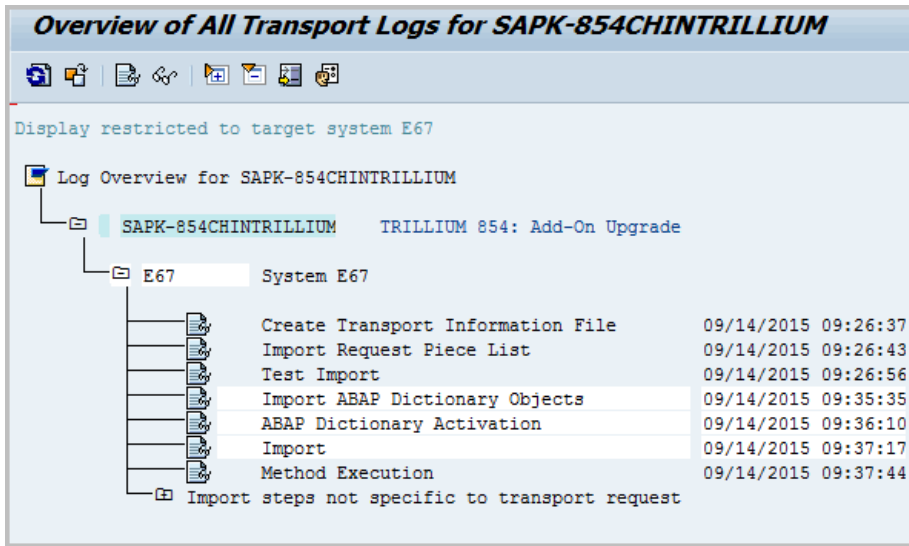


Figure F-14 Log Report

15. Click **Back** to return to the Installation of Add-On screen and click **Finish** to complete the installation.

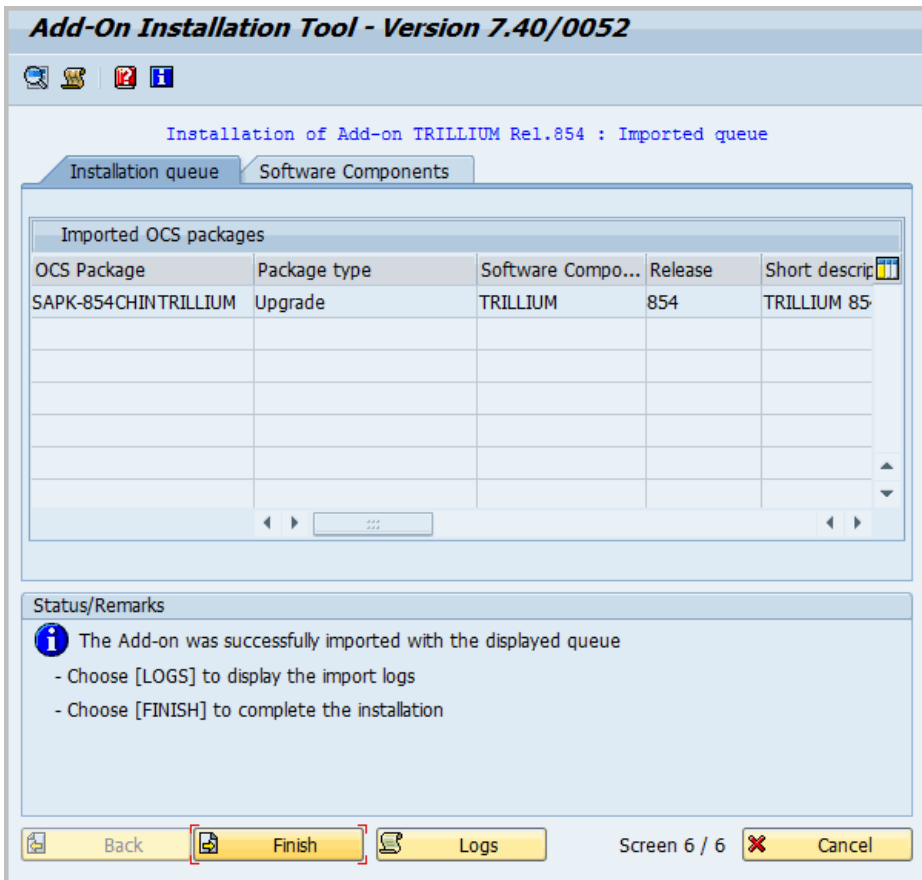


Figure F-15 Completing Installation

16. The Installed Add-Ons window opens. Click **Cancel** to return to the SAP main menu.

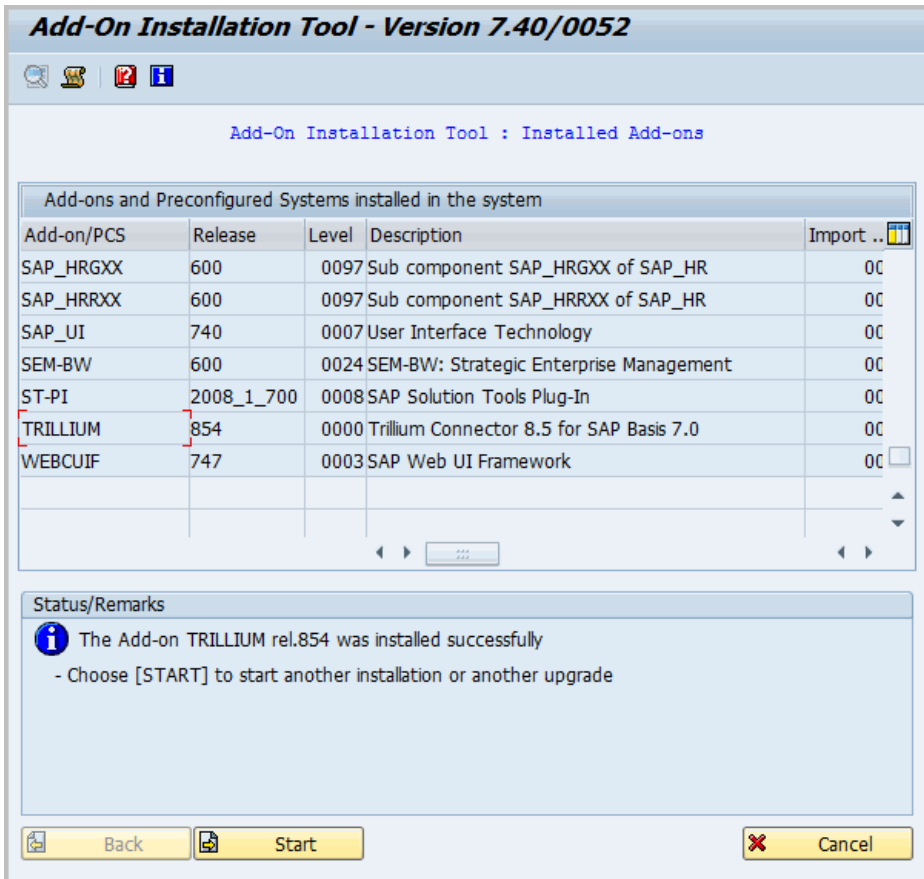


Figure F-16 Installed Add-Ons Window

SAP Add-On Support Package Installation (ERP)

Trillium Software periodically delivers support packages. To install a TS Connector for SAP Add-On support package, use the following procedure.

► To install a TS Connector for SAP Add-On Support Package

1. Log in to your SAP system in **Client 000** (zero-zero-zero) as a user who has the **SAP_ALL** profile.
2. Invoke the SAP Support Package Installation Tool by running transaction **/nSPAM**. The Support Package Manager initial screen opens.

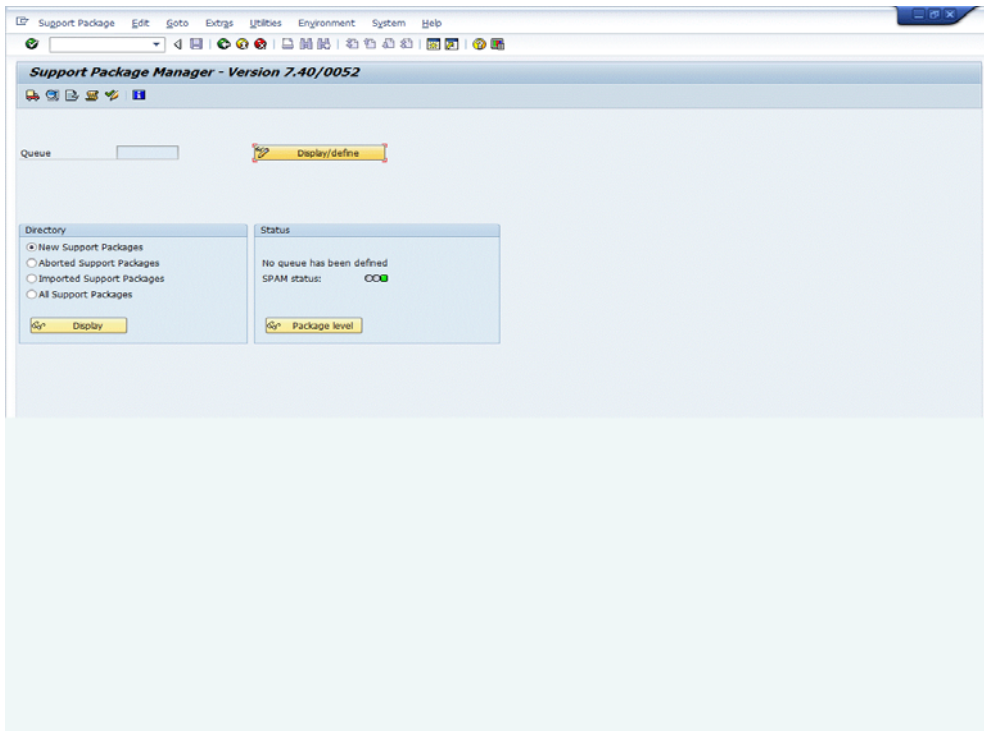


Figure F-17 Support Package Manager Initial Screen

3. From the menu bar of the Support Package Installation Tool screen, select **Support Packages > Load Package > From frontend**.

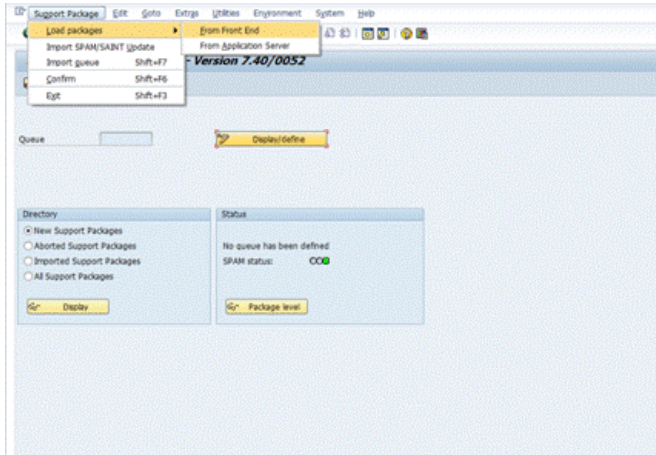


Figure F-18 Load Package From Frontend

4. Browse to the support package location and click **Open**.

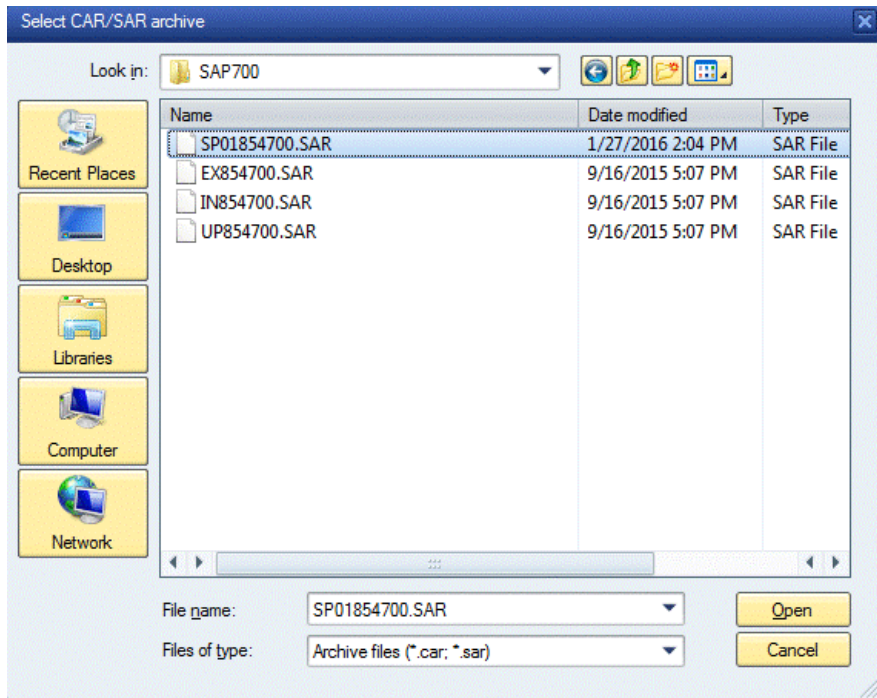


Figure F-19 Browse and Open

5. The **Decompress Tool** screen opens. Click the **Decompress** button.

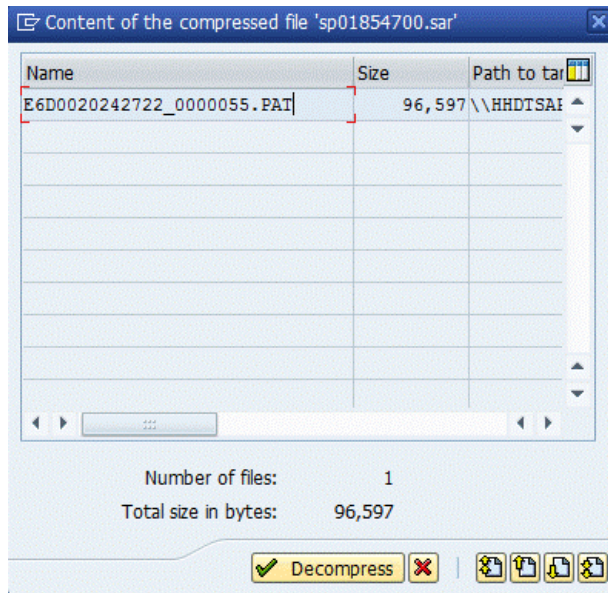


Figure F-20 Select Support Package

6. Click **Display/Define**.

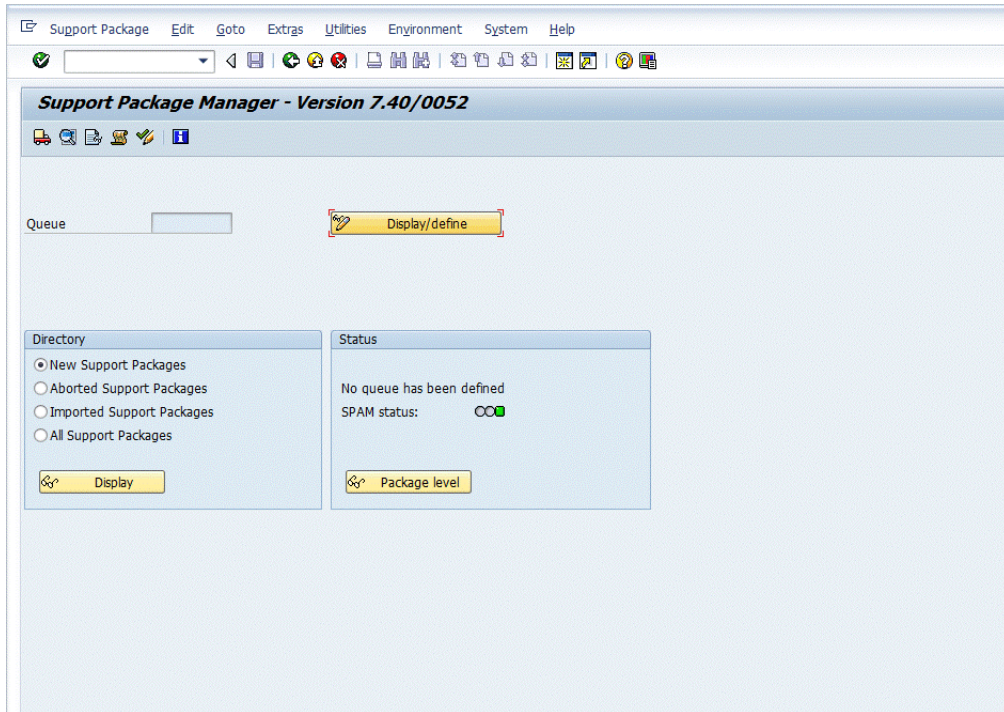



Figure F-21 Display/Define

7. Select the **TRILLIUM** component to import the support package and click the **check mark**  button.

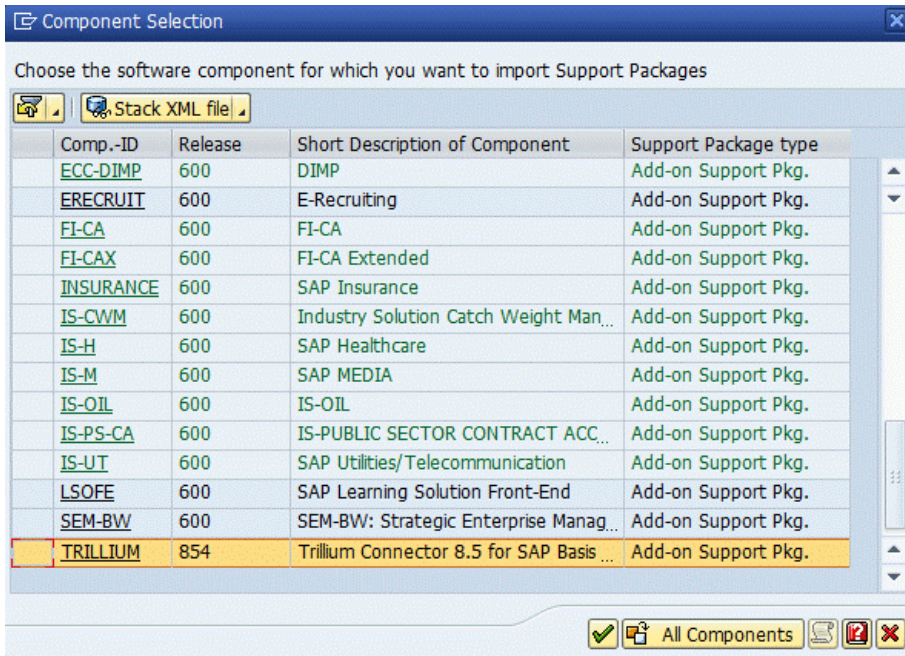


Figure F-22 Select Trillium Component

8. Select the support package and click the **check mark**  button.

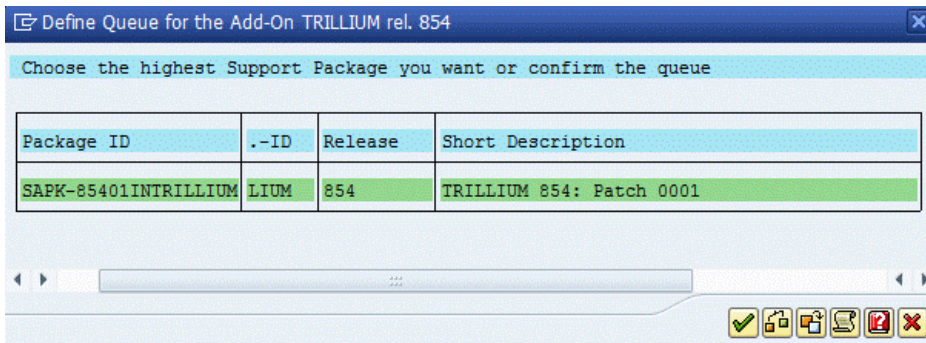


Figure F-23 Select Support Package

9. When prompted to add Modification Adjustment Transports, click **No**.

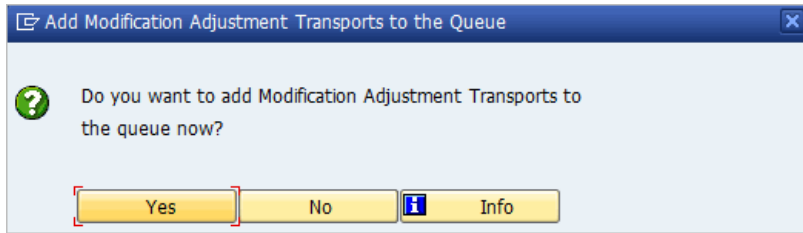


Figure F-24 Do Not Add Modification Adjustment Transports

10. Select **Support Package > Import Queue** to import the selected package.

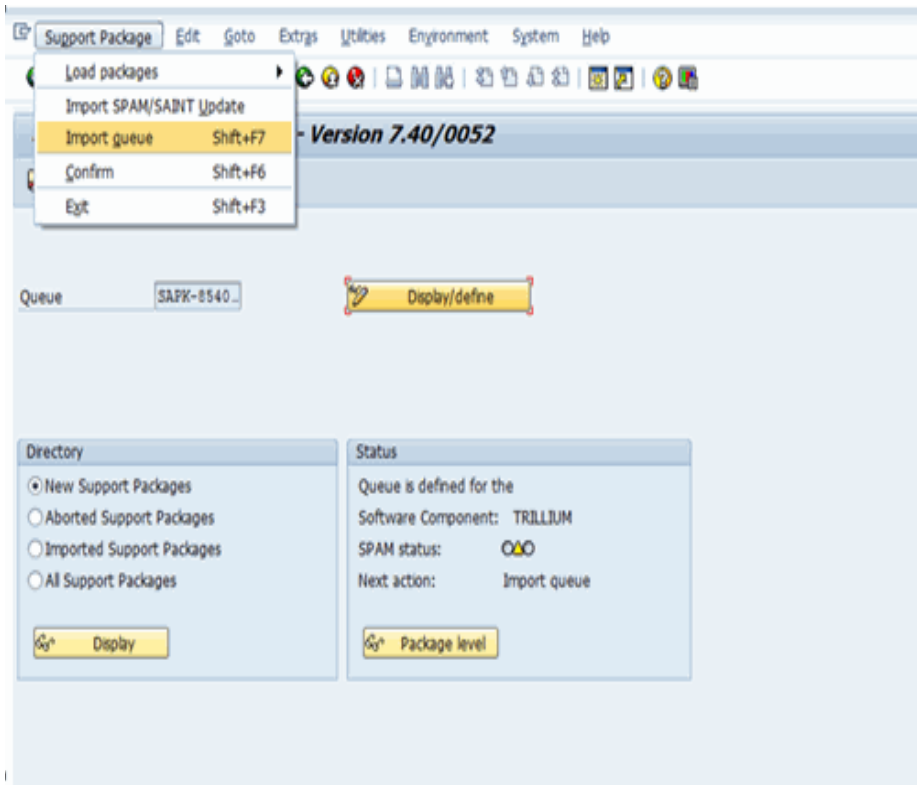



Figure F-25 Support Package Import Queue Initiating Screen

11. A SPAM Import Queue confirmation pop-up opens. Click the **check mark**  button to continue.

 *Allow some time for the import and activation to take place.*

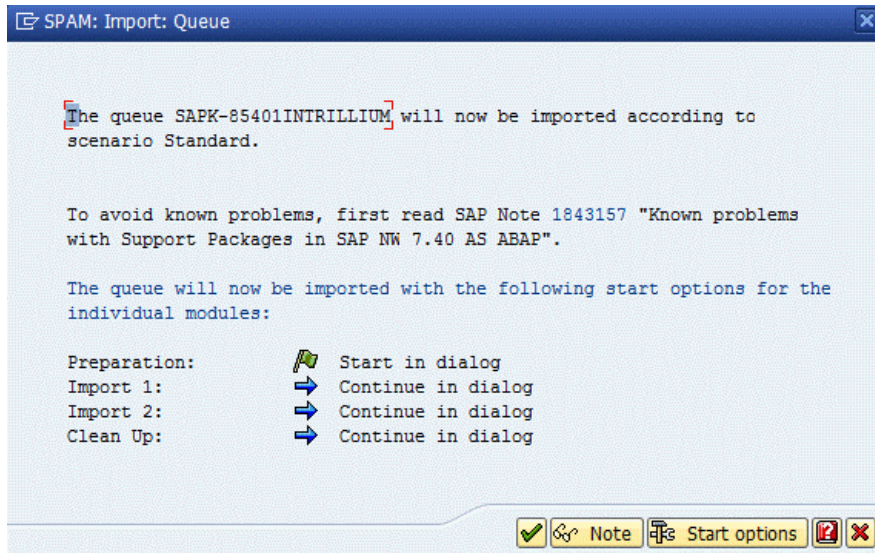


Figure F-26 SPAM Import Queue Confirmation


12. After the import and activation is completed, a confirmation of successful installation will display. Click the **check mark**  button to finish the process.



Figure F-27 Successful Support Package Import Information

13. Select **Support Package > Confirm** to complete the process.

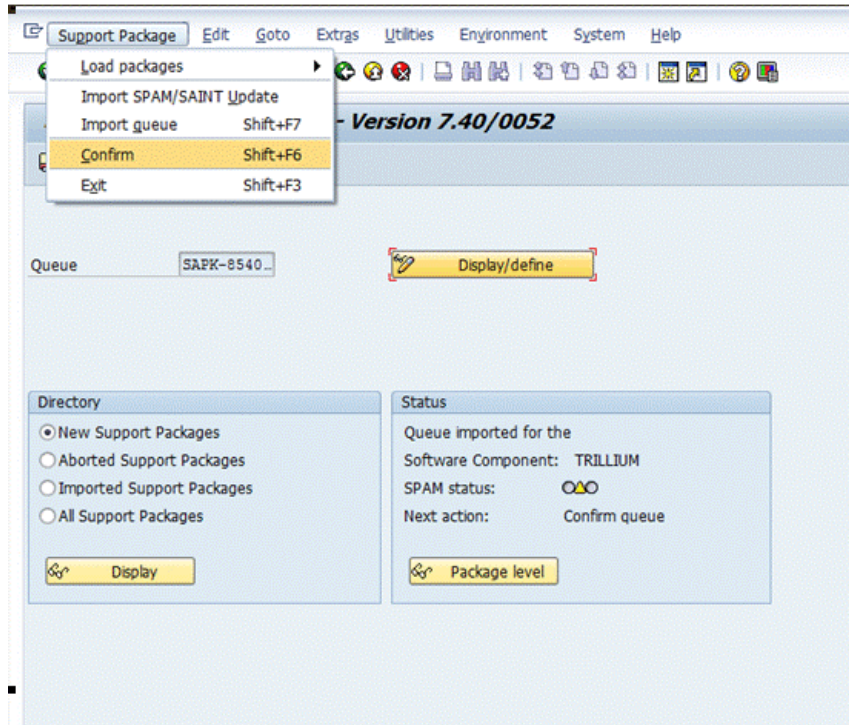


Figure F-28 Confirm to Complete Process

14. The message **Support Package queue was confirmed** will display near the bottom of the screen.

Installing the SAP Add-On for SAP CRM

This section describes the installation process for the Initial, Upgrade and Support Packages for the SAP Add-On for SAP CRM.

Initial and Upgrade SAP Add-On Installation

The Initial and the Upgrade Add-On use the same installation procedure. They are loaded via the transaction **/nSAINT** (SAP Add-On Installation Tool).

① *If you are performing an upgrade, ensure that you have a previous version of the Trillium v14 Add-on installed.*

► **To install the Connector for SAP Add-On**

1. Log into the SAP system, **client 000** (zero-zero-zero), as a user that has the **SAP_ALL** profile.

3. On the **Add-On Installation Tool** menu, select **Installation Package > Load Package > From frontend**. The **Select CAR/SAR Archive** dialog box opens.

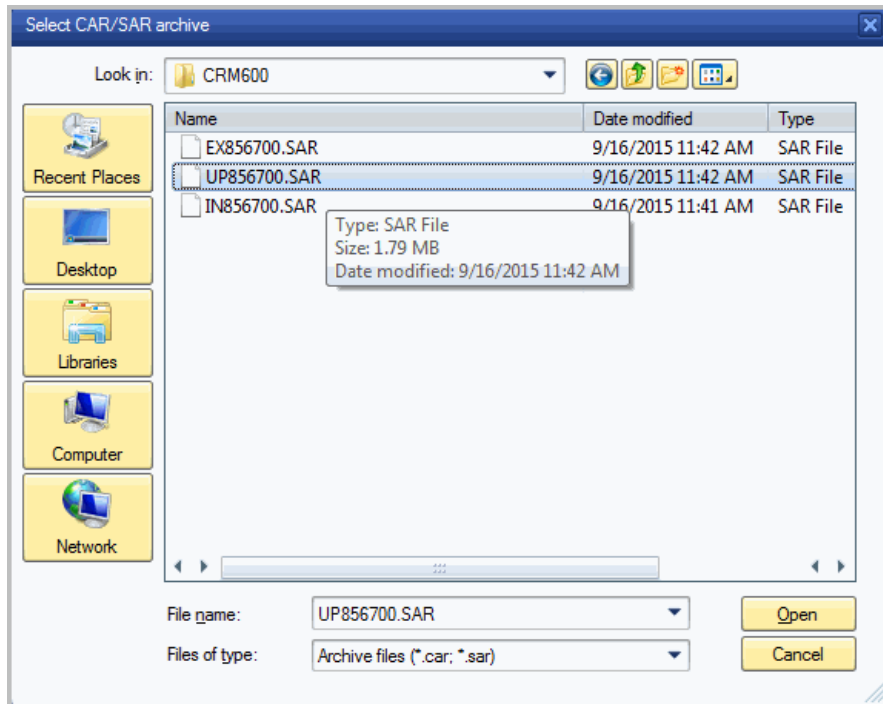


Figure F-30 Add-on Installation Tool

4. Browse to **[CDDRIVE:]\Trillium Software\TSQuality\15\CRMxxx\IN85nXXX.SAR** (or **UP85nXXX.SAR** if upgrading) where:
 - **[CDDRIVE:]** is the drive letter of the drive that contains the SAP Addendum installation software
 - **xxx** is the version of the CRM system
 - **n** is the number assigned against the CRM version, for example 6 is assigned against CRM600
 - **XXX** is the SAP Basis version
5. Click **Open**.

- The **Decompress Tool** screen opens. Click **Decompress**.

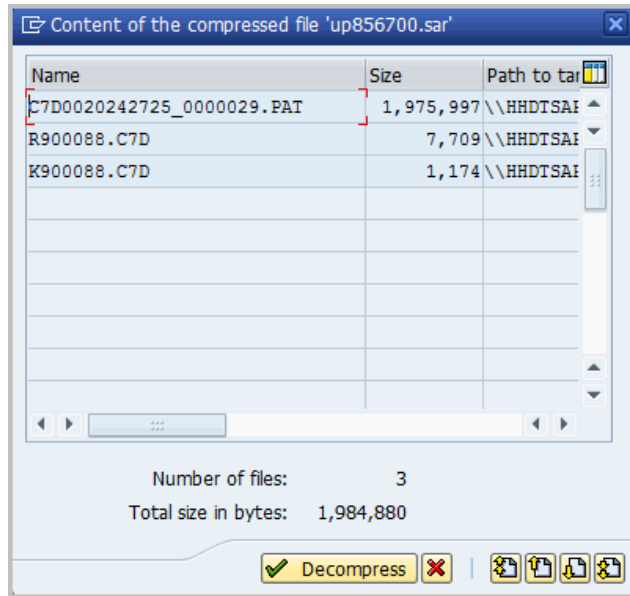


Figure F-31 Decompress Tool

7. On the **Add-On selection** screen, select the **TRILLIUM add-on** from the selection box.

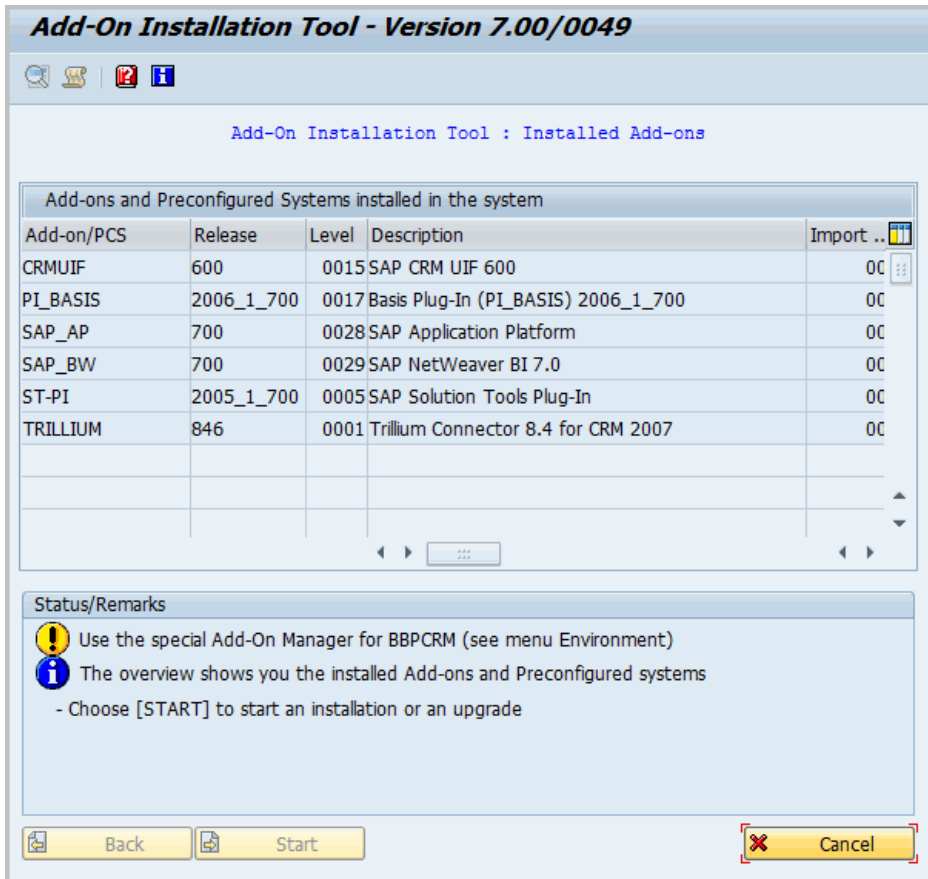


Figure F-32 Add-On Installation Tool

8. From the Environment menu select **Add-on Manager for EBP/CRM**.

9. On the CRM Add-On Manager screen, click **Continue**.

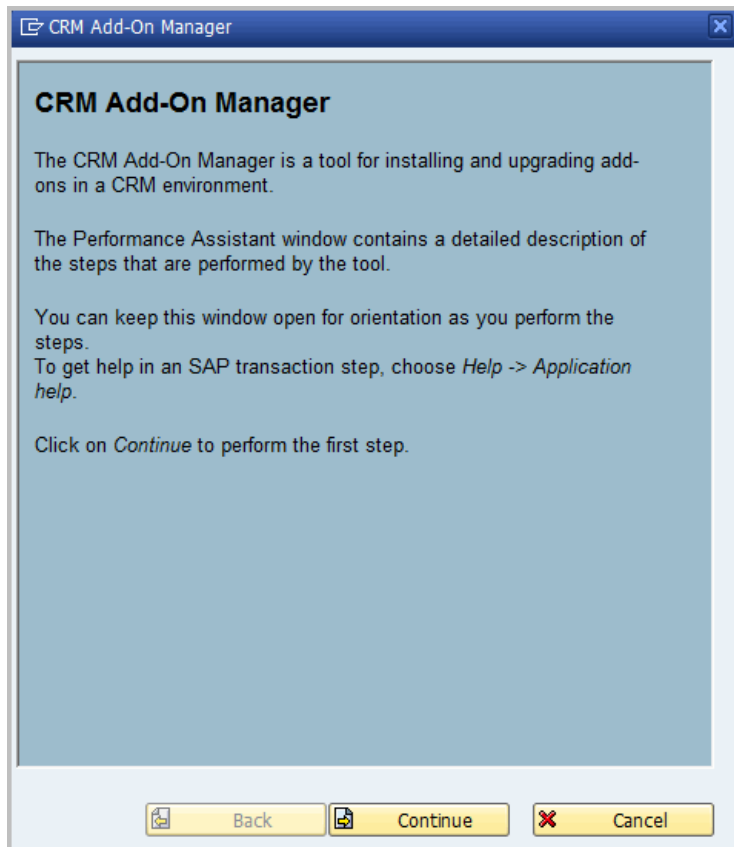


Figure F-33 CRM Add-On Manager Steps Information

10. On the next screen, select the **Trillium Add-on Package**, then click **Continue**.

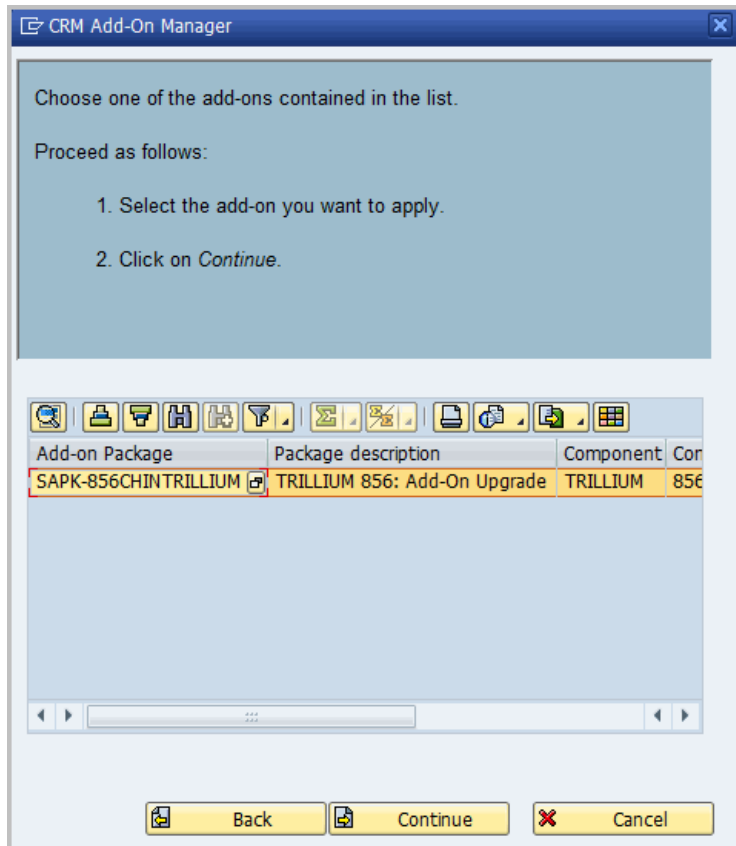


Figure F-34 CRM Add-On Manager Package Selection

11. To lock CRM online users while the package is applied, click **Confirm** and then click **Continue**.



Figure F-35 Lock CRM Online Users

12. To confirm that users have been notified of the logoff, click **Confirm** then click **Continue**.

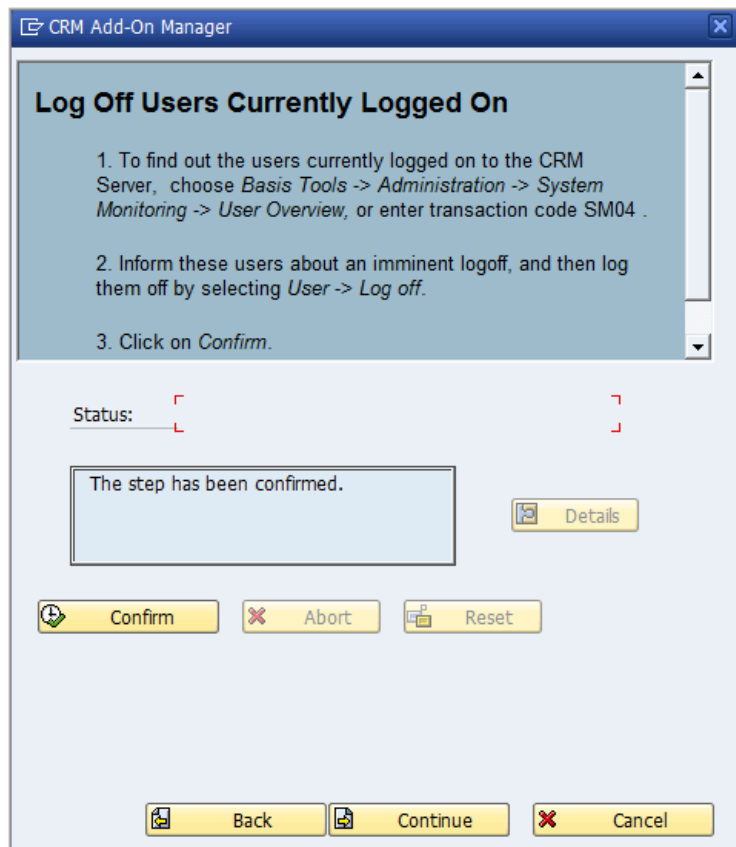


Figure F-36 Notify Users

13. Ensure that all messages are processed. click **Execute**; on the next window click **Back** and then click **Continue**.

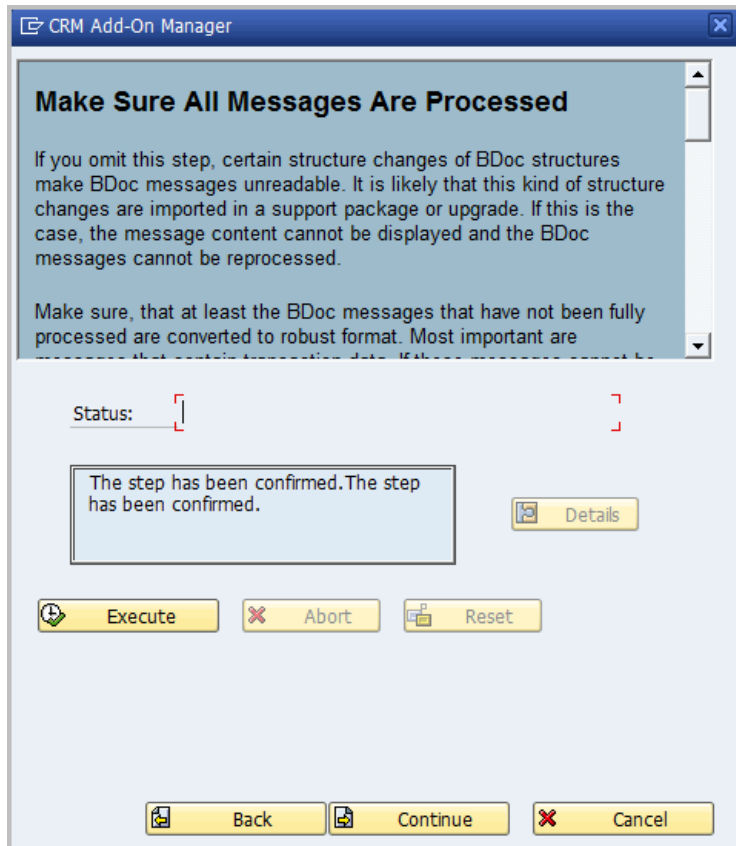



Figure F-37 Messages Processed

14. A confirmation of import is requested. Click the **check mark**  button to begin importing the Add-On.

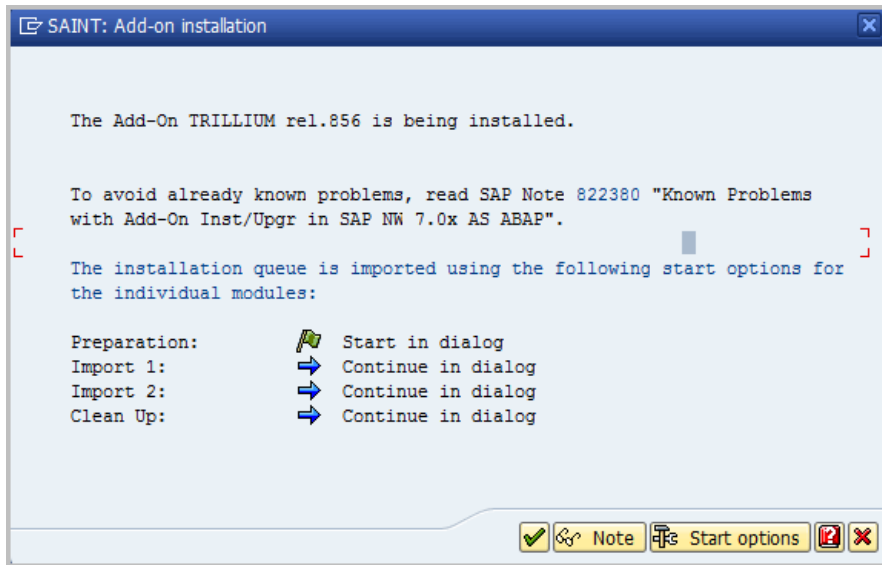



Figure F-38 Confirmation Request Screen for the Add-On Installation

15. A message reports that the Add-on will be imported. Information messages will display; click the **check mark**  button to continue.

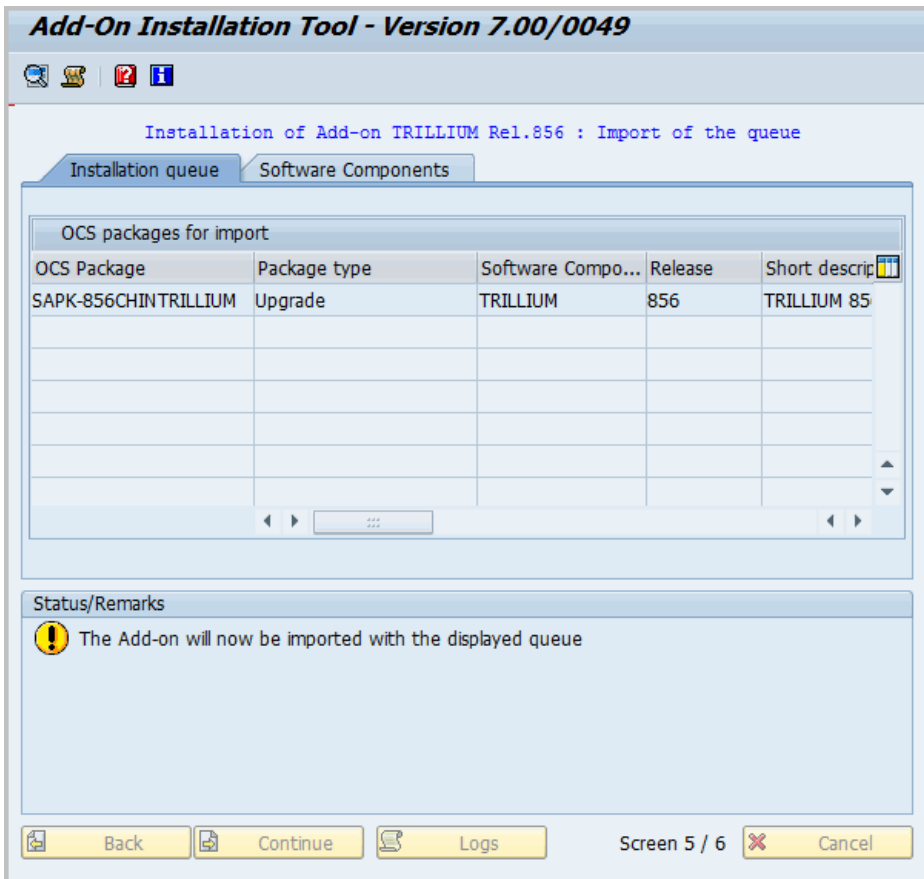


Figure F-39 Import Message

16. To regenerate runtime objects, click **Execute** and then **Continue**.

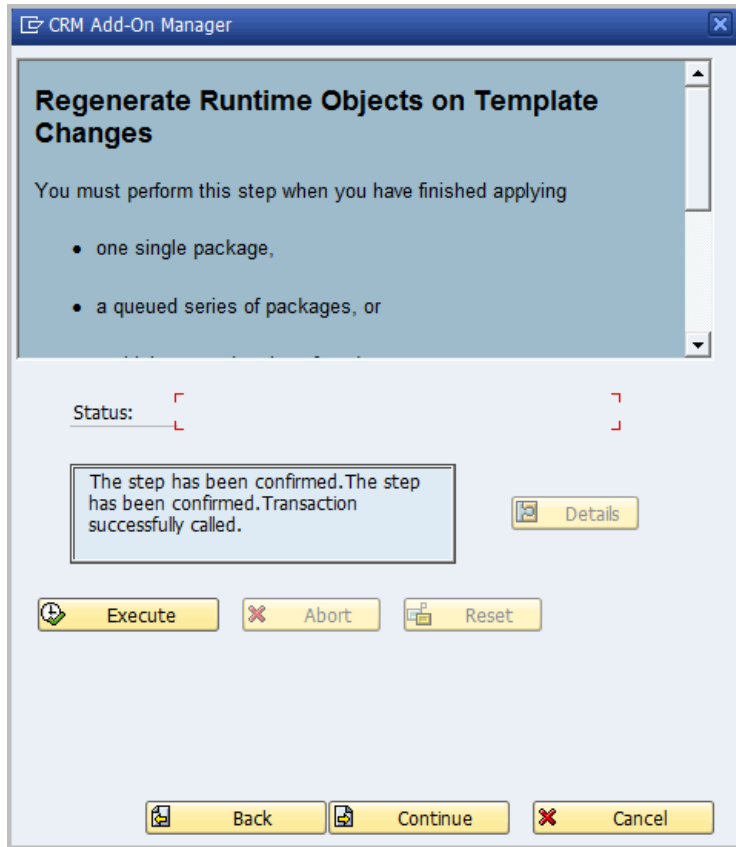


Figure F-40 Regenerate Runtime Objects

- Restart CRM inbound queues, click **Confirm**, then click **Continue**.

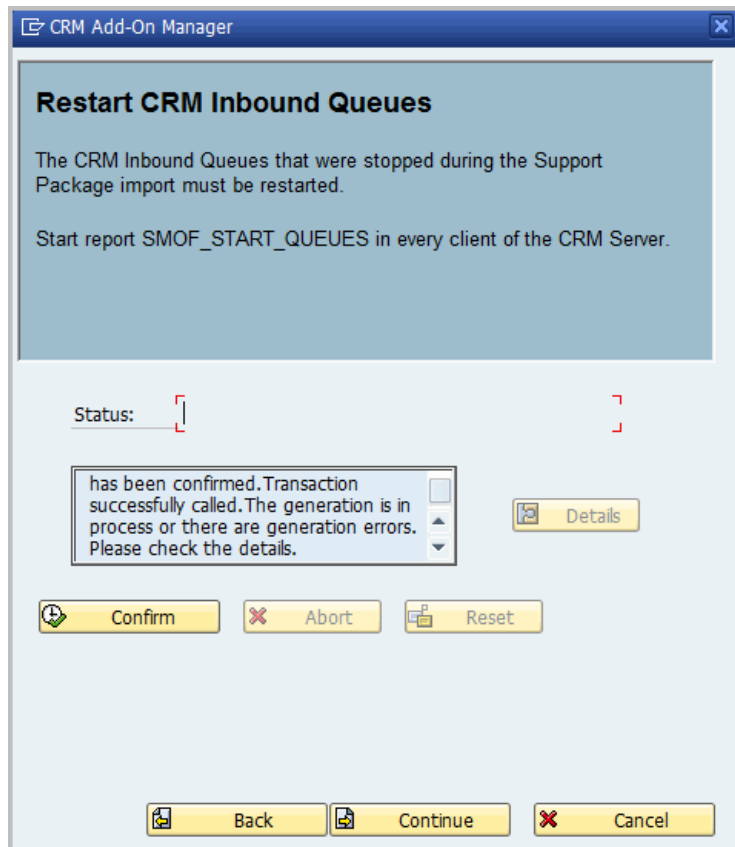


Figure F-41 Restart CRM Inbound Queues

18. Unlock CRM online users, click **Confirm** and then click **Continue**.

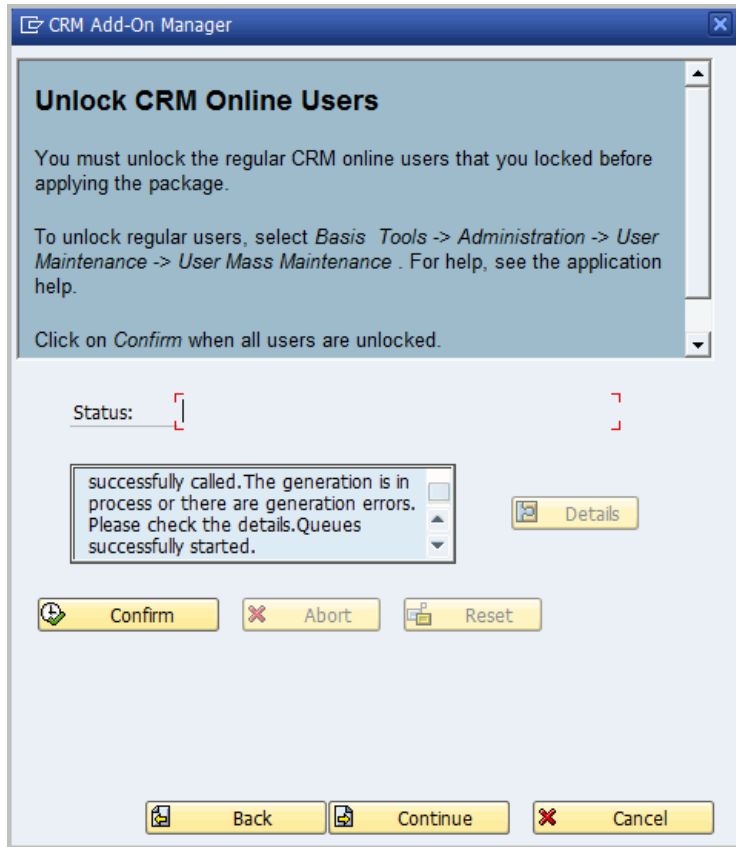


Figure F-42 Unlock CRM Online Users

19. On the **CRM Add-On Manager** screen, click **Continue**.

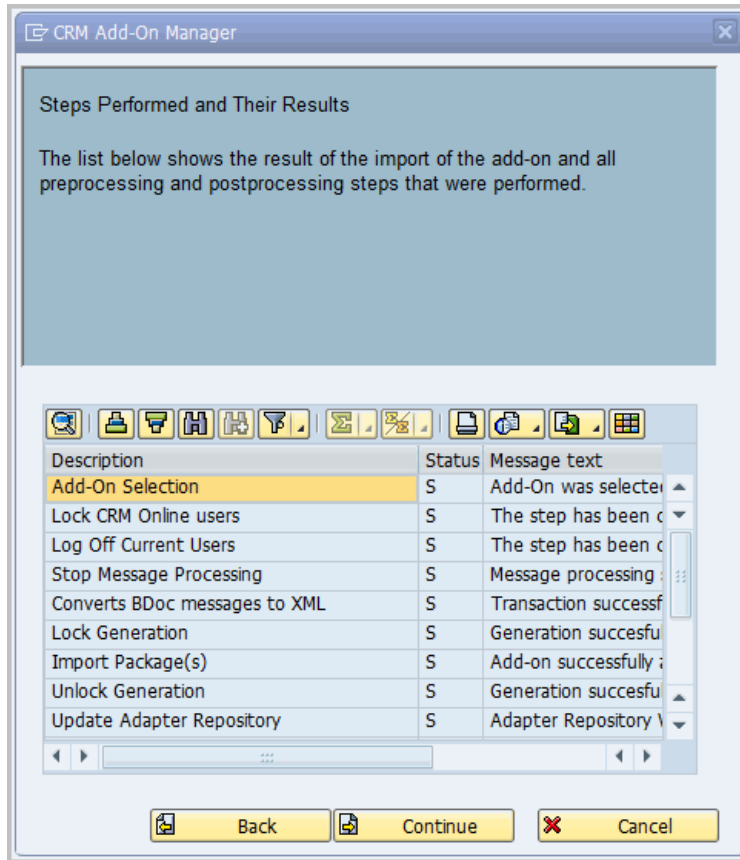


Figure F-43 CRM Support Package Manager

20. On the next screen, click **Complete** to finish the installation.



Figure F-44 Install Confirmation

21. The Installed Add-Ons window opens. Click **Cancel** to return to the SAP menu.

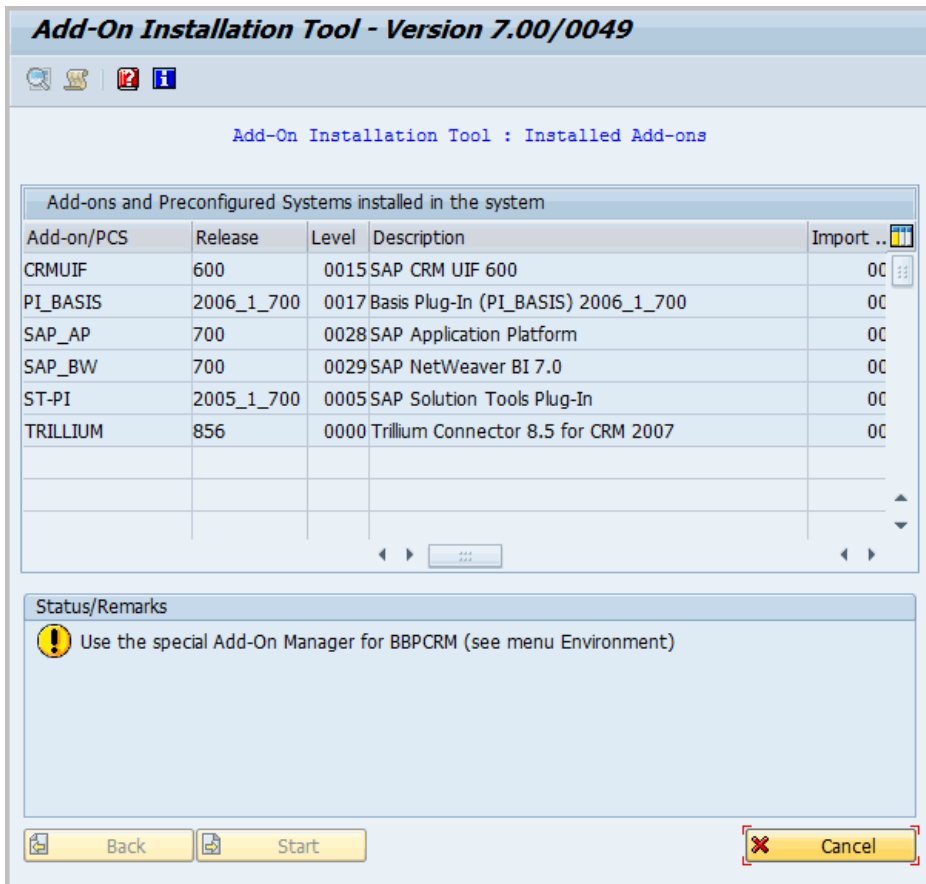


Figure F-45 Installed Add-Ons Window

SAP Add-On Support Package Installation (CRM)

Trillium Software periodically delivers support packages. To install a TS Connector for SAP Add-On support package, run transaction **/nSPAM** (SAP Support Package Installation Tool).

► To install the TS Connector for SAP Add-On Support Package

1. Log into the SAP system, **client 000** (zero-zero-zero), as a user who has the **SAP_ALL** profile.
2. Invoke the SAP Support Package Installation Tool by running transaction **/nSPAM**. The Support Package Manager initial screen opens.

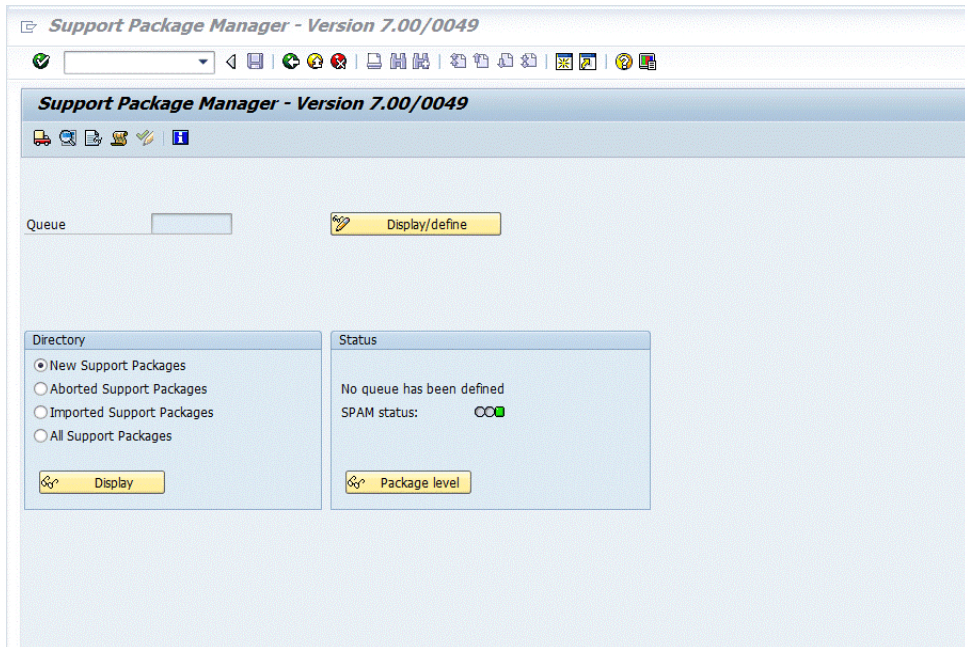


Figure F-46 Support Package Manager Initial Screen

3. From the menu bar of the Support Package Installation Tool screen, select **Support Package > Load packages > From the frontend**.

4. Browse to the Support Package location and click **Open**.

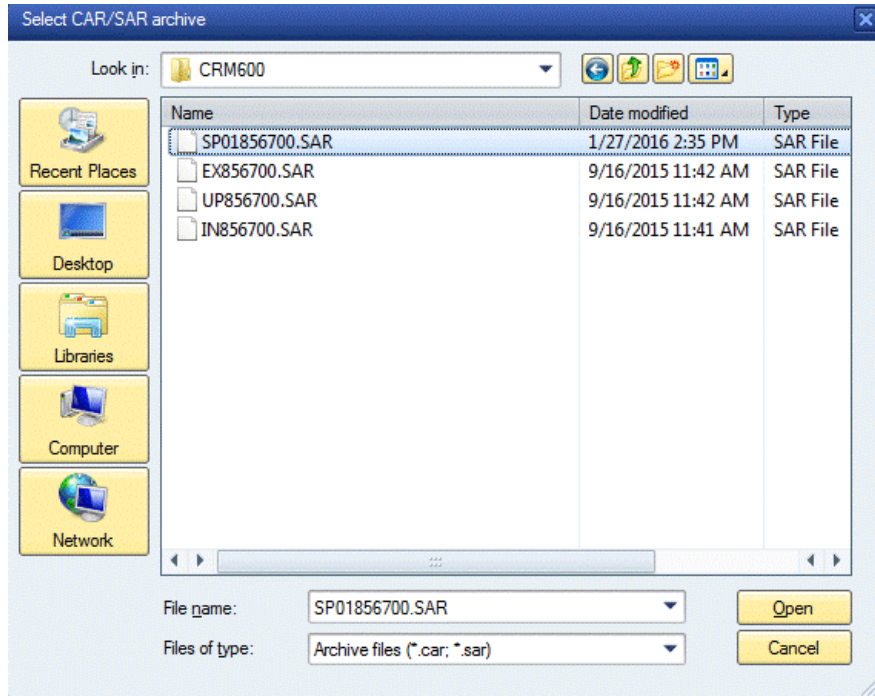


Figure F-47 Select CAR/SAR Archive Dialog Box

5. The **Decompress Tool** screen opens. Click **Decompress**.

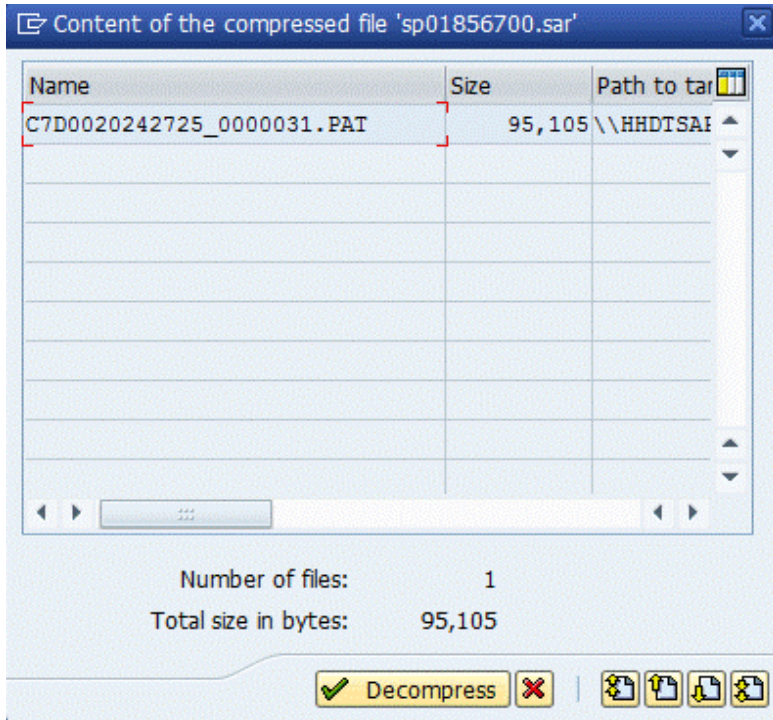


Figure F-48 Decompress Tool

- From the menu bar of the Support Package Installation Tool screen, select **Environment > Support Package Manager for EBP/CRM**.

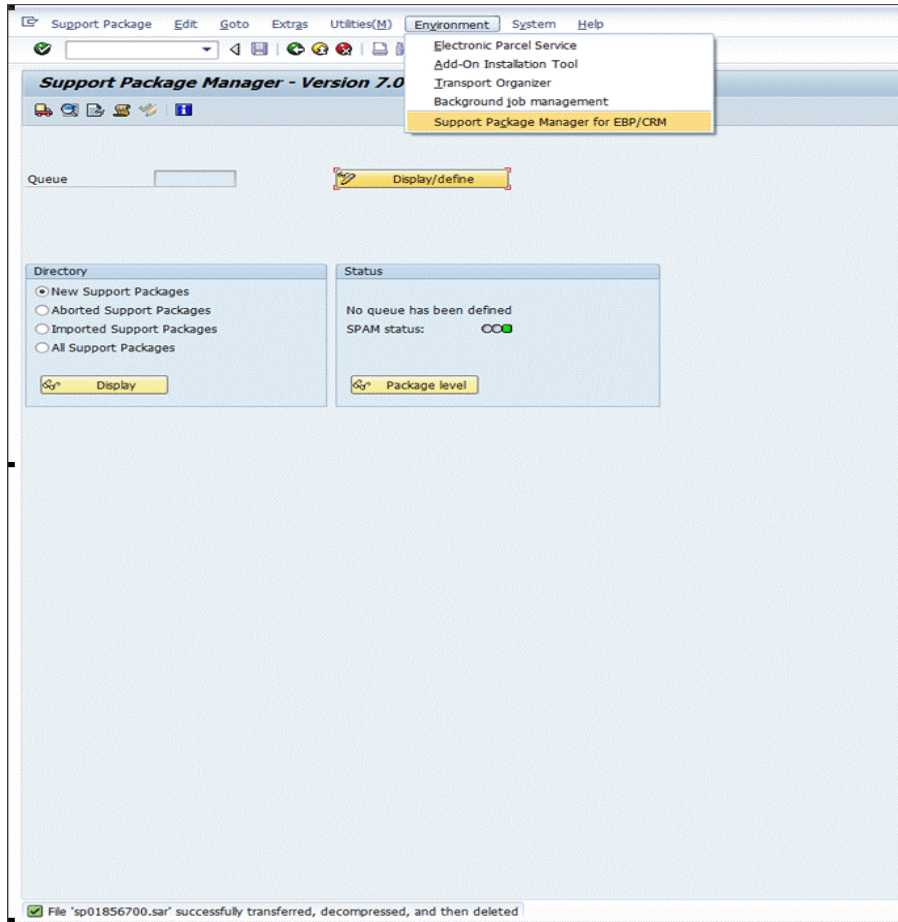


Figure F-49 CRM Support Package Installation Tool

7. On the **CRM Support Package Manager** screen, click **Continue**.

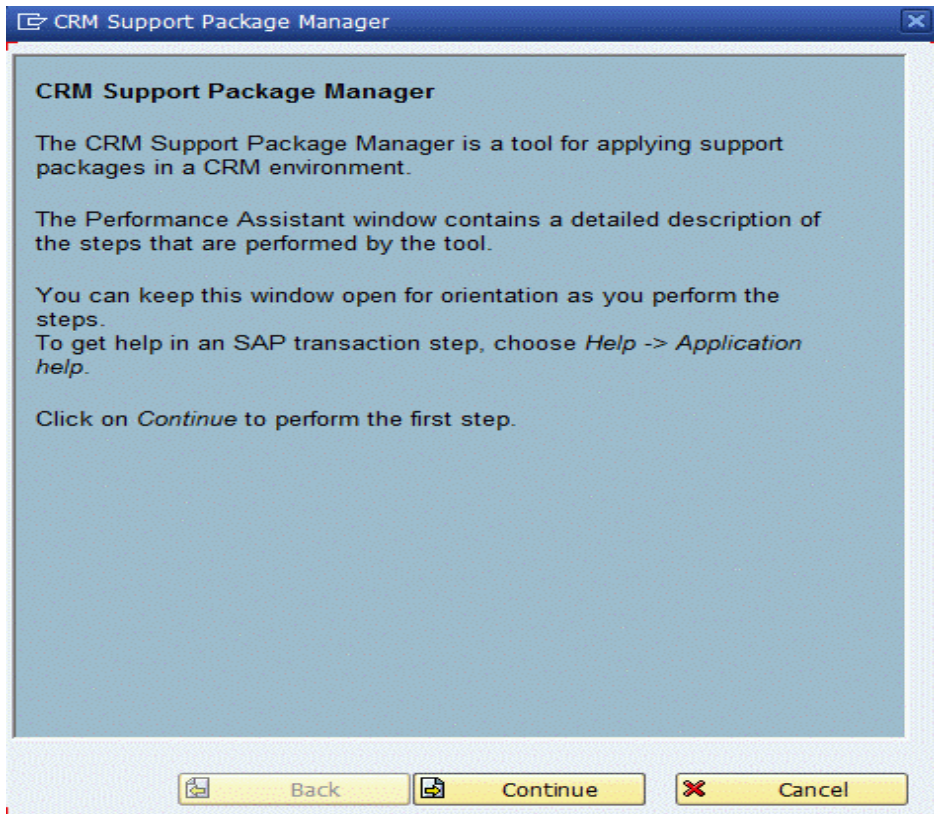


Figure F-50 CRM Support Package Manager Steps Information

8. On the next screen, select the **TRILLIUM** software component, then click **Continue**.

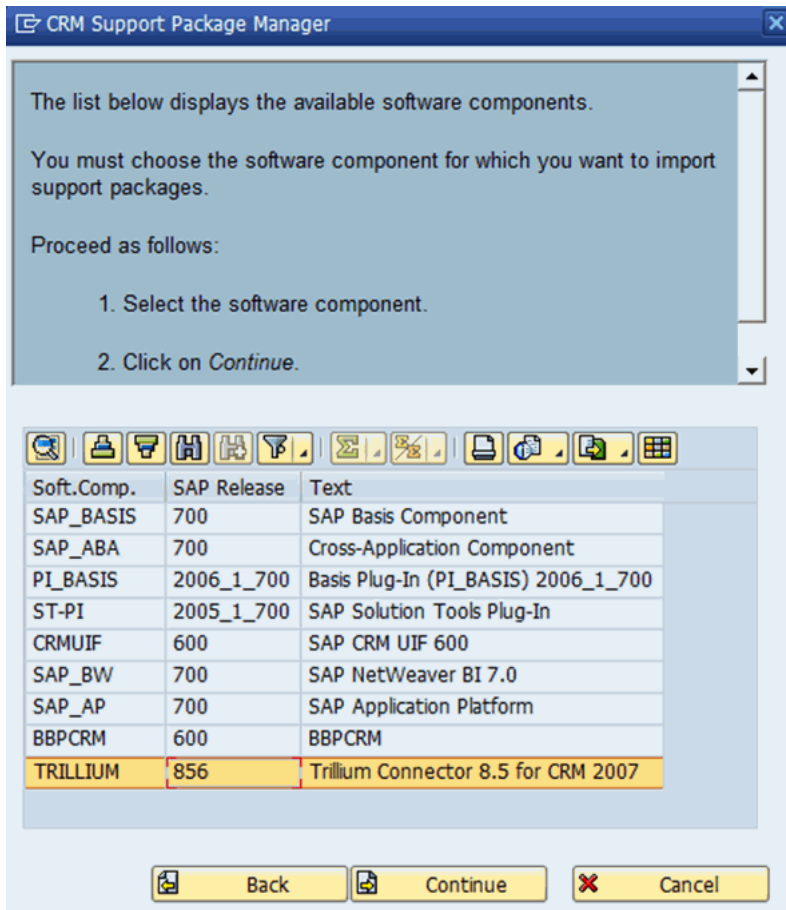


Figure F-51 CRM Support Package Management List Screen

9. Select the Trillium Support Package, then click **Continue**.

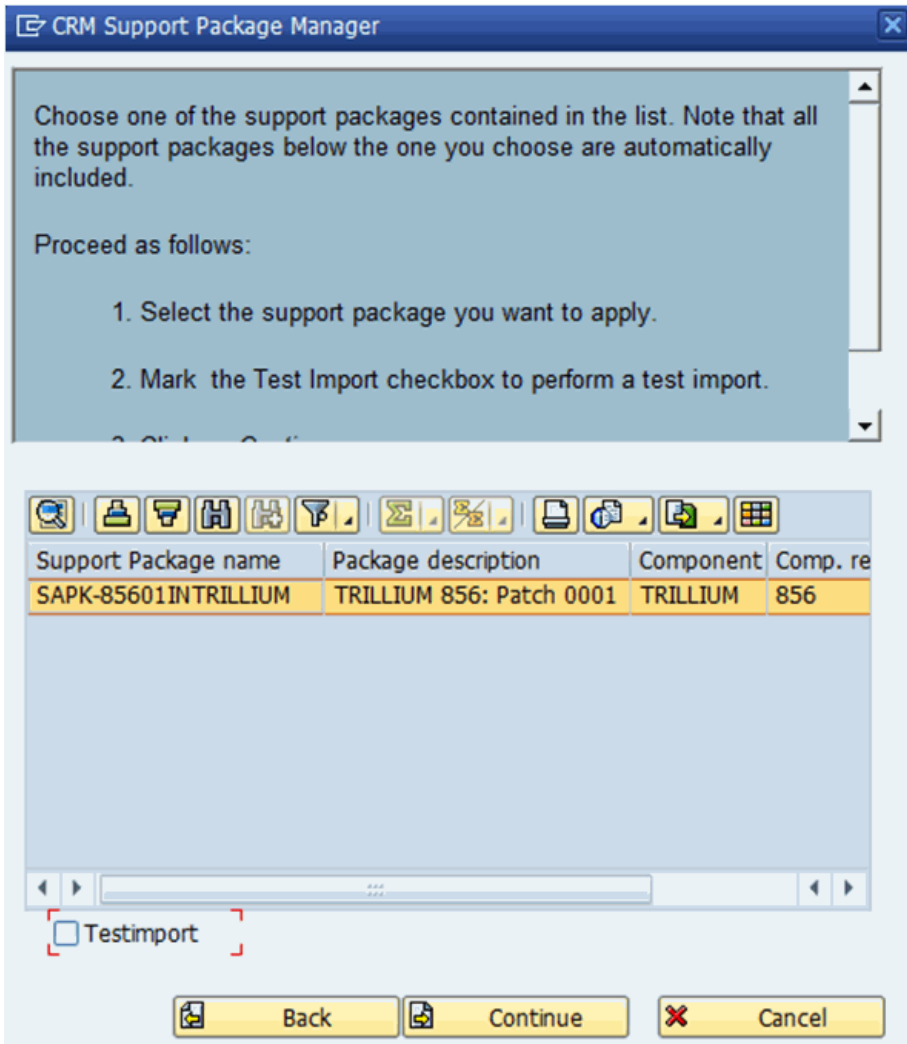


Figure F-52 CRM Support Package Management Select Screen

10. Read the Further Processing Steps message. Click **Confirm** and **Continue**.

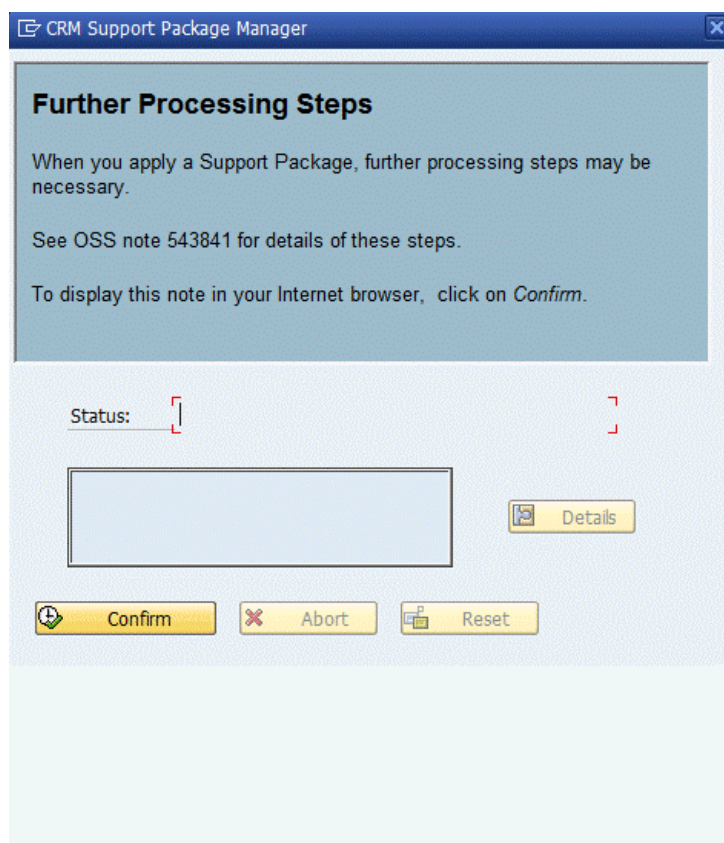


Figure F-53 Further Processing Steps

11. Read the Lock CRM Online Users message. Click **Confirm** and **Continue**.

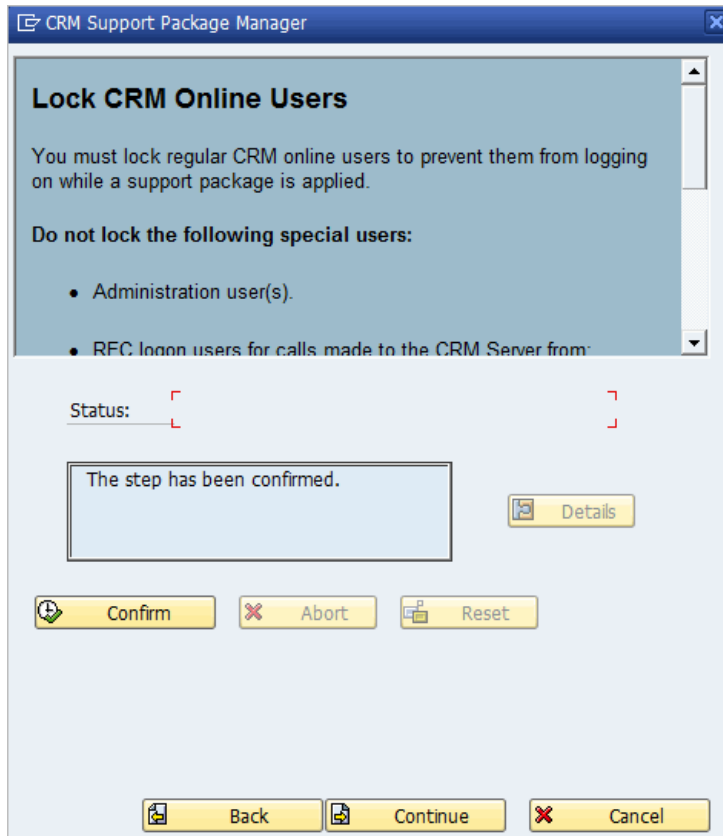


Figure F-54 Lock CRM Online Users

12. Read the Log Off Users Currently Logged On message. Click **Confirm** and **Continue**.

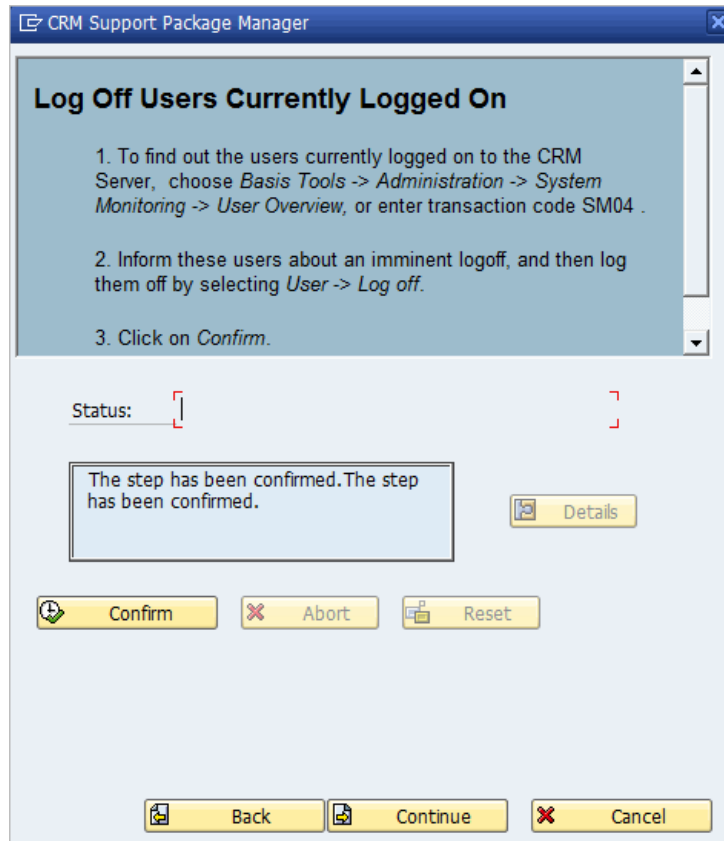


Figure F-55 Log Off Users

13. Read the Make Sure All Messages Are Processed message. Click **Execute**, **Back** and **Continue**.

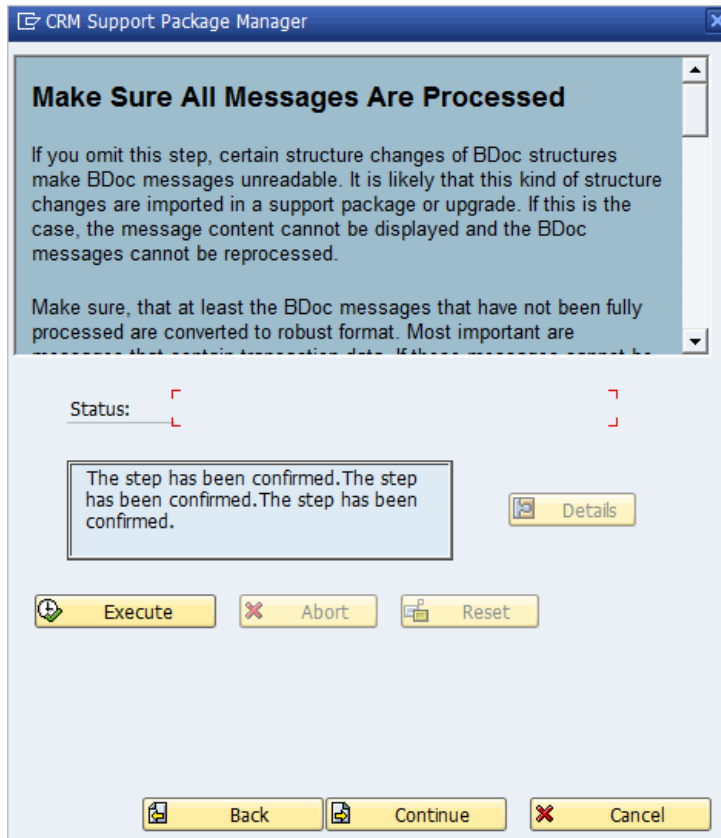



Figure F-56 Process All Messages

14. On the SPAM Import Queue screen, click the **check mark**  button to continue.

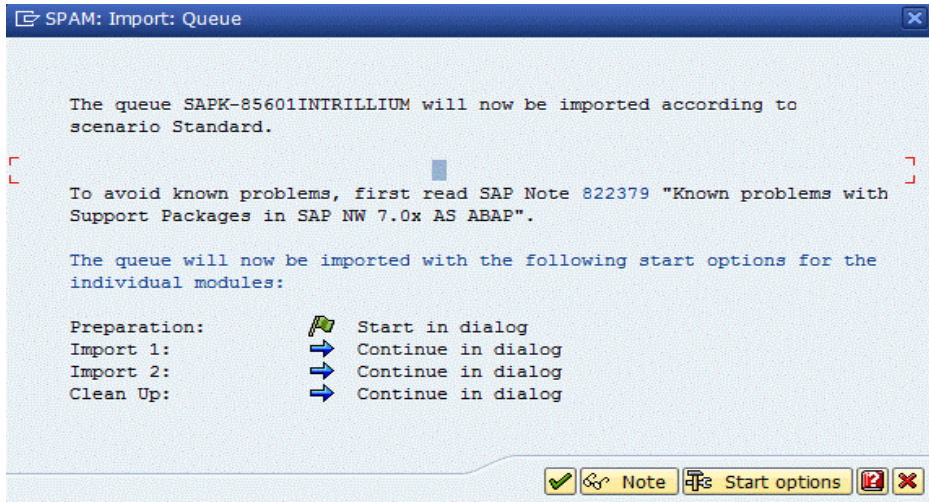


Figure F-57 CRM Import Queue Confirmation

15. On the Regenerate Runtime Objects on Template Changes screen, click **Execute** and **Continue**.

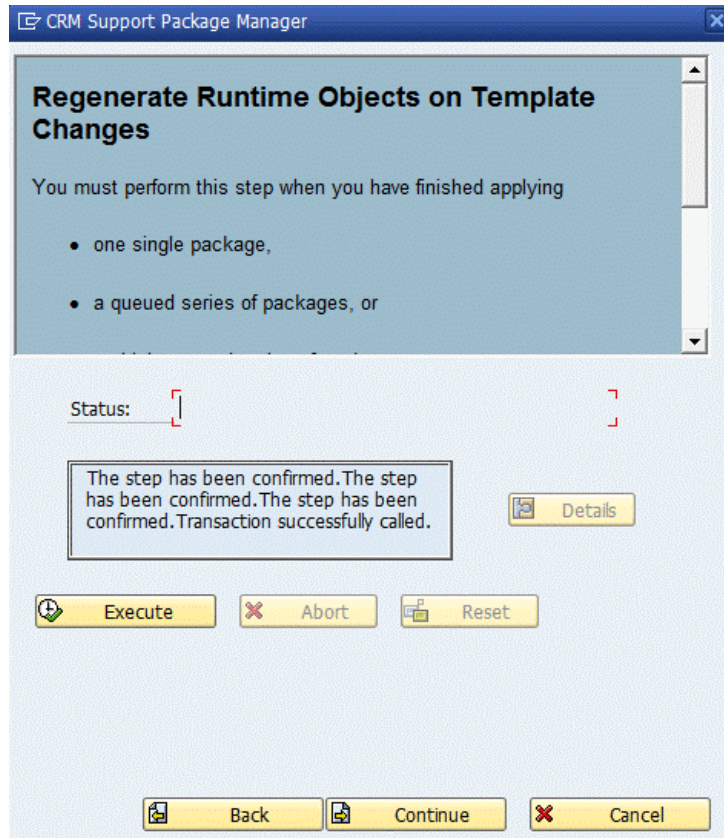


Figure F-58 Regenerate Runtime Objects

16. Read the Restart CRM Inbound Queues message. Click **Confirm** and **Continue**.

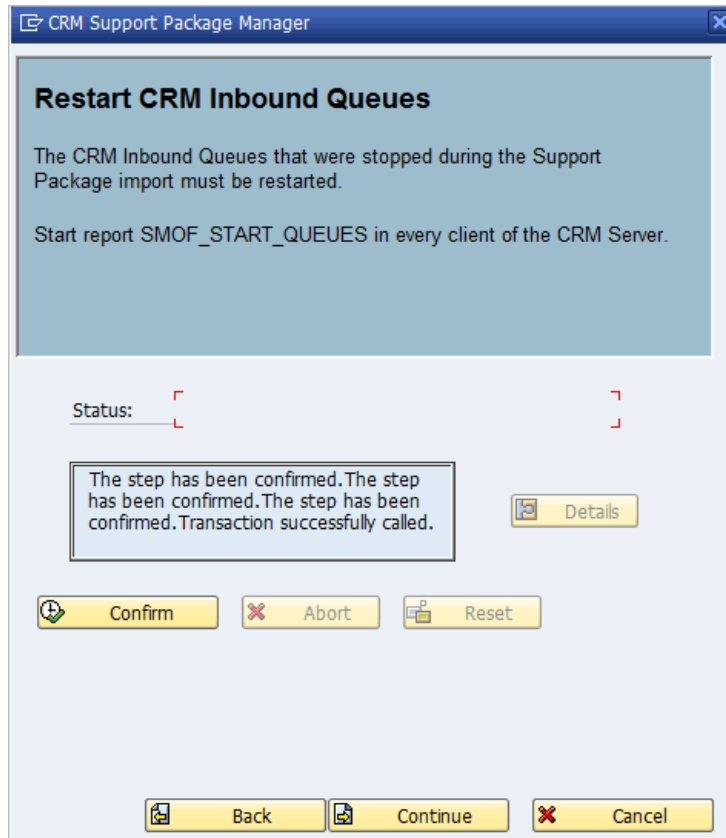


Figure F-59 Restart Queues

17. Read the Unlock CRM Online Users message. Click **Confirm** and **Continue**.

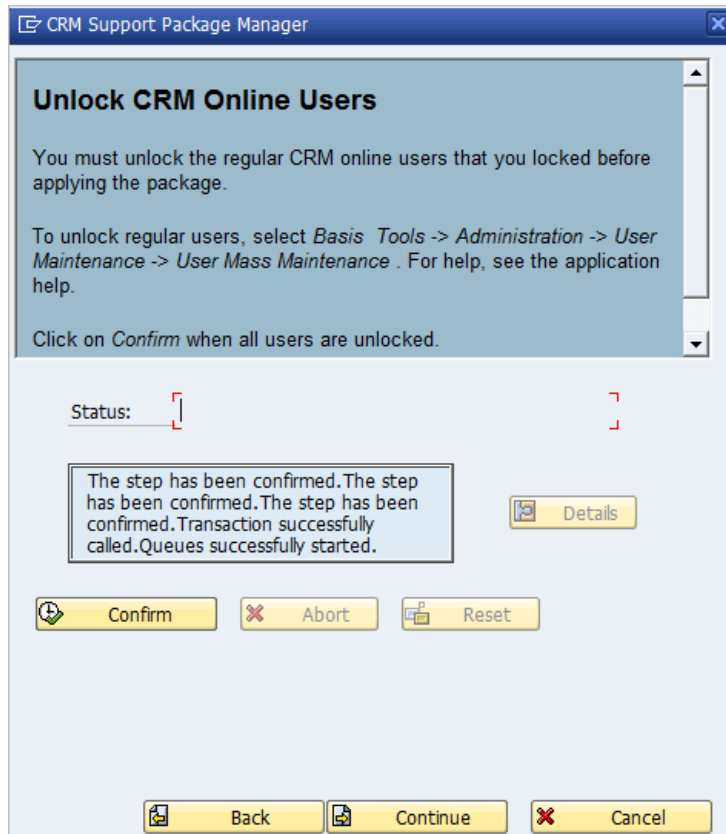


Figure F-60 Unlock Users

18. On the next screen, review the information, then click **Continue**.

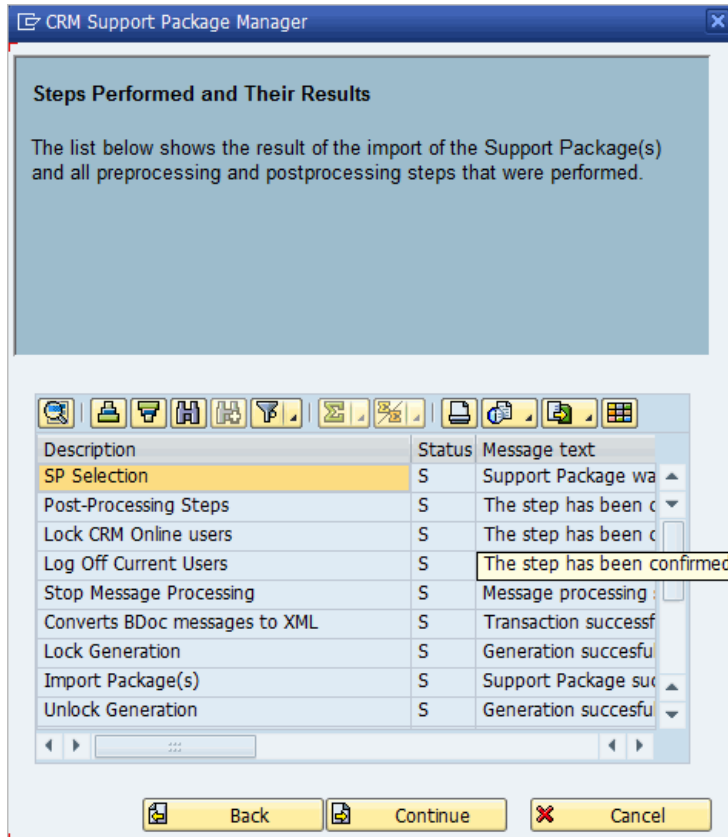


Figure F-61 CRM Support Package Management Steps Performed and Results

19. A confirmation screen will open. Click **Complete** to finish the installation.

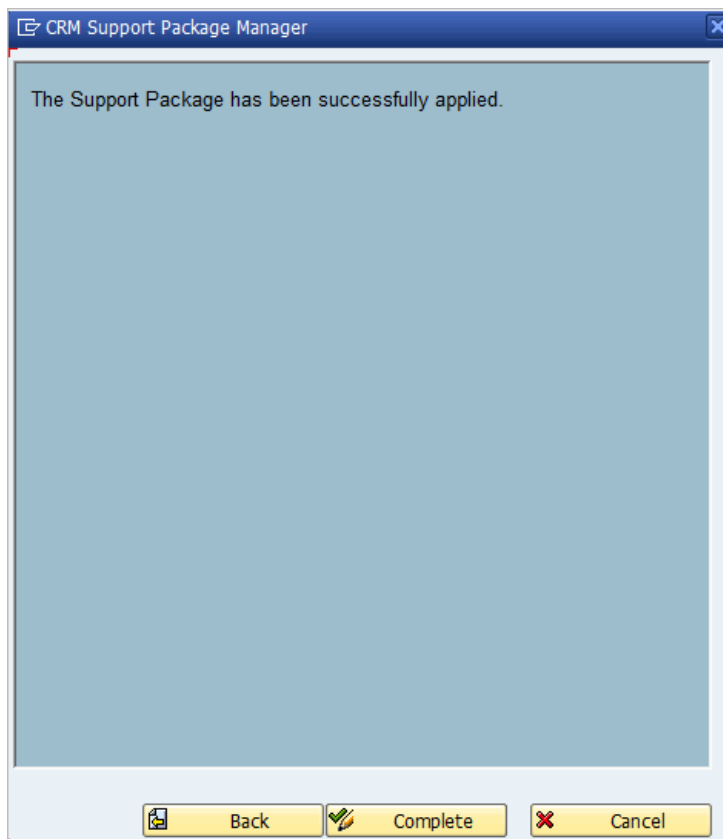
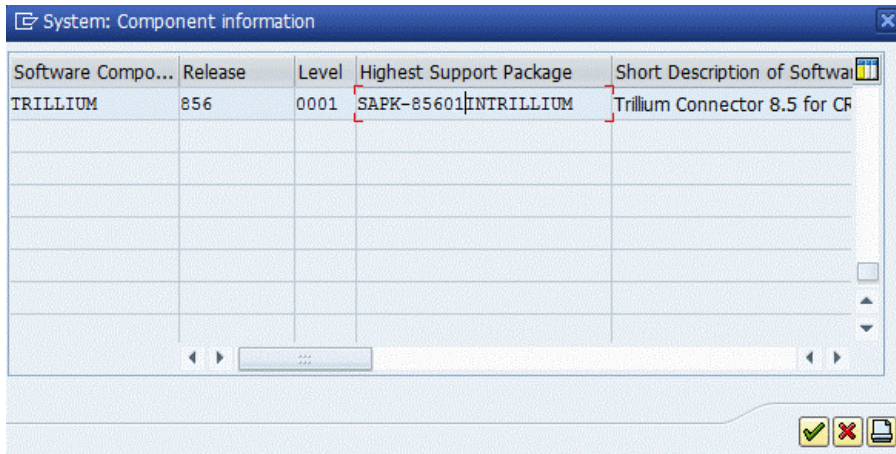


Figure F-62 Complete the Installation

20. You can check your system status to confirm that the Trillium Support Package is installed.



The screenshot shows a window titled "System: Component information" with a table of software components. The table has five columns: "Software Compo...", "Release", "Level", "Highest Support Package", and "Short Description of Softwa...". The first row contains the following data: "TRILLIUM", "856", "0001", "SAPK-85601", and "INTRILLIUM Trillium Connector 8.5 for CF". The "Highest Support Package" cell is highlighted with a red dashed box. The window also features a scrollbar on the right and navigation buttons at the bottom.

Software Compo...	Release	Level	Highest Support Package	Short Description of Softwa...
TRILLIUM	856	0001	SAPK-85601	INTRILLIUM Trillium Connector 8.5 for CF

Figure F-63 Check Status

Additional Post-Installation Steps for CRM 7.0 Ehp1, Ehp2, Ehp3 and Ehp4

If you are installing CRM 7.0 Ehp1, Ehp2, Ehp3 and Ehp4, proceed with the following steps. All other users can proceed to [“CRM WebClient Components” on page 322](#).

1. **CRM 7.0 Ehp1, Ehp2, Ehp3 and Ehp4 users only:** Apply the following OSS Notes:
 - 1599111 Incorrect check status after address validation (Ehp1 only)
 - 1623772 Address validation: Dynamic usage creation for popups (Ehp1 and Ehp2)
 - 1693004 Postal validation for standard address not done second time (Ehp1 and Ehp2)
 - 1919171 Important Address fields are not passed during fuzzy search (Ehp1, Ehp2 and Ehp3)
 - 2283873 (Ehp4)

2. **CRM 7.0 Ehp1, Ehp2, Ehp3 and Ehp4 users only:** Deactivate BADI implementation MDG_BS_ADR_SEARCH_INITIAL_LOAD.

You will need to obtain a repair key for object R3TR ENHO MDG_BS_ADR_SEARCH_INITIAL_LOAD.

In transaction SE19, change new BADI implementation MDG_BS_ADR_SEARCH_INITIAL_LOAD. Uncheck the **Implementation is active** check box and activate the BADI.

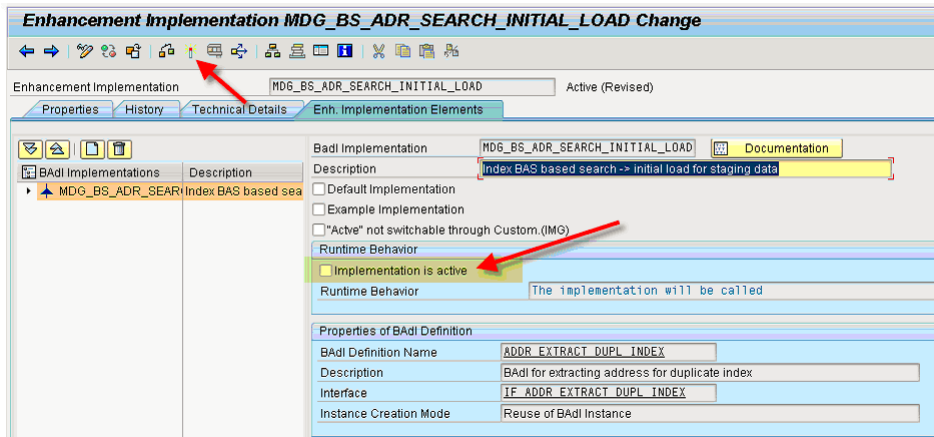


Figure F-64 Activate the BADI

After activation, you should see that the Runtime Behavior is "The implementation will not be called."

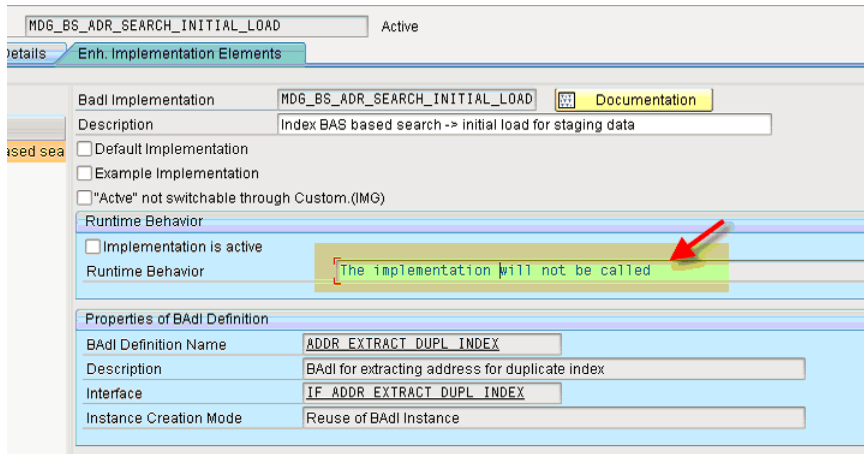


Figure F-65 Implementation Not Called

3. **CRM 7.0 Ehp1, Ehp2, Ehp3 and Ehp4 users only:** Optionally, remove the message text from the address check pop-up view configuration for roles other than the IC WebClient.
4. **CRM 7.0 Ehp1, Ehp2, Ehp3 and Ehp4 users only:** Using transaction SM30, reduce the threshold on object type BUS1006 from 90.0 to 10.0 in view BSV_DUPL_OBJ.

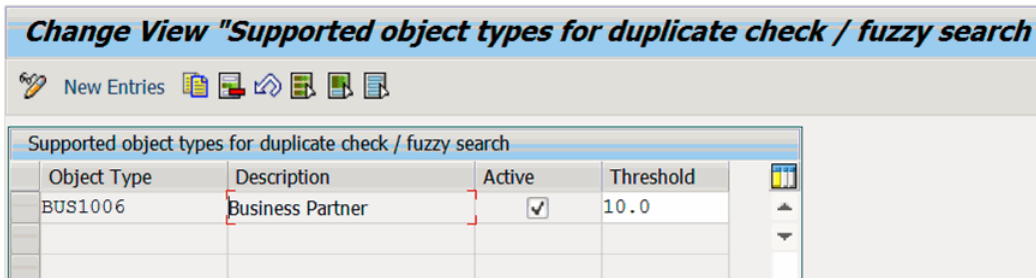


Figure F-66 Reduce Threshold

CRM WebClient Components

If you will be using the CRM WebClient, import the following transport request into the SAP Client that you will be using to run the CRM WebClient application:

- For CRM 2007 (6.0) import transport C7DK900088
- For CRM 7.0 import transport R7DK900032
- For CRM 7.0 Ehp1, Ehp2, Ehp3 and Ehp4, import transport C71K900047

The transports are delivered in the SAR files for the add-on installation or upgrade. The appropriate transport should already be in your transport directory. Manually add the transport to your import queue and import it into the SAP client that you will be using to run the CRM WebClient applications.

For CRM 7.0 Ehp1, Ehp2, and Ehp3 when importing the request in STMS be sure to check the import options **Ignore Non-permitted Transport Type** and **Ignore Invalid Component Version**.

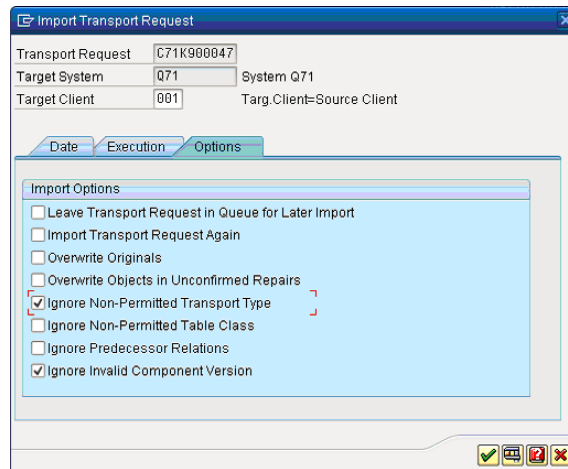


Figure F-67 Import Options

For CRM 7.0 Ehp4 when importing the request in STMS be sure to check the import options **Ignore Invalid Transport Type** and **Ignore Invalid**

Component Version.

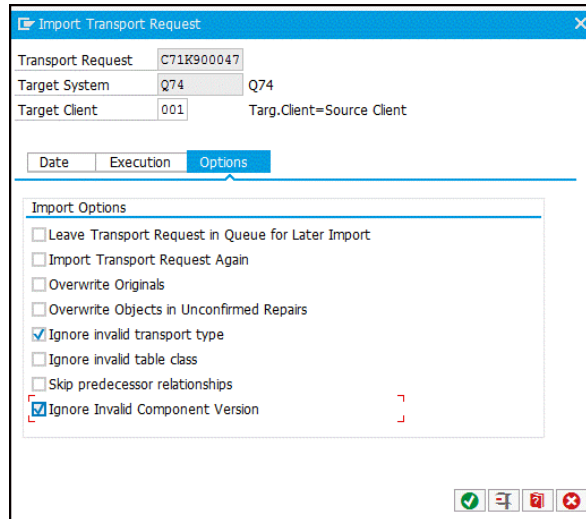


Figure F-68 Ehp4 - Import Options

For more information on installation and implementation of the CRM WebClient, refer to the *TS Connector for SAP Products Reference Guide*.

Post-Installation Checklist

- If you installed the TS Quality Connector on Windows, reboot your computer.
- Activated **BC-SET** in SAP with no errors.
- Able to access Address Management with Trillium and can make modifications in this section.
- Activated required countries.
- Activated Index Pool.
- Installed all TS Quality Connector components with the correct parameters:
 - Path used: Absolute/Relative
 - Port number:

- Host name:
- SAP Gateway Host name:
- SAP Gateway Service name:
- RFC Server user and password created and defined in the **TriISAP.cfg**.
- Configuration in **SAPRFC.INI** file matches RFC destination configuration in SAP.
- Windows – TS Quality services starts by using either the:
 - Director for TS Quality System Manager
 - or-
 - Administrative Tools -> Services
- UNIX – Confirm that the TS Quality services start by using either:
 - The Director for TS Quality Console
 - or-
 - The UNIX console using command: `ps -ef | grep rill`.
- Check permissions.
- Test the connection using transaction **/nSM59**.
- Check the number of threads available using transaction **/nSMGW**.
- Test to ensure that out-of-the-box is successful.
- Modify the path to postal tables and project or project template to utilize the complete version of postal tables and word patterns.

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