Deployment Center
3.1
## Contents

### Introduction to Deployment Center
- Getting started with Deployment Center .................................................. 1-1
- Deployment considerations ............................................................................. 1-2
- Deployment process ....................................................................................... 1-3
- Deployment Center architecture .................................................................... 1-5

### Installing and using Deployment Center .................................................. 2-1
- System requirements ...................................................................................... 2-1
- Install Deployment Center ........................................................................... 2-1
- Upgrade Deployment Center ......................................................................... 2-5
- Participate in the Product Excellence Program ............................................. 2-6
- Uninstalling Deployment Center .................................................................. 2-7
- Troubleshoot Deployment Center installation or upgrade ......................... 2-8
- Start Deployment Center ............................................................................. 2-9
- Log on to Deployment Center ....................................................................... 2-9
- Troubleshoot Deployment Center operations .............................................. 2-10
- Backup and recovery procedures .................................................................. 2-11

### Managing repositories ............................................................................. 3-1
- Manage repositories ...................................................................................... 3-1
- Maintaining repositories ............................................................................... 3-3
- Mapping a drive to a repository .................................................................... 3-4
- Troubleshoot the repository service ............................................................. 3-5

### Managing Teamcenter environments ....................................................... 4-1
- Manage environments ................................................................................... 4-1
- Verify software, applications, and components ......................................... 4-1
- Edit environment properties ........................................................................ 4-2
- Create environments .................................................................................... 4-3
- Register environments .................................................................................. 4-3
- Remove environments ................................................................................... 4-4
- Troubleshoot registering environments ....................................................... 4-5
- View registered machines .............................................................................. 4-5

### Deploying software using Deployment Center ........................................ 5-1
- Installation, maintenance, and upgrade strategy ........................................ 5-1
- Application deployment procedure ............................................................... 5-2
- Maintain your environment .......................................................................... 5-4
- Upgrade or patch your environment ............................................................. 5-5
- Server and client deployment scripts ............................................................. 5-6
- Software task ................................................................................................. 5-8
Contents

Options task .......................................................... 5-8
Applications task ..................................................... 5-9
Components task .................................................... 5-10
Deploy task ............................................................. 5-13
Run the deployment scripts ....................................... 5-15
Troubleshoot the deployment script ............................ 5-18

How to deploy the Business Modeler IDE templates on Teamcenter .............. 6-1
Deploy Business Modeler IDE packages ................................ 6-1
Chapter 1: Introduction to Deployment Center

Getting started with Deployment Center

Deployment Center is a centralized web application for deploying software to Teamcenter environments. Deployment Center gives you access to multiple environments from a single, centralized location. It simplifies the process of installing and updating software and automates deployment. You can manage a variety of Teamcenter environments more efficiently.

Benefits

- Deploy, manage, and maintain multiple versions of software in multiple Teamcenter environments from a single web application with authenticated user access.
- Reduce the costs of managing Teamcenter environments by reducing the number of people, steps, and time involved in software deployment.
- Provide a centralized location to create and view Teamcenter environments and view deployment information.
- Ensure consistency and accuracy by reviewing and adjusting deployment configuration before rollout to Teamcenter environments.
• When setting up your environment, take advantage of entering parameters for one component and having those values shared with related components. For example, when you enter a machine name or port number for a component, that information is shared with other components that require the same information.

**Flexible administration of software deployment**

The software deployment process is accomplished in two phases.

1. Select the software and configure the deployment in the Deployment Center web application. You can manage responsibility for software deployment using a single administrator or share it among the site's deployment experts. For example:
   • A business analyst can make decisions about choosing the applications. Business analysts can choose the software versions and the applications needed by business units.
   • An administrator can make decisions about the machines, ports, URLs, user names, passwords, and component settings for the target machines in an environment. Administrators can make deployment selections based on knowledge of hardware infrastructure, number of users, and which applications are used by business units.

2. After reviewing the deployment configuration, generate the deployment scripts and deploy the software on the target machines.

**Manage software deployment in Teamcenter environments**

You can deploy a variety of software among your Teamcenter environments. A typical deployment process specifies software configuration and generates deployment scripts that install or update the software on target servers using software kits from a common repository.

**Finding information**

The Deployment Center documentation describes how to create, deploy, and manage your Teamcenter environments using Deployment Center. To learn how to deploy your specific software or application, refer to the documentation for your version that you plan to install or update.

You can also review a set of videos describing Deployment Center functionality. On the Deployment Center home page, click **GETTING STARTED** for information about these videos.

**Deployment considerations**

Information about enhancements and new features is in What's new in Deployment Center 3.1.

https://www.plm.automation.siemens.com/locale/docs/

**Find software support on GTAC**

For information about specific supported Teamcenter Foundation, Active Workspace, and other software, check compatibility in the Internal Interoperability – Teamcenter Compatibility Matrix, available from the GTAC hardware and software certifications page:

http://www.siemens.com/gtac/
Deploying custom software with Deployment Center

You can deploy Business Modeler IDE template packages created in Teamcenter 11.3 and later.

Limitations

You can upgrade directly to Deployment Center 3.1 only from these previous Deployment Center releases:

- 2.0, 2.1, 2.1.1, 2.2, and 3.0.

If your current Deployment Center version is not supported for direct upgrade to version 3.0, you must upgrade to a supported version, and then upgrade to Deployment Center 3.1.

For information on support of software specific to this release, consult the DeploymentCenter_3.1_README.pdf, available from the Siemens Digital Industries Software GTAC download site where you obtained the Deployment Center 3.1 product download:

http://www.siemens.com/gtac/

To perform additional deployment actions that are not yet available in Deployment Center, run Teamcenter Environment Manager (TEM) on the target servers to complete your environment updates and configuration.

Deployment process

You can simplify your deployment process using Deployment Center. You can assess your registered Teamcenter environments to plan deployments. You can research and confirm your settings before committing a deployment. You can review the application choices and parameter settings before generating deployment scripts. You can also validate deployment scripts before deploying.

Learn about the basic principles of the Deployment Center application deployment process:

Start Deployment Center

Start and log on to Deployment Center. You can display information about all existing, registered Teamcenter environments, including deployed software, applications, server components, and environment properties.

Stage the software

Plan where to stage Teamcenter and related software. Download your software kits and choose where to store them for deployment.

Software staging considerations

- Keep the software in a single local repository on the Deployment Center web server. Use this option if you don't have spare server space located near target servers.

- Put the software in a shared location that may be near your target environment. Plan for enough disk space to hold the entire set of software for the environment. If you have existing software kits in a software directory, you can map a drive to that location. Be sure the server is accessible to Deployment Center. Use this option to make access easier during deployment.
• Copy the software from the repository to each target server, ensuring each server gets the complete set of software. Specify this path in the `softwareLocation` argument when you deploy. Plan for additional disk space on each target server. Use this option to install software more quickly.

**Set up the repository**

Specify one or more software repository locations when you install or upgrade Deployment Center. If you already have software on another server, you can include it.

Deployment Center scans repository locations regularly for unzipped software. The scanned software appears on the **Software Repositories** page which lists all available, valid software kits. If you have software dependencies, the repository notes missing software.

**Review repository software**

Place the downloaded software kits in a repository **software** directory. Be sure they have been unzipped.

Deployment Center scans repository locations regularly for unzipped software. The scanned software appears on the **Software Repositories** page which lists all available, valid software kits. If you have software dependencies, the repository notes missing software.

**Manage environments**

You can create and manage registered environments in Deployment Center. You can view the list of Teamcenter environments on the **Environments** page.

You can create a new environment, register an existing Teamcenter environment, or remove an environment.

**Review registered servers**

You can view all machines from your registered Teamcenter environments. On the **Machines** page, you can see all server machines used by the components in your registered environments.

**Install or update software and applications**

In Deployment Center, determine your approach for installing or updating an environment. Then deploy your software using the Deployment Center application.

You can deploy software in a multiple server environment or on a single machine. If your components are on multiple servers, verify the server configuration for each component.

**Configure server components**

In Deployment Center, you configure server components that are associated with your selected software and applications. Some components may be automatically selected, and some settings may already be configured. You can choose multiple servers for deployment.

Because selections and settings are saved as you go, you can review and verify them. If you are unsure of your setup or you need to make changes, return later to complete or change your settings before deployment.
When you enter user names and passwords for server components in Deployment Center, passwords are encrypted using AES128 bit encryption in the generated deployment scripts.

**Validate deployment scripts**

After you verify your configuration information, generate the deployment scripts, and copy each script to its corresponding target server. Each script contains the designated target machine name, what to install or update on the target machine, and the software configurations you specified in Deployment Center.

**Tip**

Validate the deployment scripts in a test run. As a best practice, run the deployment scripts in diagnostic mode on each target machine to validate the configuration. Check the log output for errors. No updates are made to the target machine during diagnostic validation. Make the corrections in Deployment Center, regenerate the deployment scripts, and run them in diagnostic mode until all errors are addressed.

**Deploy the software**

After validation is successful, run the deployment scripts on each target machine. The deployment script has a parameter to specify the location of the software directory. Be sure the software is available to the target machines.

**Update or maintain your environments**

You can install or update additional applications and components in Teamcenter environments managed from Deployment Center. You can also perform maintenance on component configuration or parameter values after installation from Deployment Center.

To perform additional deployment actions that are not yet available in Deployment Center, run Teamcenter Environment Manager (TEM) on the target servers to complete your environment updates and configuration.

**Deployment Center architecture**

The basic architecture of Deployment Center is comprised of several main parts that communicate with each other.

- **Jetty web server and the Deployment Center web application**
  
  A Jetty web server is automatically installed and configured for Deployment Center, and the installation automatically deploys and runs the Deployment Center web application. No additional installation or configuration is required for the Jetty web server or the Deployment Center web application. Access the web application from a web browser on any machine.

- **H2 database**
  
  The H2 database is also automatically installed and configured for Deployment Center. The database stores information about the Teamcenter environments registered with Deployment Center. No additional installation or configuration is required for the H2 database.
Repository and the repository service

The repository stores the downloaded software kits. Deployment Center uses the repository subdirectories when it registers Teamcenter environments and displays choices for installing and updating software and applications.

You provide the repository directory location during installation of Deployment Center. Be sure that repository location has adequate disk space available to store all the software kits needed for your deployments.

The repository subdirectories are automatically created:

- **dc_contributions**
  Contains the Deployment Center files for versions of Teamcenter, Active Workspace, Business Modeler IDE, and other supported software.

  **Caution**
  Do not make changes to this directory.

- **deploy_scripts**
  Contains a directory for each environment managed by Deployment Center. Generated deployment scripts and related files are placed in the appropriate environment subdirectory in a timestamped folder. The Deployment Center populates this directory structure for installing software.

  **Caution**
  Do not make changes to this directory.

- **software**
  Contains the software you want to install or update using Deployment Center. Download Teamcenter software from the GTAC software download site, unzip the archives, and then copy the unzipped folders into the **software** directory.

  Deployment Center automatically scans this directory and displays the list of selections on the **Software Repositories** page.

- **system**
  Stores Deployment Center software files.

  **Caution**
  Do not make changes to this directory.

The repository service is automatically installed when you install Deployment Center. The repository service runs automatically and monitors the repository. The repository service reports the software kits to Deployment Center and populates the list of available software selections.
Staging area

The staging directory is where Deployment Center stores the generated deployment script ZIP files that are created when you finish the deployment tasks. Copy the deployment scripts to each of the target machines. If you have configured components that run on multiple machines in the environment, there is one generated deployment script ZIP file for each machine.
Chapter 2: Installing and using Deployment Center

System requirements

<table>
<thead>
<tr>
<th>Operating systems</th>
<th>Free disk space</th>
<th>Free RAM</th>
<th>Third-party software</th>
</tr>
</thead>
<tbody>
<tr>
<td>All systems must be 64-bit and a minimum of two cores.</td>
<td>Additional disk space is required to store software download kits.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

System, hardware, and software support for your Teamcenter environments is available from GTAC. You must have a WebKey account to access GTAC.

- Certifications are available from the hardware and software certifications page:
  
  http://www.siemens.com/gtac/

- The Internal Interoperability – Teamcenter Compatibility Matrix is also available from the hardware and software certifications page.

Install Deployment Center

Prepare to install Deployment Center

Before you begin the Deployment Center installation, check:

- The server meets system requirements.

- The server directory path for Deployment Center has write access.

- The port you want to use for the Deployment Center web server is not in use.

- The port that you want to use for the repository to communicate with the Deployment Center server is not in use.

- The software repository directories for Deployment Center have sufficient disk space for software storage.

- If you have existing software kits stored on network locations, you can map drives to these software repositories. You need the user name and password for each location.
• The installing user account has administrative privileges so that the Deployment Center service is installed correctly.

• The Windows service name you want to use does not conflict with existing service names.

Install Deployment Center

1. Download the installation ZIP file for Deployment Center from the GTAC software Download page.

2. Extract the Deployment Center installation ZIP file to the server where you want to run Deployment Center. The server must be accessible to the Teamcenter environments where you want to install and manage software.

3. Install the supported JRE version of Java and set JAVA_HOME to the location.

4. Open a command prompt window and navigate to the location where you extracted the Deployment Center installation software. Go to the deployment_center directory.

5. Create an input .properties file that specifies the parameters for the Deployment Center installation. Place it in the deployment_center directory.

You can start with a copy of the sample file deployment_center\install_config.properties, and set the input parameters and values. When you specify a path in the input file, use double backslashes \ to make the path valid for Java.

Properties file parameters

serverDir (required)
Specify the full path to the directory for the Deployment Center web server and the database. Be sure the path has no spaces.

serverPort (required)
Specify the port where the Deployment Center web server listens for requests.

serviceName (optional)
Specify the service name for the Deployment Center web server. If you omit this argument, the server is not installed as a service and must be started manually.

serviceDName (optional)
Specify the service display name for the Deployment Center web server.

repoDir (required)
Specify the full path to the directory for the Deployment Center repository. The path presumes that the required software subdirectory exists.

repoPort (required)
Specify the port where the Deployment Center repository listens for requests from the Deployment Center server.
repoServiceName (optional)
Specify the name for the Deployment Center repository service. If you omit this argument, the Deployment Center names the service RepositoryService.
If the service name matches an existing service name, the installation fails and returns an error. You must either rename or remove the conflicting service name, or specify a different name.

user (required)
Specify the user name for Deployment Center. The user views environments, sets up installations, and generates deployment scripts. Remember the user name for logon later.

password (required)
Specify the password for the Deployment Center user. Remember it for logon later.

extraSoftwareDir (optional)
If you have several locations where you store software kits, you can specify additional paths to these software repository directories. Paths are separated by commas.
If any of the paths are network locations, then the input file must also specify the user name and password for the network system location.

osUserNameRepoService
Specify the user name for the mapped drive.

osUserPasswordRepoService
Specify the user password for the mapped drive.

Caution
There are two parameters for internal use by the repository. Do not remove Repository subscriber port and Repository publisher port. If the port specification conflicts with an existing port already in use, change the port to an unused port.

6. Run deployment_center.bat with the required -install parameter and specify the -inputFile argument.
   For example:
   
   deployment_center.bat -install -inputFile=DC_install_config.properties

7. Decide whether to participate in the Product Excellence Program. Enter Y to participate or N if you do not want to participate.

Privacy statement
The Product Excellence Program helps Siemens Digital Industries Software understand how customers use our products and assists us in improving our products. The program is anonymous and participation is voluntary.
The Product Excellence Program is designed to protect the privacy of the user and the intellectual property created through the use of Siemens Digital Industries Software products.

**How does it work?**

The Product Excellence Program is used to collect data about your installation, the features you use and how you use them. The data is sent to Siemens Digital Industries Software for analysis. By examining usage patterns from a large number of people, we gain insight into how the products are used and how to improve the software in future releases. Data collection occurs in the background as you use the software and does not affect performance or functionality.

**What data is sent?**

The data collected can vary by product and by release as we gain more insight or add new capabilities. The Product Excellence Program may collect information on the functions utilized, the operating environment (for example, OS, RAM, graphics, etc.), product version, or other indications of user interactions. This data is solely used by Siemens Digital Industries Software to improve our products and is never shared with any third party.

There is no contact information in the data and Siemens Digital Industries Software will not contact you by phone or email as a result of the data collected. Absolutely no information about the data you create or manage is collected.

**Participation is optional.**

You can review and control your participation at any time.

You can opt out of the Product Excellence Program during installation or after installation. Change your decision to join or opt out at any time.

**What does this mean for Deployment Center?**

The following table provides examples of the type of usage data that is collected by Siemens Digital Industries Software and, equally as important, clarifies what data is *not* collected by Siemens Digital Industries Software.

<table>
<thead>
<tr>
<th>What we collect</th>
<th>What we do <em>not</em> collect</th>
</tr>
</thead>
<tbody>
<tr>
<td>The data collected contains information about how</td>
<td>The data collected <em>does not</em> contain user information or intellectual property, including:</td>
</tr>
<tr>
<td>Deployment Center is deployed and used, for example:</td>
<td><em>• Contact information</em></td>
</tr>
<tr>
<td>• Deployment Center version</td>
<td>• Information about data created or managed in Deployment Center</td>
</tr>
<tr>
<td>• Client browser type and locale</td>
<td>• IT infrastructure identifiable information, including server IP addresses and host names</td>
</tr>
<tr>
<td>• Participation count</td>
<td></td>
</tr>
</tbody>
</table>

8. After the installation is complete, the script returns the URL to access Deployment Center. Record the URL to log on to Deployment Center. The URL has the form:

http://host:serverPort/deploymentcenter
The script also returns the location of the installation log file.
The installation log file also contains the Deployment Center URL. In the Deployment Center
root directory, navigate to:

```
 deployment_center\logs\deployment_center_debug_timestamp.log
```

If you experience a problem in your installation, see Troubleshoot Deployment Center installation or upgrade.

**Upgrade Deployment Center**

When you upgrade Deployment Center, all its data is preserved, including locations of software repositories and deployed environment information. Be sure to check supported upgrade paths for Deployment Center before you proceed.

**Prepare to upgrade Deployment Center**

- Stop the Deployment Center web server. Also, stop the Deployment Center service if it is running.
- Check the supported JRE version of Java and the value of JAVA_HOME. Upgrade Java if necessary.

**Upgrade Deployment Center**

1. Download the upgrade ZIP file for Deployment Center from the GTAC software Download page.
2. Extract the Deployment Center ZIP file to the server where you installed Deployment Center.
3. Open a command prompt window and navigate to the location where you extracted the Deployment Center upgrade software. Go to the deployment_center directory.
4. Create an input .properties file specifying the parameters for the Deployment Center upgrade, and place it in the deployment_center directory.

You can start with a copy of the sample file deployment_center\upgrade_config.properties, and set the input parameters and values. When you specify a path in the input file, use double backslashes \ to make the path valid for Java.

If you wish to review the current configuration for Deployment Center before upgrading, look at the deployment_center\dcs\server.properties file in your current install tree.

**Properties file parameters**

- **serverDir** (required)
  Specify the full path to the existing directory for the Deployment Center installation.

- **user** (required)
  Specify the user name for Deployment Center to validate the upgrade.

- **password** (required)
  Specify the password for the Deployment Center user to validate the upgrade.
**extraSoftwareDir** (optional)

If you have several locations where you store software kits, you can specify additional paths to these **software** repository directories. Paths are separated by commas.

If any of the paths are network locations, then the input file must also specify the user name and password for the network system location.

**osUserNameRepoService**

Specify the user name for the machine specified by the path.

**osUserPasswordRepoService**

Specify the user password for machine specified by the path.

Caution

There are two parameters for internal use by the repository. Do not remove Repository subscriber port and Repository publisher port. If the port specification conflicts with an existing port already in use, change the port to an unused port.

5. Run **deployment_center.bat** with the required **-upgrade** parameter and specify the **-inputFile** argument.
   
   For example:
   
   ```bash
   deployment_center.bat -upgrade -inputFile=DC_upgrade_config.properties
   ```

6. Choose whether to participate in the Product Excellence Program. This program anonymously shares information with Siemens Digital Industries Software about how you deploy Deployment Center software. This information assists us in improving future releases of Deployment Center. Data is collected in the background as you use the software, without affecting performance or functionality.

   Participation in the program is voluntary. If you do not want to participate, enter **N**. You can change your decision to join or opt out at any time.

   The script returns the status of the upgrade and the location of the upgrade log files. If you experience a problem in your upgrade, see Troubleshoot Deployment Center installation or upgrade.

**Participate in the Product Excellence Program**

During installation or upgrade of Deployment Center, you were offered the opportunity to participate in the Siemens Digital Industries Software Product Excellence Program. This program anonymously shares information with Siemens Digital Industries Software about how you deploy Deployment Center software. This information assists us in improving future releases of Deployment Center. Data collection occurs in the background as software is used and does not affect performance or functionality.

After installation or upgrade, you can change your participation choice. After you log on to Deployment Center, you can:
Join the program

Enter the URL:
http://dc_server:port/deploymentcenter/rest/softwaranalytics/updatesoftwareanalytics?enabled=true

Deployment Center responds that enabling participation succeeded.

Opt out of the program

Enter the URL:
http://dc_server:port/deploymentcenter/rest/softwaranalytics/updatesoftwareanalytics?enabled=false

Deployment Center responds that disabling participation succeeded.

After you confirm your request, log out of Deployment Center and log on again for the change to take effect.

Uninstalling Deployment Center

If you need to remove Deployment Center from your system, follow these directions to uninstall Deployment Center.

Gather the following information before you begin. Service names and directory locations are specified during Deployment Center installation using deployment_center.bat install script arguments. You can check for Deployment Center service names using Windows Services.

- The Deployment Center service name, which is optional. If a Deployment Center service was created during installation, it was specified using the serviceName parameter.

- The Deployment Center repository service name. This service was installed using either the default name RepositoryService or optionally specified using the repoServiceName parameter.

- The top level directory where you installed Deployment Center. The location was specified when you installed Deployment Center using the serverDir parameter.

- The Deployment Center software repository directory, which can be on a different machine. The location was specified when you installed Deployment Center using the repoDir parameter.

1. Open a command window on the server where Deployment Center is installed.

2. Stop the Deployment Center repository service:

   net stop repository_service_name

   Then delete the repository service:

   sc delete repository_service_name

3. If Deployment Center is not installed as a service, skip this step.
   If Deployment Center is installed as a service, stop it:

   net stop deployment_center_service_name

   Then delete the Deployment Center service:

   sc delete deployment_center_service_name

   After you have deleted the service, you may close the command window.
4. Delete the entire directory where you installed Deployment Center.

5. Delete the following directories from the Deployment Center software repository directory. The location was specified when you installed Deployment Center using the `repoDir` argument.
   - `dc_contributions`
   - `deploy_scripts`
   - `system`

### Troubleshoot Deployment Center installation or upgrade

If you have difficulty with installing or upgrading Deployment Center, look for log files in the location where you extracted the Deployment Center installation ZIP file:

The logs are in `deployment_center\logs`. The logon URL is available from the installation log.

- **dc_install_error.log**
  
  Provides a description of the installation or upgrade failure.

- **dc_install_debug.log**
  
  Provides detailed information about the installation or upgrade operation.

- **dc_database_upgrade_error.log**
  
  Provides a description of the database upgrade failure.

- **dc_database_upgrade_debug.log**
  
  Provides detailed information about the upgrade operation.

If the default `RepositoryService` service name or a service name specified by `repoServiceName` matches an existing service name, the installation returns an error. Check the service names on the server for conflicts. You can either change a conflicting service name or specify a different repository service name using `repoServiceName`.

Be sure you run the Deployment Center installation script from a location with no spaces or quotation marks in the path. For example, if your installation script is located in:

```
D:\DC Kits\deployment_center_2.2\deployment_center
```

you may get the following error:

```
Could not find or load main class Kits\deployment_center_2.2\deployment_center\deployment_center\jar\com.dc.jrechecker.jar

'JAVA_HOME' is set to an unsupported version of Java.
```

The `D:\DC` portion of the path is ignored. Remove the space in the path:

```
D:\DCKits\deployment_center_2.2\deployment_center
```
Start Deployment Center

Before you access the Deployment Center web application from a web browser, start the Deployment Center web server. You can choose either of the following ways:

- Automatically start the server as a service

  If you specified the `serviceName` parameter during installation, the Deployment Center web server is installed as a service and started automatically.

  The `serviceName` parameter, if specified, provides the `Services` display name. Otherwise, the service name defaults to the internal name specified by the `serviceName` parameter.

- Start the server manually

  If you did not specify the service arguments, start the Deployment Center service from its startup script. Navigate to the server directory specified by the `serverDir` parameter when you installed Deployment Center and run the `startdc.bat` script.

If you experience a problem starting Deployment Center, see Troubleshoot Deployment Center operations.

Log on to Deployment Center

1. Enter the Deployment Center URL in the web browser. The form of the URL is:

   http://host:serverPort/deploymentcenter

   `host` is the server where Deployment Center is installed.

   `serverPort` is the port number specified by the `serverPort` parameter for the Deployment Center installation script.

   **Tip**

   The URL is displayed in the command window after Deployment Center installation finished.

   The URL is also in the installation log file. In the Deployment Center directory, look for:

   deployment_center\logs\deployment_center_debug_timestamp.log

2. Enter the user name and password as specified by the `user` and `password` parameters for the Deployment Center installation script.

   The Deployment Center home page appears.
If you experience a problem in logging on to Deployment Center, see Troubleshoot Deployment Center operations.

**Troubleshoot Deployment Center operations**

You can consult log files if you have difficulty with Deployment Center operations, such as:

- Inability to log on to Deployment Center.
- Inability to add software, applications, or components to a Deployment Center environment.
- Failure to create a deployment script.
- Deployment Center operation failures such as internal server error, display problems, or missing configuration files.

Find the log files on the Deployment Center server in `deployment_center_server_dir\logs`:

- **web_server_debug.log**
  Provides a detailed description of Deployment Center operations.

- **web_server_warn.log**
  Provides a description of operation failures as well as other warnings.

- **web_server_error.log**
  Provides a description of operation failures.
• **spring_api.log**
  Provides third-party application information.

• **hibernate_api.log**
  Provides third-party application information.

### Backup and recovery procedures

You can back up key Deployment Center software files for recovery in case of a failure. You can recover from a configuration error that cannot be otherwise changed in the system. You can also recover from a database corruption.

Deployment Center installation paths and parameters are referenced in the procedures. You need to be familiar with the Deployment Center installation process. In the procedures, **DC-install-dir** is the installation path to the Deployment Center.

#### Back up the Deployment Center system

**Note**
Best practices for backup frequency are after each deployment and when you add software to Deployment Center.

1. Stop the Deployment Center server.

2. If you set up a repository service, stop the service. The service name (and display name if specified) were set when you installed Deployment Center using the **serviceName** and **serviceDName** parameters.

3. Copy these database files to a safe location:

   - `DC-install-dir\serverDir\db\deploy_center.h2.db`
   - `DC-install-dir\serverDir\db\deploy_center.trace.db`

4. Record the list of software packages you downloaded to the repository. The repository directory is set to the location specified by **repoDir** during Deployment Center installation, for example:

   - `DC-install-dir\repository\software`

   **Note**
   If you already recorded software packages and there are no changes to the repository since the last backup, you can skip this step.

5. Restart the repository service and/or start Deployment Center.

   If you encounter a problem, stop Deployment Center and the repository service and replace the database files from your backup. If that doesn't fix the problem when you restart Deployment Center, download and replace the software packages in the repository.
Reinstall Deployment Center

If your recovery is not successful, you may need to reinstall Deployment Center.

1. Stop Deployment Center, and delete the repository service.

2. Either move or rename the Deployment Center installation, in case you need to access the software directories to repopulate the repository.

3. Reinstall Deployment Center into the same location, using the same paths and ports as the original installation. To restore the database files, the repository path specified by `repoDir` must be identical to the previous installation.

4. Update the repository with the same software packages that you recorded from the previous backup. If the repository software packages are safely available from the installation that you moved or renamed, copy those files.
   Wait for Deployment Center to update and recognize the software.

5. Stop the Deployment Center server.

6. If you set up a repository service, stop the service.

7. Copy the backup database files to your current Deployment Center installation:

   \[DC-install-dir\serverDir\db\deploy_center.h2.db\]

   \[DC-install-dir\serverDir\db\deploy_center.trace.db\]

8. Restart the repository service and/or start Deployment Center.
   Deployment Center should be restored to the state it was in from the last backup.
Chapter 3: Managing repositories

Manage repositories

Deployment Center stores the software kits for your Teamcenter environment in a repository. The repository helps you determine whether you have everything you need for an installation, patch, or upgrade. To access the repositories, log on to Deployment Center and click SOFTWARE REPOSITORIES.

Specifying repository locations

Each Deployment Center repository contains a software directory that stores your unzipped software kits. The primary repository is specified by the repoDir parameter during Deployment Center installation.

You may have Teamcenter software in more than one location. You can add these locations using the extraSoftwareDir parameter. Specify the paths in the input file for Deployment Center installation or upgrade. Each specified path presumes there is a software subdirectory where unzipped software kits are stored.

If a repository is on a network drive, you can specify the location using a mapped drive.

Manage software kits

Deployment Center scans for software in unzipped subdirectories of these registered repository software directories. Deployment Center reads directories nested one level under software. These subdirectories must contain unzipped, valid software directories.

Deployment Center does not scan further than the first level subdirectories under software. Software nested under another software folder is not found. Software that is placed in another location on the server is not scanned.

Review repository contents

The Active Media tab displays information about each software kit in the Software Media table. Deployment Center refers to the base Teamcenter software as Foundation software.

Software kit information includes the name, version, release type, repository folder location, and when it was last scanned. You can see whether it's in use by a Teamcenter environment and whether it has a dependency.

Dependent software must be present to successfully choose software to install or update. If you are missing dependent software, Deployment Center displays a message explaining what you need.

If the repository scanner detects an invalid file, the repository displays the file with a message. Invalid files can be a Word or Excel document, a directory containing software not supported by Deployment Center, or a software ZIP file that is not unzipped.

The repository service scanner updates the repository list periodically, but the rate of refresh may be affected by factors such as server location and network performance.
Add or remove repository locations

You can add and remove software locations in the Deployment Center repository using `deployment_center.bat` in **maintenance mode**.

Add software kits into the repository

1. Download the software kits for the software versions that you want to deploy in your Teamcenter environment. Be sure to get the major release, the latest minor release, and any patches you want to apply to your Teamcenter environment. For example, if your target Teamcenter version is 12.3, download the Teamcenter 12 major release and the Teamcenter 12.3 minor release.

2. Unzip the software kits and copy the unzipped directories to the `software` subdirectory in one of your registered repository locations.

3. Log on to Deployment Center, and click **SOFTWARE REPOSITORIES**.
   - The **Software Repositories** page opens the **Active Media** tab of the repository and displays the **Software Media** table.

4. Check the list of software to verify that it is correct and complete for your planned deployment. Check whether missing dependencies are noted. If so, retrieve the missing software and check again. The list may take a little while to update.

If you experience a problem in adding software to the Deployment Center repository, you can try to **troubleshoot the repository service**.

Remove obsolete software kits from the repository

When a software kit is no longer being used in a registered Teamcenter environment, you can remove it from the **Active Media** list.

1. Open the **Active Media** tab to display all the registered software kits. Click the software kit you want to remove.

2. Click **Remove** on the command bar and confirm the deletion.
   - If the software is used by an environment, an error message explains that it can't be removed and which environments are using it.

The software selected for deletion is moved to the **Obsolete Media** tab. The repository scanner removes the software kit registration, and the software directory will be removed.

Update repository properties

The **Overview** tab provides helpful information about the server where the primary repository is located. The system information includes disk space, which you can monitor when you put software kits in the repository. The available and used disk space values are updated when you add or change software kits in the primary repository.

You can edit some of the repository properties.

1. Click **Start Edit**.
2. You can change the following information:
   - **Repository Name**
     Enter or update a name for the repository.
   - **Location**
     Enter or update a location for the repository server. You can use any convention you wish, such as geographical location, the name of a facility, or another value that helps you define the location.
   - **Comments**
     Enter or update information that might be helpful to an administrator.

3. Click **Save Edits**.

   To cancel your changes, click **Cancel Edits**.

### Maintaining repositories

You can update the repository software locations being used by Deployment Center. Update the repository directories using the `-maintenance` parameter of `deployment_center.bat`. You can specify whether to add or remove software locations.

**Caution**

When you add or remove software directories from the repository, be sure that no one is using the Deployment Center for any activity during the update. Deployment Center services are stopped and restarted during the update.

You must be logged to the Deployment Center server with administrator privileges.

1. Open a command prompt and run `deployment_center.bat` with the `-maintenance` parameter and specify the following arguments:
   - `-serverDir` (required)
     Specify the full path to the existing directory for the Deployment Center installation.
   - `-user` (required)
     Specify the user name for Deployment Center to validate the change.
   - `-password` (required)
     Specify the password for the Deployment Center user to validate the change.
   - `-addSoftwareDir` (optional)
     Specify additional paths to other software directories for the repository. Paths are separated by commas.
If the software path is a UNC path, also specify:

- `osUserNameRepoService`
  Specify the user name for the machine specified by the UNC path.

- `osUserPasswordRepoService`
  Specify the user password for the machine specified by the UNC path.

- `-removeSoftwareDir` (optional)
  Specify existing paths to software directories used by the repository. Paths are separated by commas.

  This action does not delete software directories; it only removes them from the repository display.

  Do not remove a directory specified as the primary repository. This is the path specified by `repoDir` during installation.

**Example**

Add a software directory to the repository list:
```
deployment_center.bat -maintenance -addSoftwareDir=X:\Foundation_software
```

Remove a software directory from the repository list:
```
deployment_center.bat -maintenance -removeSoftwareDir=X:\Foundation_software
```

**Mapping a drive to a repository**

For convenience, you may want to maintain multiple repositories on different networks that are accessible to the Deployment Center server. If so, you need to map a drive to the location using a specific method. Because Deployment Center runs as a system account, the mapped drive must be mounted using a command line script.

**Caution**

Do not use Windows Explorer to map a drive to a network repository. Deployment Center Windows services run as the system account and won't be able to use a mapped drive created in Windows Explorer.

- You need the server name, repository directory, and user name and password for the network drive you are mapping.
- You must be logged in to the Deployment Center server with administrator privileges.
- The mapped drive path must have a software subdirectory containing the software to be scanned.

1. Create a text file, such as `map_drive.bat`, on the Deployment Center server and note the location.
2. Put the following mapping commands in the batch file and save it:

```bash
@echo off
net use NETWORK_MAPPED_DRIVE: \SERVER_NAME\REPO_DIR "USER_PASSWORD"
    /USER:USER_NAME /persistent:yes > full_path_to_map_drive.log
```

For example:

```bash
net use Z: \10.145.34.22\foundation_software "Pa22w0rd"
    /USER:myplym\msmith /persistent:yes > C:\map_drive.log 2>&1
```

3. Create a scheduled task from an administrator command prompt that specifies the batch file:

```bash
schtasks /create /tr "path_and_name_of_batch_file" /tn "map_drive_task"
    /sc onstart /RU SYSTEM
```

4. Run the scheduled task you created:

```bash
schtasks /run /tn "map_drive_task"
```

5. Check for the mapped drive. If it was not created, check the log file you specified in the batch file.

### Troubleshoot the repository service

If you have difficulty with software not appearing on the Software Repositories page, you may have repository scanning issues or software file problems. The repository log files are located on the Deployment Center server in `deployment_center_server_dir\repotool\logs`:

- **media_scanner_debug.log**
  
  Provides a detailed description of Deployment Center software scanning operations.

- **media_scanner_error.log**
  
  Provides a description of software scanning operation failures.

- **tem_config_rest_service.log**
  
  Provides the communications information between the Deployment Center server and the repository scanning utility.

`deployment_script_dir\logsscanner_timestamp.log` provides information about software scanning performed during deployment.
Chapter 4: Managing Teamcenter environments

Manage environments

The Environments page lists all environments being tracked by Deployment Center. You can view, create, and delete environments. To access the list of environments, log on to Deployment Center and click ENVIRONMENTS.

Deploy software in an environment

The Deploy Software tab displays the selected software used by environments currently registered, which is necessary to proceed with deploying updates. If an environment is new, the selected software list may be empty. This is where you begin the software deployment process.

View an environment's properties

The Overview tab displays the environment's properties, such as the architecture, site, software version, applications, and components installed in the environment. Click an environment to learn more about it.

- Review the Properties for the environment.
  
  If an environment is new, the Overview displays the information used to create it.
  You can edit some environment properties.

- Review the Software, Applications Installed, and Components for an existing environment. You can click a selection to display more information in the right pane.

  If an environment is new, Software, Applications Installed, and Components may not be populated, so no Teamcenter environment information may be displayed.

Verify software, applications, and components

On the Environments page, you can review the software, applications, and components for each environment.

**Software**

You can verify the status of software for the selected environment. The list includes installed and pending software. You can select the software package to see additional software details.

**Applications Installed**

You can verify the status of applications for the selected environment. The list includes installed and pending applications. You can select an application package to see additional application details.

Applications are associated with their installed software, such as Search for Active Workspace.
Components

You can verify the status of components for the selected environment. The list includes installed and pending components. You can select the component package to see additional information about component settings. Components are associated with their applications, such as Indexing Engine and Indexer for Search.

The component information in the right pane offers two views of the information. In the upper right corner, you can choose the view:

- **Show all parameters**
  Required parameters view displays only required parameter information. Click to expand the view to display both required and optional parameters.

- **Show only required parameters**
  All parameters view displays both required and optional parameter information. Click to collapse the view to required parameters.

**Edit environment properties**

On the **Environments** page, you can edit some environment properties. Click the **Overview** tab to display the properties of the selected environment.

1. Click **Start Edit** to display the editable fields.

2. You can change the following information:
   - **Environment Name**
     Displays the name provided during setup for the environment. You can update the name for the environment.

   - **Environment Type**
     Displays the type of the environment. The available types are **Integration**, **Development**, **Production**, **Test**, and **Training**. The type is set to **Production** by default when the environment is registered, but you can select another type.

   - **Location**
     Displays the location of the environment. You can enter or update the geographical location for the environment, such as a city, the name of a facility, or another value that helps you define the location of the environment.

   - **Comments**
     Displays additional information entered by the administrator. You can enter or update information about the environment.
3. Click Save Edits.

   To cancel your changes, click Cancel Edits.

Create environments

You can create an environment for your planned deployment. When you are ready to add software to your new environment, Deployment Center displays only the versions of Available Software that are supported in a new environment.

Create an environment

1. Log on to Deployment Center, and click ENVIRONMENTS.
   The Environments page lists currently planned and registered environments.

2. On the far right below the command bar, click Add.

3. The new environment appears highlighted in the list. Choose Overview to display its information.

4. You can edit some of the properties, such as Name and Type. On the command bar:
   Click Start Edit to edit properties. To save your changes, click Save Edits.

   To cancel your changes, click Cancel Edits.

Register environments

Register your environments in Deployment Center by running the send_configuration_to_dc script on the corporate server that hosts each Teamcenter environment. If the environment is distributed across multiple servers, you must run the script on each machine that is part of the specific Teamcenter environment. The script sends configuration information about the applications and components that are currently installed to Deployment Center.

After the environment is registered, you can view its configuration information and verify the content. Deployment Center saves information about server machines deployed in your environments.

- View the machines used in deployed Teamcenter environments from the MACHINES tile on the Deployment Center home page.

- Select a machine from a list of servers when configuring components.

Caution

Before updating an existing registered Teamcenter environment, be sure that you run the send_configuration_to_dc script to update the environment information. Configuration changes performed locally on Teamcenter servers since the last time the send_configuration_to_dc script ran could be overwritten.
1. On the machine hosting the Teamcenter environment, install the supported version of the JRE and set `JAVA_HOME` to the location.

2. Open a command prompt window, and set `TC_ROOT` to the Teamcenter installation directory if it's not already set.

3. From the location where you installed Deployment Center, navigate to the `additional_tools\Teamcenter\send_configuration_to_dc` directory and find the `send_configuration_to_dc.zip` file. Copy and unzip the file. Place the extracted directory on the machine hosting the Teamcenter environment.

4. In the command prompt window on the Teamcenter host, navigate to the `send_configuration_to_dc` directory. Run `send_configuration_to_dc.bat` (Windows) or `send_configuration_to_dc.sh` (Linux or UNIX) using the following arguments. Required arguments are noted.

   `-dcurl` (required)
   Specify the URL you use to access Deployment Center.

   `-dcusername` (required)
   Specify the user name for Deployment Center as defined when installing Deployment Center.

   `-dcpassword` (required)
   Specify the password for Deployment Center as defined when installing Deployment Center.

   `-environment` (required)
   Specify a name to identify the environment being scanned. Because an environment is ordinarily identified by its site ID, this argument allows you to create a readable label that makes it easier to identify the Teamcenter environment.

   `-config` (optional)
   Specify the ID value for the configuration used when installing the Teamcenter environment. Specify this argument if multiple configurations are installed in a single `TC_ROOT` location using the TEM installer.

   For example:
   
   ```
   send_configuration_to_dc.bat -dcurl=http://dc_host:9000/deploymentcenter
   -dcusername=dcaadmin -dcpassword=dcaadmin -environment=Sandbox
   ```

   After the scan completes, the script returns the message:

   ```
   All operations completed successfully.
   ```

   If you experience a problem in registering environments with Deployment Center, see Troubleshoot registering environments.

**Remove environments**

You can remove an environment from the Environments list in Deployment Center.
1. Log on to Deployment Center, and click **ENvironments**.
   The **Environments** page lists all environments.

2. Select the environment you want to remove.

3. Click **Delete** on the command bar and confirm the deletion.

   The environment is only removed from Deployment Center tracking. The Teamcenter system remains intact.

**Troubleshoot registering environments**

You can consult log files if you have difficulty with sending an environment configuration to Deployment Center (using the **send_configuration_to_dc** script), such as:

- Sending configuration to Deployment Center fails.
- Inability to communicate with a Deployment Center server.
- Invalid credentials passed when sending environment configuration.

The registration configuration log files are located on the Teamcenter environment server in `send_configuration_to_dc_dir\logs`:

- **tem_configscanner_error_timestamp.log**
  Provides a description of environment scanning operation failures.

- **tem_configrest_service_timestamp.log**
  Provides the communications information between the Deployment Center server and the **send_configuration_to_dc** utility.

**View registered machines**

View the machines used in deployed Teamcenter environments. Select a machine name from the list to view its properties, such as operating system, disk capacity, and free disk space.

1. Log on to Deployment Center, and click **MACHINES**. The **Machines** page lists all servers used by components in deployed environments. When you select a machine, the **Overview** provides information about the server where one or more software components are installed.

2. Verify that the properties for the server machine are what you expect.

Properties for a machine from a deployed environment include:

- **Machine Name** and **IP Address**
  Identifies the machine by the server name and IP address.

- **OS** and **OS version**
Displays the operating system type and version installed on the machine.

- **Local Time**
  Displays the current date, time, and time zone at the machine’s location.

- **Disk Capacity and Disk Free**
  Displays the total disk space and the free space available. The pie chart to the right displays the same information visually.

- **Last Update**
  Displays the last time information about this server was refreshed. The information is obtained and sent by the `send_configuration_to_dc` utility.
Chapter 5: Deploying software using Deployment Center

Installation, maintenance, and upgrade strategy

You can use Deployment Center to install, upgrade, or maintain a Teamcenter environment. You can choose which scenario applies to your needs.

Install a new Teamcenter environment

You can install software into a new environment. To prepare for a new installation:

- Be sure you have a Teamcenter environment set up in Deployment Center.
  - Create a new environment if you are starting with a new Teamcenter installation.
  - Register an existing environment if you are installing new software in an existing environment. This might be the case if you are installing Active Workspace in an existing Teamcenter environment.

- Put your unzipped installation software kits in the repository. If you have an existing environment, put the software you used to install it into the repository as well.

Begin the installation by following the deployment procedure.

Maintain an existing registered Teamcenter environment

You can update software or components in an existing registered environment. Maintaining an existing registered Teamcenter environment means updating software or components for your current version, as permitted by Deployment Center. Be sure you send existing environment configuration information to Deployment Center. You must have the source software for your environment in the repository.

Upgrade or patch an existing Teamcenter environment

You can upgrade or patch software in an existing environment. Software dependencies are noted in the Deployment Center repository and in the Software deployment task. Deployment Center displays messages explaining issues with upgrade software or dependencies.

To prepare for a software upgrade or patch in an existing environment:

- Be sure you have a registered existing environment in Deployment Center before you start an upgrade.

- Be sure to send existing configuration information from the environment to Deployment Center using the send_configuration_to_dc script.

- Put your unzipped installation software kits in the repository and check for messages about dependencies.
Application deployment procedure

The Deployment Center deployment process walks you through a set of tasks that creates a Teamcenter environment and the deployment scripts containing software, application, and component information. This method shows you software and application choices, displays configuration information and parameters, and allows you to leave the user interface and return while you are entering your configuration information.

The Deployment Center user interface Deploy Software page displays each step in the deployment task bar. In each task, Deployment Center prompts you to make selections and provide information. At any time in the process, you can save your work and exit. The settings are stored in Deployment Center, and you can return to the deployment process at your convenience.

- *Dark blue* means the task is available and currently selected.
- *Medium blue* means the task is available.
- *Gray* means the task is not available yet. These tasks become available as steps within the previous tasks are completed.

Click a chevron to go to that task. You can revisit any task you previously completed to make changes. For example, if you completed the Components task, you can still return to the Applications task and make changes.

**Caution**

Before proceeding to update an existing registered Teamcenter environment, be sure that you run the `send_configuration_to_dc` script from server components to provide current environment information in Deployment Center. Configuration changes performed locally on Teamcenter servers since the last time the `send_configuration_to_dc` script ran could be overwritten.

A Teamcenter environment doesn't track mass client software installations, so this action is not necessary for clients that have been deployed in this manner for the environment.

How to deploy software

1. Open the Environments page and choose the environment where you want to install or update software. The Deploy Software page provides access to the deployment tasks.

2. **Software**

   Choose the software to install or update. The software determines the list of available applications. For example, if you choose Active Workspace software, you can install the applications it provides.

   - **Pending Install** software will be installed or updated during deployment.
   - **Pending Update** software is already installed in your environment, but it needs an update to support other selected software.
• **Installed** software is already installed in your environment and needs no updates.

3. **Options**

Choose single server or multiple server deployment for **Environment Type**.

Choose the Java or Windows architecture for **Architecture Type**.

4. **Applications**

Choose the applications. The list of available applications depends on the software selected in the **Software** task. Some applications may be automatically selected for you by default.

Each software package can have one or more applications in its bundle. Applications provide business logic, data model, work processes, and administration data for specific business uses, industries, or integrations. In this step, you do not need to know details of your network or configuration of software or hosts.

5. **Components**

Choose and configure components. Components run on the specified servers in your environment. Some components are automatically selected for you as required by the applications selected in the **Application** task. You need to configure any component that is not listed as **100%** complete.

Component status:

• **Pending Install** components will be installed during deployment.

• **Pending Update** components are already installed in your environment, but they need updates to support your selected applications.

• **Installed** components are already installed in your environment, and they don’t need any updates.

You need to know the server hosts on which components will be installed or updated, user names and passwords for the server component, and component URLs. Some components may have additional required or optional settings.

6. **Deploy**

Generate deployment scripts. This task is not available until the **Components** task is complete.

Deployment scripts contain the information you configured in Deployment Center for each of the servers in your environment. The scripts install the software, applications, and components onto each target machine in your environment.

7. **Run the deployment scripts.**

After the scripts and software ZIP files are generated, copy them to each target machine and run them.

If you are installing both server and client deployments, both types of scripts are generated. Always run server component deployment scripts before running client deployment scripts.

You can run the deployment script in diagnostic mode to determine whether your script has any errors before updating the target machine.
Maintain your environment

Deployment Center can maintain applications or components in a registered Teamcenter environment. Maintenance is making changes to your existing environment. You are not performing upgrades or applying patches. Before you perform maintenance, you must:

- Be sure you have a registered existing environment in Deployment Center before you perform maintenance on its components.
- Send existing configuration information about a registered environment to Deployment Center using the send_configuration_to_dc script.
- Put your current environment's software in the repository and check for dependencies.

Perform maintenance

The tasks for updating software or components are similar to installation:

1. Open the Environments page and choose the environment you want to maintain. Begin the Deploy Software tasks.

2. Software

Choose software from the Available Software list. The software selections determine the list of available applications that you can update. Applications that must be updated are automatically selected. The Selected Software list displays currently installed versions.

3. Options

Either single server or multiple server deployment is selected for Environment Type. If you previously had a Single Box environment, you can choose Distributed; however, you will need to update the server information for affected components.

If an environment is already deployed on multiple servers, Single Box is not available.

Architecture Type for your environment is automatically selected and can't be changed.

4. Applications

Applications that are already installed are automatically displayed. You can add applications from the list. Applications that display a Pending Install status are waiting for deployment. Applications that are installed but need updates to support your selected software display the Pending Update status.

5. Components

It's possible that a selection from the current update may cause a previously configured component to need more information, especially if you add applications or move from a Single Box environment to a Distributed environment.

Components that are not yet installed display the Pending Install status. Components that are installed but need updates to support your selected applications display the Pending Update status.

Components display the % configured. If it's less than 100%, complete the required parameter values. Components that are not impacted can be ignored (showing 100% configured).
6. **Deploy**

   Generate deployment scripts for the update. This task is available when the other tasks are complete.

   Deployment scripts contain the information you configured in Deployment Center for the selected environment.

7. **Run the deployment scripts**

   After the scripts and software ZIP files are generated, copy them to each target machine and run them.

### Upgrade or patch your environment

Deployment Center can upgrade or patch software on a registered Teamcenter environment.

Deployment Center software upgrades follow a process that is similar to installation. When you want to upgrade or patch your environment, choose the target version of software you want to apply. Deployment Center determines what to upgrade or patch based on what is required by the selected target release and selected applications.

You may not be required to put source release software kits in the repository. Deployment Center constructs source to target release mapping using the environment's current configuration files sent in the report from `send_configuration_to_dc`. Deployment Center analyzes the target release information to construct the mapping at the time you choose to upgrade. Sometimes, Deployment Center may require the source software if the target release doesn't provide adequate mapping information. If there is missing software that is required, Deployment Center displays messages telling you about the dependency and how to proceed.

Before you perform an upgrade, you must:

- Run the `send_configuration_to_dc` script on the target servers to send the latest environment configuration information to Deployment Center.

- Download, unzip, and put the software upgrade or patch kits in the Deployment Center repository. Check the repository for software dependencies and messages about missing software.

### Perform upgrades or patches

The procedure for upgrading is similar to installation.

1. Open the **Environments page** and choose the environment where you want to upgrade software. Begin the **Deploy Software** tasks.

2. **Software**

   Choose the target upgrade software from the **Available Software** list. The **Selected Software** list displays currently installed versions and latest pending versions for the environment. If the software you need is not available, check whether it was listed in the repository.

   If missing software is required, Deployment Center tells you about the dependency and how to proceed.

3. **Options**
Either single server or multiple server is selected for Environment Type. If you previously had a Single Box environment, you can choose Distributed; however, you will need to update the server information for components.

If an environment is already deployed on multiple servers, Single Box is not available.

The Architecture Type for your environment is automatically selected and can't be changed.

4. Applications

Applications that are already installed are automatically included for upgrade. You can add other applications from the list. Applications that display a Pending Install status are waiting for deployment. Applications that are installed but need updates display the Pending Update status.

5. Components

Components that are not yet installed display the Pending Install status. Components that are installed but need updates to support your selected applications display the Pending Update status.

It's possible that a selection from the current upgrade may cause a previously configured component to need more information.

Components display the % configured. If it's less than 100%, complete the required parameter values. Components that are not impacted can be ignored (showing 100% configured).

6. Deploy

Generate deployment scripts for the upgrade. This task is available when the Components task is complete.

Deployment scripts contain the information you configured in Deployment Center for the selected environment.

7. Run the deployment scripts

After the scripts and software ZIP files are generated, copy them to each target machine and run them.

Server and client deployment scripts

In Deployment Center, you install or update server software by configuring their components. You can also configure client software components for mass client software installation. You generate both server deployment scripts and client deployment scripts using the Deploy task.

Server deployment scripts

Select applications and configure the server components needed for your environment. After you run deployment scripts on the target servers, information about the target environment is sent to Deployment Center.

Server scripts must be run prior to running mass install client scripts for individual user machines. After the environment is updated, then run mass client install scripts on user machines.
If you are configuring client software as a component, such as a single installation of rich client on a specific server, this is considered a server deployment script because the deployment is for a specific server machine.

**Mass client deployment scripts**

Install and configure client software for users to run locally on individual machines. Client deployment scripts can only be created in a distributed environment. Mass client software is not machine-specific, so client deployment scripts can run on any number of machines. Client scripts do not send any information back to the Deployment Center, so the environment is not aware of which clients are installed or using it.

Multiple types of clients may be installed together with one script. Configure each type of client component and specify the same **Instance Name** for all of them. For every specified instance name, Deployment Center groups the installation scripts together and generates a single client install deployment script.

**Caution**

Server component scripts must run prior to running any mass client installation scripts for an environment.

**Tip**

If a user's machine already has a client installation and the deploy script can detect the installation path, the deploy script runs the update on the user's current client installation. If the deploy script has multiple clients but doesn't detect all the installation paths, it performs an installation If it doesn't find an installation path or an update if it finds the current installation.

**Process for deploying mass client software**

1. Client software deployment is performed as part of a **Distributed Teamcenter environment**.

2. Choose the client you want to deploy in the **Components** task. If a client supports mass user installs, the configuration panel displays a check box to enable it.

3. Enable mass client deployment and specify the required parameters. **Machine Name** is replaced by **Instance Name** for the client script. Enter a name for the current client deployment. The client component displays **(Mass Client)** in **Selected Components** as the type of client deployment.

4. Save the client component configuration and complete any remaining required component parameters.

   Client components configured for mass deployment display a status of n/a because their status is not tracked as part of a server component.

5. Generate the deployment scripts.

6. **Run the client deployment script after running any server component scripts** that were generated for the Teamcenter environment.
Client software may still be installed as part of a server component where supported.

**Software task**

In this task, select the software to install from the list of installable applications. The software you select determines the list of applications available in the Applications task. The Selected Software list displays both current and pending installations for the environment.

Selecting a minor version of software also automatically adds its underlying major version. For example, choosing the minor version Teamcenter 12.1 automatically adds the major version Teamcenter 12.0.

A selected version of Teamcenter software can make additional software available. The Available Software choices are dependent on a version compatible with the selected version of Teamcenter. For example, if Teamcenter 11.6 is selected, Active Workspace 4.1 could become available.

1. In the Software task, click Edit Selected Software to add software.

   This Available Software panel displays the software choices.

2. The Available Software panel lists software from the repository. The software status displays information about the software kit. After making your selections, click Update Selected Software to add them to Selected Software.

   If the software you need is not listed, you must add it to the repository. Add software as needed, but you may have to choose applications and configure components before deployment.

3. When your Selected Software list is complete, go to the Options task.

**Options task**

In this task, choose the deployment options for your environment.

1. Choose the Environment Type.

   • Choose Single box to install all components on a single server.

     After you define Machine Name, OS, and Teamcenter Installation Path for one of the components, those values are adopted by the other components.

     If an environment is already deployed on multiple servers, this type will not be available.
• Choose **Distributed** to install components on any server in an environment. **Machine Name**, **OS**, and **Teamcenter Installation Path** configuration values are shared only with other components that are required to be on the same server.

  This type may be selected for you if your environment is already set up as a distributed environment.

You can change the value from **Distributed** to **Single box** if an install or an update is not in progress. For configured components that are not yet installed, **Machine Name**, **OS**, and **Teamcenter Installation Path** are changed to the values specified for the corporate server component.

2. Choose **Architecture Type**.
   • Choose **Java EE** to filter component choices to the Java EE architecture.
   • Choose **.NET** to filter component choices to the Windows .NET architecture.

   If your environment already has deployed one of the architectures, the type is selected and can't be changed.

3. When your selections are complete, click **Save Environment Options** to go to the **Applications** task.

**Applications task**

**Deploy Software Overview**

1. Software
2. Options
3. Applications
4. Components
5. Deploy

**Selected Applications**

In this task, choose applications for the software you selected. The list of available applications is determined by the **Selected Software** packages. Each software package includes one or more applications as a part of its bundle. The applications contain components, which you select later in the **Components** task.

Some applications are automatically selected based on your **Selected Software**. For example, if you choose Active Workspace, the **Selected Applications** list displays the applications that are configured as required for installation.

Applications that have a **Pending Install** status are waiting for installation deployment to complete. Applications that have a **Pending Update** status are already installed but need an update to support other selections.

1. In the **Applications** task, click **Edit Selected Applications** to add applications.

   The **Available Applications** panel displays the application choices.

2. In **Available Applications**, choose the applications to install. If you choose an application that has one or more required applications associated with it, the associated applications are automatically selected. Click **Update Selected Applications** to add them to the **Selected Applications** list.
3. You can add or remove applications as long as they are not already installed. Selected applications show the Pending Install status. When your Selected Applications list is complete, go to the Components task.

**Components task**

In this task, configure components for installation. Components provide the functionality for your environment. The Selected Components list displays required components that are automatically added from the Selected Applications list. Selected Components also displays optional components that were either already installed or previously selected. You can add more optional components from the Available Components panel.

Components that have a Pending Install status are waiting for installation deployment to complete. Components that have a Pending Update status are already installed but need an update to support other selections.

Some administrative tasks require that you have server names, user names, passwords, URLs, and other information available for the deployment. The following conditions may apply during component configuration:

- If a server machine was previously deployed in another environment or is specified in the current deployment for a different component, you can select it from the Machine Name list.

- If a component has a dependency on another component that is already defined, those values are shared with dependent components. This means that the component displays some percentage of completion.

- If you have not configured a component, the state may be either Start or some percentage complete if it has a shared dependency.

- When you are defining parameter values, some fields may not be editable. For example, if the component is already deployed in an environment, some parameters can't be changed (such as Machine Name and OS).

- If you selected the Single Box environment type in the Options task:
  o Specifying a Machine Name, OS, and Teamcenter Installation Path for one component shares those values with the remaining components. If you change these values on one of the components, the changes are propagated to the other components when you save.

  o If a component is already selected or installed, it is only listed as an available component if multiple instances of that component are supported.

**Add a component**

1. In the Components task, click Add component to your environment to add components.
The **Available Components** panel displays the optional component choices.

2. In **Available Components**, select the components to install. Then click **Update Selected Components** to add them to the **Selected Components** list.

3. In **Selected Components**, the **COMPLETE** column displays the state of completion for required component settings.

4. Click a component in the list to display its parameters in the right panel. This panel initially displays only required parameters. You must enter values for settings that appear in required parameters view. You can toggle the view between required parameters and all parameters.

   **Show all parameters**

   Required parameters view displays only required parameter information. Click to expand the view to display both required and optional parameters.

   **Show only required parameters**

   All parameters view displays both required and optional parameter information. Click to collapse the view to required parameters.
5. Completing all of the required settings pushes the state to 100% complete. If you don't have all the information you need, you can save your settings at any time and return to finish them.

For example, if you are installing the corporate server, required parameters include machine name, platform, Teamcenter installation path, and administrative user information. If you expand to Show all parameters, the corporate server displays additional optional settings.

6. When you are finished entering settings, click Save Component Settings.

7. The next component that is not complete appears in the right-side panel. When all Selected Components are 100% configured, go to the Deploy task. The Deploy task is not available until the Selected Components are all complete.
Remove a component

You can remove a component from the list, provided that the component:

- Is optional.
- Has a status of **Pending Install**.

Dependent components that were added to the environment with the main component are also removed for the same server. Other components of the same type are not removed. For example, if you have two server pools, removing one server pool removes its dependents but the other server pool remains.

1. In **Selected Components**, click the component you want to remove.

2. From the command bar, click **Remove**.

   You are prompted to confirm removing the component from the list.

Deploy task

**Deploy Software**

**Overview**

1. **Software**
2. **Options**
3. **Applications**
4. **Components**
5. **Deploy**

**Generate Install Scripts**

In this task, generate deployment scripts for the components you want to install. Deployment scripts contain the information you configured in Deployment Center for the selected environment. The scripts install the software, applications, and components on to each target machine in your environment.

When the scripts are finished, the **Deploy Instructions** panel displays information about the deployment and instructions for proceeding with the deployment. You must copy the scripts to each target machine and run them to complete the installation.

1. To generate deployment scripts, click **Generate Install Scripts**.

   Deployment Center generates installation scripts, and reports information about the scripts in the right panel.
2. In the **Deploy Instructions** panel, you can view the report about the deployment, including the location of the deployment scripts and the instructions for continuing the deployment.

   - **Script Generation Date** displays the time stamp for the local date and time of script generation.
   - **Deployment Overview** describes the deployment covered by the scripts.
   - **Software To Be Installed** lists the software required to deploy the components.
   - **Software Needed For Install** lists software that is already installed on the machine but is still needed for this process to deploy other components.
• **Deploy Script Directory** displays the path to the location of the ZIP files containing the generated scripts. Go to the ZIP file directory and check for one or more ZIP files corresponding to the machines in your Teamcenter environment. Look for the **Deploy_Instructions.html** file, which contains the same information and instructions that you reviewed in the report.

• **Deploy Scripts** displays the ZIP files that were generated for each server along with the associated component names. Each ZIP file contains the installation scripts for a single server.

If all components are to be installed on the same machine, there is only one ZIP file. The ZIP file name ends with the target machine name where you run the script. For example, if the ZIP file is named `20180511_202452EDT__Sandbox_LM6W006.zip`, it runs on the LM6W006 machine. Run an installation script only on its designated machine.

3. After you determine that the scripts you need are in the directory, you can proceed with the deployment.

**Run the deployment scripts**

Generated deployment scripts are saved in the repository **deploy_scripts** subdirectory. The **repoDir** parameter of the **deployment_center.bat** installation script sets the path to the **deploy_scripts** staging location, which contains:

• **Deploy_Instructions.html**
  
  Contains information about the deployment and instructions for running your deployment scripts.

• Installation or update ZIP files

  Contain the software required to complete your deployment.

  **Caution**

  When you deploy server components on an existing Teamcenter environment using the Deployment Center application, be sure that you run the **send_configuration_to_dc** script to update the configuration information in Deployment Center before making changes. Configuration changes performed locally on Teamcenter servers since the last time the **send_configuration_to_dc** script ran could be overwritten.

1. Locate the **deploy_scripts** staging area.

   In the Deployment Center application, the **Deploy Instructions** panel of the **Deploy** task displays the path in the **Deploy Script Directory** section.

2. On the Deployment Center server, open a file explorer and navigate to the **deploy_scripts** directory.

   There may be one or more subdirectories under the **deploy_scripts** directory following the pattern:

   For both server and client deployment scripts, find:
**environment_name\install\timestamp**

*environment_name* is the name of the Teamcenter environment for your deployment.

*timestamp* is the date and time that the deployment scripts were generated.

3. Determine which subdirectory you need, and find the ZIP files and the **Deploy_Instructions.html** that you generated.

   The server ZIP files have the naming convention:

   ```
   deploy_host_name.zip
   ```

   The client ZIP files have the naming convention:

   ```
   deploy_mass_client_instance_name.zip
   ```

4. Before you run the deployment scripts, make them available to the designated machines. For server deployments in your Teamcenter environment, copy the ZIP files to a directory that is accessible to the servers in your environment using one of these methods:

   - **Copy the ZIP files directly to each server and unzip them**
     Select this method if you want to run the deployment locally on the machine. You must copy the correct ZIP file that matches each server. Be sure the server host name matches the *host_name* in the ZIP file name.

   - **Copy the ZIP files to a shared location, unzip them, and map a drive on each server**
     Select this method if you want to run the deployment from a common location accessible to all the servers in the Teamcenter environment. You must share the deployment location by mapping a drive to that location on each server.

     If you unzip on a UNIX or Linux system, be aware that path and file names are in mixed case. Avoid converting path and file names to lowercase, as paths are case sensitive on these systems. See the documentation for your ZIP utility for information.

   **Caution**
   Be sure to run server deployment scripts before running client deployment scripts for an environment.

5. Set **JAVA_HOME**.

   **JAVA_HOME** can be set to the Java JDK location or the Java JRE location.

   If you are installing the Active Workspace Client Java EE, **JAVA_HOME** must be set to the Java JDK location.

6. If a Teamcenter server manager is running, stop it.

7. Open a command prompt window and navigate to the location where you unzipped the files.

   Be sure you logged in as an Administrator or a user with administrative privileges before running the deployment script.
8. Run the **deploy.bat** (Windows) or **deploy.sh** (UNIX or Linux) script.

On a UNIX or Linux system, be sure to run the script in the KornShell (**ksh**) to avoid an error.

The **deploy** script uses the following arguments:

- **-dcusername**
  Specify the user name for Deployment Center as defined when installing Deployment Center.

- **-dcpassword**
  Specify the password for Deployment Center as defined when installing Deployment Center.

- **-diagnosticChecks** (Optional)
  Run a diagnostic validation test of the deployment. Diagnostic mode checks whether the deployment tasks in the **deploy** script can be completed successfully on the target machine. Diagnostic mode does not perform any updates during validation.

Run the deploy script in diagnostic mode to validate things like operating system and database credentials, ports, installation paths, FSC unique IDs, and so on. The log output provides success and failure information.

For client mass installation scripts, there is no server host validation as they are machine neutral.

Make any necessary corrections in Deployment Center, regenerate your deployment scripts, and run them again in diagnostic mode. Repeat until all the errors are addressed.

- **-softwareLocation**
  Specify one of the following:

  * One or more paths to software directories in the **-softwareLocation** argument. Paths are separated by commas. The software location contains the **software** subdirectories.

    For example:

    ```
    -softwareLocation=D:\deploy_software,X:\Foundation_software
    ```

  * **default**, which finds software in the registered repository directories.

  * Omit specifying a software location, and map a shared location to the M: drive on the machine where you are running the script. The software must be copied to a **software** subdirectory of the mapped drive location before running the **deploy** script.

When the installation or update is complete, the command prompt returns a success message with the location of the log files.

**Example**

On a UNIX system:

```bash
./deploy.sh -softwareLocation=/kits/
-dcusername=dadmin  -dcpassword=dadmin
```
Tip
If you have multiple Teamcenter servers in your environment, you can run deployment scripts on them in parallel. Running deployment scripts on Teamcenter servers in parallel is supported in releases 11.4 and later.

First, run the deployment script on the primary business logic server (the corporate server). Deployment Center uploads a dataset to the volume that contains key items from the TC_DATA directory, which provides the necessary information for deploying on the remaining servers. Then you can subsequently run the install or update deployment script on the rest of the servers concurrently, saving a significant amount of time.

If you experience a problem in running the deploy script, see Troubleshoot the deployment script.

Troubleshoot the deployment script

There are two types of deployment scripts, server deployment and client deployment. Log files provide information on how to address an install or update issue.

As a best practice, run deployment scripts in diagnostic mode on the target machines to validate the configuration entered in Deployment Center. Running each deployment script in diagnostic mode tests the deployment configuration without making changes to the system. No updates are made to the target machine during diagnostic validation.

Troubleshooting server component deployment scripts

Review the log files for the deploy.bat or deploy.sh scripts and check for errors. If you have errors, make the corrections using the method you used to create the deployment script,. Regenerate the deployment scripts and run them again in diagnostic mode. Repeat the cycle until all errors are addressed.

The log files are located in deployment_script_dirlogs on the Teamcenter machine where you are running deploy.bat or deploy.sh:

- **deployer_timestamp.log**
  Provides a detailed description of the deployment operation.

- **scanner_timestamp.log**
  Provides information about the software scanning performed during deployment.

Some of the more common errors you may see:

- Inability to locate the software required by the script as specified by -softwareLocation.

- Inability to communicate with a Deployment Center server.

- A deployment failure.
When the deployment script runs on a Teamcenter server, it may encounter errors that are outside the scope of Deployment Center. If an error occurs when you run deploy.bat or deploy.sh, check the log file deployer_timestamp.log:

1. Look for a section titled **Diagnostic Checks Details**, which provides validation information.

2. Look for the point of failure and check whether the error notification is followed by a path to another log file on the Teamcenter server. For example, a Business Modeler IDE error can generate its own log file, which is saved on the Teamcenter server. The path to other log files is provided in the deployer_timestamp.log.

3. If the script reports an error without an explanation, check Teamcenter server error logs, which are located in either TC_ROOT/logs or the server's temporary directory (for example, TEMP or TMP).

   In the Teamcenter error logs, look for an error that has a timestamp for approximately the same time as the error logged in deployer_timestamp.log.

**Tip**

Be sure that your environment is not running software when you deploy.

On supported AIX systems, you may see an error that a file can’t be overwritten because it's associated with a running process. Change the permissions on the file to write (755), and you can complete the deployment.
Chapter 6: How to deploy the Business Modeler IDE templates on Teamcenter

Deploy Business Modeler IDE packages

Users can generate a Business Modeler IDE template package in Teamcenter 11.3 or later that can be deployed to Teamcenter environments using either Deployment Center or Teamcenter Environment Manager (TEM). This consolidated output directory contains templates, libraries, and deployment configuration files.

To deploy a Business Modeler IDE template package, obtain the directory of the template package output generated by the Business Modeler IDE. Place the Business Modeler IDE output directory in the software subdirectory of the Deployment Center repository.

To ensure you have a supported template package, check:

• Directory naming convention

  `template-internal-name_OS_template-version_build-version_YYYY_MM_DD_HH-MM-SS`

  An optional template version may be assigned by the Business Modeler IDE user to track the versions of a template package. If the Business Modeler IDE user assigns a build number, the template is in development. The build version tracks iterative testing before the template is ready for production. Template versions and build versions are expressed as integers separated by periods, up to four places.

• artifacts subdirectory

  Contains the template software ZIP files for deployment.

• dc_contributions subdirectory

  Contains the template bundle information (called packages) for deployment by Deployment Center. If you use TEM, this directory is ignored.

• tem_contributions subdirectory

  Contains the template bundle information for deployment by TEM. If you use Deployment Center, this directory is ignored.

• media_teamcenter_template-package-name.xml file

  Provides the application names to both TEM and Deployment Center for deployment.

The Deployment Center repository displays Dependencies as specified within Business Modeler IDE packages using package IDs.

For information on creating and updating Business Modeler IDE packages, refer to the Business Modeler IDE documentation included with Teamcenter.
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