



Windchill® Upgrade Guide

Windchill 9.0

Arbortext® Content Manager™

Pro/INTRALINK® 9.0

Windchill® PDMLink™

Windchill® ProjectLink™

June 2008

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Change Record

Table 1 Changes for 9.0 M040

Chapter	Description
Chapter 1, Planning an Upgrade	Updated graphics in for the upgrade process.
Chapter 3, Setting Up the Target System for Upgrade	Updated the wording of the section titled "Install the Target System."
Chapter 6, Configuring the Target System to Use the Source Data	Updated graphics in for the upgrade process.

Table 2 Changes for 9.0 M030

Chapter	Description
Chapter 5, Executing the Pre-upgrade Utilities	Removed the manual steps for using the Federatable Cleanup Utility since they were automated with the Upgrade Manager.

Table 3 Changes for 9.0 M020

Chapter	Description
Chapter 8, Performing Post-upgrade Steps	Added the section titled Post Upgrade Steps for Windchill Integration for Rational ClearCase .
Appendix C, Part Creation for Migrated Data	Added this appendix.
Appendix F, Purging Audit Log Data	Added this appendix.

About This Guide

The *Windchill Upgrade Guide* describes how to upgrade the database schema on an existing Windchill installation to a new release, and then migrate its persistent data. This guide is intended for technical staff members who are experienced in application installations and familiar with the installation hardware system.

Related Documentation

The following documentation may be helpful:

- *Windchill Installation and Configuration Guide*
- *Windchill Business Administrator's Guide*
- *Windchill System Administrator's Guide*
- *Windchill Rehost Guide*
- *Windchill Customizer's Guide*
- *Windchill Diagnostic Utility Guide*

If books are not installed on your system, see your system administrator.

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<http://www.ptc.com/support/index.htm>

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1

Planning an Upgrade

This chapter gives an overview of the upgrade process. It should be used as the basis for planning your Windchill solution upgrade. For further guidance on organizing and executing an upgrade project, see Appendix A, Upgrade Considerations

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Supported Upgrade Paths	1-2
Installing Multiple Interoperable Target Windchill Solutions	1-2
Assumptions and Prerequisites for an Upgrade	1-3
The Overall Upgrade Process	1-4
Summary	1-12

Supported Upgrade Paths

The following upgrade paths are possible:

- Windchill PDMLink 7.0 to Windchill PDMLink 9.0
- Windchill ProjectLink 7.0 to Windchill ProjectLink 9.0
- Integral Windchill PDMLink and Windchill ProjectLink 7.0 to Integral Windchill PDMLink and Windchill ProjectLink 9.0
- Windchill PDMLink 8.0 to Windchill PDMLink 9.0
- Windchill ProjectLink 8.0 to Windchill ProjectLink 9.0
- Integral Windchill PDMLink and Windchill ProjectLink 8.0 to Integral Windchill PDMLink and Windchill ProjectLink 9.0
- Pro/INTRALINK 8.0 to Pro/INTRALINK 9.0
- Arbortext Content Manager 8.0 to Arbortext Content Manager 9.0

For information on supported upgrade paths, refer to the [Windchill Supported Upgrade Paths](#) document available from the PTC Reference Documents site. From the drop-down menus, select the following:

Product: Windchill

Release: <Your Target release>

Document Type: Upgrade Guide

User Roles: All User Roles

Installing Multiple Interoperable Target Windchill Solutions

Support for installation and interoperation of multiple Windchill solutions is present in the current release. However, there is no support for upgrading a source system with only one Windchill solution installed to a target environment with multiple solutions installed. If you plan to install multiple interoperable Windchill solutions in your target environment but have only one solution installed on your source system, you will need to do the following:

1. Upgrade from your source system to target system with the single Windchill solution installed on the target.
2. Install the second Windchill solution on your upgraded target system.

For example, if you have an earlier release of Windchill PDMLink and plan to upgrade to Windchill PDMLink 9.0, but you also plan to install Windchill ProjectLink 9.0, you need to successfully upgrade to Windchill PDMLink 9.0 before installing Windchill ProjectLink 9.0.

Assumptions and Prerequisites for an Upgrade

Before proceeding, review the following assumptions and prerequisites:

- You must use the most recent version of this document to guide you through the upgrade process. Download the most up-to-date version of the *Windchill Upgrade Guide* from the following location on the PTC Web site:

<http://www.ptc.com/appserver/cs/doc/refdoc.jsp>

- You have reviewed the Known Issues documented in technical application note (TAN) #138966. Search the TAN Knowledge Base at the following location:

<http://www.ptc.com/support/index.htm>

- The database instance being used before upgrade is the same instance that will be used during and after the upgrade (the database instance will be upgraded "in-place").

The rationale for this is that the size of most production databases is large enough that the data can be upgraded in-place much faster than it can be exported, modified to match the new schema, and loaded in to a new instance.

- You must upgrade to the proper versions of Oracle and Aphelion verified with 9.0 if you have not already done so.
- You will have access to a database and LDAP instance containing data from the same release that your production system is running. This data will be representative of your production installation's data and will be used for testing the upgrade process by upgrading it with your test installation before upgrading your database.
- You will back up your database and LDAP instances before upgrading them.
- A model-oriented approach using Rational Rose was used for customization of the data model. Introspection information is used to help determine what must be upgraded. If that information is not available (that is, it is not modeled), your non-modeled customizations will not be upgraded.
- New customizations should not be done in the midst of a Windchill solution upgrade project.
- Your site-specific customized code resides outside the wt, com.ptc, and com.infoengine packages (it is acceptable to have customizations of resource bundles that reside under these packages).
- Any customized properties must be added and updated using the site.xconf file as recommended in the *Windchill Customizer's Guide*.
- You should not perform an upgrade on a different host from the one on which the upgraded system is expected to run; for example, you should not upgrade your production system from a developer's machine.

- There are changes in the support and upgrade requirements for Pro/INTRALINK Gateway. See the chapter [Changes for This Release](#) for details.
- Any customized properties have been added and updated using the site.xconf file as recommended in the *Windchill Customizer's Guide*.
- The test upgrade should be performed on one server that contains both a test source installation and a test target installation.

The Overall Upgrade Process

This chapter is presented in small, manageable steps, emphasizing an incremental approach that results in an upgraded production system. You cannot accelerate the process by skipping steps or working outside the scope of each step; in fact, doing so may make it more difficult to recover if problems occur. The Windchill upgrade process requires care in planning a number of steps. PTC recommends that you treat each of the following phases as distinct milestones, each of which should be successfully completed independently of the others.

It is important that you test the upgrade process end-to-end to identify any unforeseen issues before attempting the upgrade on your production data. PTC recommends that you perform several iterations of test upgrades until you are comfortable with the process. Only then should you upgrade your production system.

Performing Practice Upgrades

The following is an overview of what a practice upgrade entails. The following chapters provide a much more detailed checklist of the how to perform an upgrade.

Set Up a Test Source System for Upgrade

1. Install Test Source and Deploy Customizations

Install and configure a source Windchill solution along with all the third-party components, to duplicate your production system, on a test system. Deploy any customizations that you have made on your production system onto the test installation. This system, used as part of the test system, is called the test source installation.

Refer to the *Windchill Installation and Configuration Guide* and the *Windchill Customizer's Guide* for your source Windchill release for more information on this process.

2. Set Up Data on Test Source

Identify the relational database, LDAP data, and vault content with which you plan to test your upgrade. This data should be representative of the type of data you plan to upgrade in your production system.

For your early testing, prepare a sample set of data to test the upgrade process. Once you have successfully upgraded the small sample data set, then you are ready to practice the upgrade process with larger data sets that are representative of your production data (with synchronized copies of your production system's database, LDAP, and vault content). Refer to the *Windchill Rehost Guide* for more information on this process.

3. Verify Test Source

Verify the successful operation of the source system. Check for any errors or warnings on each page. Exercise any use cases that are of particular importance in your usage of Windchill.

Set Up a Test Target System for Upgrade

1. Install Test Target and Deploy Customizations

Install and configure a target Windchill solution along with all the third-party components, to duplicate your production system, on a test system. This system, used as part of the test system, is called the test target installation.

Refer to the Windchill Installation and Configuration Guide, *Windchill System Administrator's Guide*, *Windchill Business Administrator's Guide* and the *Windchill Customizer's Guide* for the target Windchill release for more information on this process.

If you customized your old Windchill solution, now known as your "source system," the next step is to incorporate those customizations into the target installation from the previous step.

This may be a time-consuming task depending on the degree of customization that you performed to your source system. While PTC attempts to provide backward compatibility wherever possible, the functionality used by your customizations may be superseded in a newer release. This may require you to rework some of your customizations to be compatible with 9.0. To review areas that have changed in 9.0, refer to the [Changes for This Release](#) section.

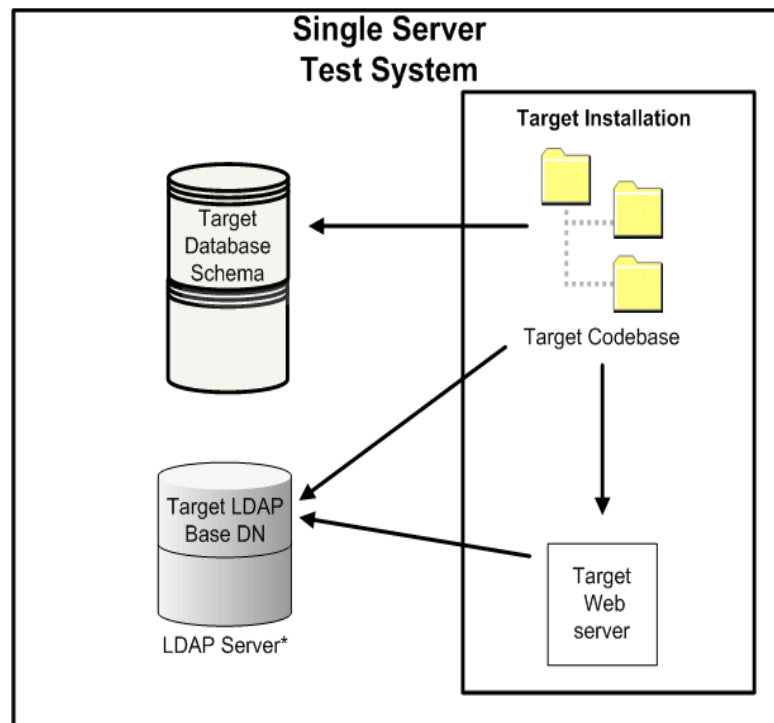
Reimplementing your customizations to utilize new capabilities provided with 9.0 might complicate the process of upgrading your system.

PTC recommends that, in this step, you change your customizations as little as possible to make them function correctly with your test installation before proceeding. If you want to take advantage of new capabilities provided in 9.0, treat this development activity as a separate project from the upgrade to 9.0 and plan to do it after you complete your upgrade project.

2. Verify Test Target

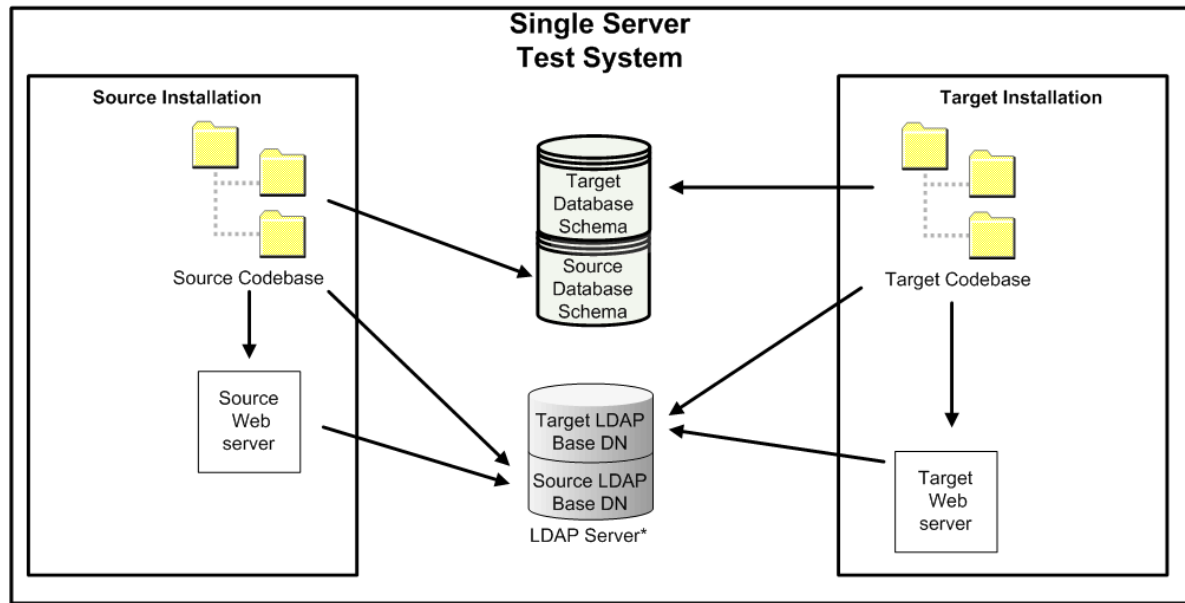
Do not proceed until you have thoroughly tested the functionality of your test installation with customizations and are confident that it functions consistently with your test source system.

Use the following to visualize your test target system:



* The LDAP Server in these diagrams only represents a basic LDAP configuration, such as one supplied by PTC.

With the source and target systems both in place, your overall test system now looks as follows:



* The LDAP Server in these diagrams only represents a basic LDAP configuration, such as one supplied by PTC.

Run Pre-upgrade Processes On Test Source and Target Systems

There are several steps that you need to take on the source and target systems to prepare them for the upgrade. These include:

- Executing Windchill utilities to check for and possibly fix problematic data that could cause the upgrade process to fail.
- Executing Windchill Diagnostic Utility (WinDu) tasks. For more information on WinDu tasks, refer to the following:

<http://download.ptc.com/download2/products/WNC/WinDU/readme/WinDuGuide.pdf>

- Performing manual actions to modify files and data.
- Setting certain properties on the target system to reconfigure it from its out-of-the-box settings.

Further details on these steps are provided in Chapter 5, "Running the Pre-upgrade Utilities."

Configure the Test Target to Use the Test Source Data

The Upgrade Manager does not export data from your source database and import it into new databases. Instead, you first configure your target system to run against the database and LDAP instances that are used by the source system.

Subsequently, when you execute the Upgrade Manager, it connects through the target system to these instances, upgrades their schemas, and then rearranges data as necessary, to make the database and LDAP compatible with the new release.

The following summarizes the steps you need to take to configure your target system to run against the source database and LDAP instances.

1. Export the Windchill Release 9.0 LDAP configuration information from the target system LDAP instance.
2. Configure the target installation's codebase to reference the source database.
3. Configure the target installation's codebase to reference the source LDAP.
4. Import the Windchill Release 9.0 LDAP configuration information (exported from the target system LDAP in Step 1) into the source LDAP.
5. Configure the target installation's Web server to use the source LDAP for authentication.

A detailed explanation of these steps is given in Chapter , "Configuring the Target System to Use the Source System Data."

Run the Upgrade Manager Using the Test System

PTC provides a utility called the Upgrade Manager. This utility guides you through the following actions, providing reports that assist you if problems arise:

- Compare the test database's schema to the persistent metamodel of your test installation that is recorded in the introspection information of your Windchill solution.
- Alter the schema of the test source database so that it is compatible with the test target installation's metamodel.
- Rearrange the existing data in the test source database and test source LDAP instance so that data is in the proper location for use by the target solution.
- Load new, essential data for the upgraded system to function properly.

This step takes several hours, depending upon factors such as database size, CPU speed, memory availability of all hosts involved, and network performance (if you are using separate hosts for your database test installation).

To accurately gauge the time commitment that you need to make for upgrading the production system, it is best if the topology of your test installation's environment and the contents of your test source database and test source LDAP instance closely match that of your production system.

Verify the Upgraded Test Target System

Confirm that the upgraded test target system functions as expected. Execute test cases to verify that customizations and new release features are functioning.

Performing the Production Upgrade

Upgrading your production installation is fundamentally the same as upgrading your test system. The main difference is that you are upgrading production data and you must take the production system offline. Therefore, do not begin this step until you:

- Have successfully performed all of the steps of upgrade process in the test environment.
- Have verified that your production installation's users can continue their jobs using an upgraded system.
- Have backups of your production database and LDAP instance that you trust you can restore and these backups are stored on separate media.
- Plan sufficient production system downtime to perform the upgrade. If you have practiced the upgrade with data representative of your production environment, you will be well-prepared to estimate the needed downtime.

Set Up the Production Target System for Upgrade

Install the target Windchill solution on your production host. The production installation should be nearly identical to the test target installation differing only in the configuration settings for:

- hostnames/ports - using production environment hosts for the various servers such as servlet runner, web server, server manager, database server LDAP server
- Web server aliases
- distinguished names of LDAP entries
- verbosity and logging settings - presumably you want the verbosity of your logs to be lower in production than they might be in development or testing

There are several ways to establish this deployed production installation. The details of each are outside the scope of this document, particularly since many customers deploy on different types of servers than those they test and develop on. For assistance with installation and deployment, consult the Windchill Installation and Configuration Guide.

Prepare the Production Source System for Upgrade

1. Take Production Source Offline

Make the production system unavailable to users so that no more changes are made to the database and LDAP instance.

2. Prepare Windchill Queues for Upgrade

Before upgrading your Windchill Solution, you should have a strategy for your Windchill queues. We recommend letting your queues run to completion.

However, if this is not possible, you can upgrade your queues. Prior to upgrading your queues, it is highly recommended that you run the evolvability diagnostic utility, described in technical point of interest (TPI) 124935, against your existing queues entries. This detects if you have any issues associated with upgrading serialized queue entries. While such issues are rare, they can be difficult and time-consuming to diagnose and correct. It is important to detect serialized object evolution issues early in an upgrade process to minimize the risk of delays.

The following is a link to the evolvability diagnostic utility (EDU):

<http://www.ptc.com/cs/doc/EDU.htm>

3. Backup the Production Database and LDAP Instance

Ensure that you make synchronized backups of your production database, LDAP instance, and vault content from which you can restore the information, if needed.

Run Pre-upgrade Utilities on Production Source and Target Systems

There are several steps that you need to take on the source and target systems to prepare them for the upgrade. These include:

- Executing Windchill utilities to check for and possibly fix problematic data that could cause the upgrade process to fail
- Executing Windchill Diagnostic Utility (WinDu) tasks
- Performing manual actions to modify files and data
- Setting certain properties on the target system to reconfigure it from its out-of-the-box settings.

Further details on these steps are provided in Chapter 5, "Running the Pre-upgrade Utilities."

Configure the Production Target to use the Production Source Data

The Upgrade Manager does not export data from your source database and import it into new databases. Instead, you first configure your target system to run against the database and LDAP instances that are used by the source system.

Subsequently, when you execute the Upgrade Manager, it connects through the target system to these instances, upgrades their schemas, and then rearranges data as necessary, to make the database and LDAP compatible with the new release.

The following summarizes the steps you need to take to configure your target system to run against the source database and LDAP instances.

1. Export the Windchill Release 9.0 LDAP configuration information from the target system LDAP instance.
2. Configure the target installation's codebase to reference the source database.
3. Configure the target installation's codebase to reference the source LDAP.
4. Import the Windchill Release 9.0 LDAP configuration information (exported from the target system LDAP in Step 1) into the source LDAP.
5. Configure the target installation's Web server to use the source LDAP for authentication.

A detailed explanation of these steps is given in Chapter , "Configuring the Target System to Use the Source System Data."

Run the Upgrade Manager Using the Production System

The details of this process are the same as for the practice upgrade using the test installation (see Run the Upgrade Manager).

Verify the Upgraded Production Target System

Confirm that the upgraded production target system functions as expected. Perform a thorough test of your upgraded system, taking care not to modify critical production data.

Upgrading a Multi-site Environment that Includes a Master Site and Multiple Replica Sites

If you are upgrading a site that includes a master site and multiple replica sites, use the following as a guide:

1. On the master site, perform the following:
 - a. Delete all content replication schedules, except the ones which are currently in the running/executing state.
 - b. Wait for the running schedules to complete, and then delete them as well.
 - c. Check the following queues and make sure there are no objects in them:
 - replQueue
 - router3.*N*

Where *N* is 1, 2, 3, etcetera.

2. Shut down all the Windchill sites.
3. Upgrade the master site as needed.
4. On a master site only, when the upgrade of the master is complete, regenerate the security keys.

Note: This step is unnecessary if upgrading from 7.0 M010 or newer installations.

5. Download the new key and propagate it. For a full replica, import the security key in the same way it was done during installation. For a lightweight replica, place the security key in the place of the old one.

Note: This step is unnecessary if upgrading from 7.0 M010 or newer installations.

6. Upgrade the replica sites so they are all at the same release level with the master site. For a full replica, perform the same upgrade procedure as the master site. For a lightweight replica, the new installation serves as the upgrade.

Note: Upgrading the existing replica installation may happen to the same location or a different location on the same machine as long as the replica site is reachable from the master through the same URL as before the upgrade. For this reason, placing a release level identifier into the replica URL is not advisable.

The locations of the replica folders must not be changed during upgrade. The files that are stored there are user-uploaded content referenced from the master site. These files were accessible to Windchill before the upgrade and must be accessible after the upgrade. These files are indifferent to the release level of the installation. When the upgraded replica starts, it will ask the master site for the local storage locations. The master site will provide the locations, which will still be correct, unless the folders were moved during the upgrade.

7. Start up the replica sites and make sure that Master site is able to broadcast configurations to the replica sites.
8. Re-create the replication schedules for the replica sites.
9. After the upgrade is done, data on replica site is valid and only data that has not been replicated should be pushed to the replica sites.

Summary

The process in this chapter explains, at a high level, the activities that must take place to perform an upgrade. Use it as a prototype for planning your upgrade project.

2

Setting Up a Test Source System for Upgrade

This chapter describes how to set up your source system for upgrade. This procedure applies only to setting up a test source for a practice upgrade. For an overview of the entire upgrade process, consult the chapter Planning an Upgrade.

Topic	Page
Install the Source System	2-2
Deploy Customizations on the Source System.....	2-2
Set Up Data on the Test Source.....	2-2
Verify the Test Source.....	2-2
Summary Checklist	2-3

Install the Source System

Install the Windchill and third-party software components that compose your existing production system onto your source test system. This will include:

- a Java development kit,
- a relational database such as Oracle,
- an LDAP server such as Aphelion,
- an Apache web server
- Tomcat servlet engine
- Info*Engine
- Windchill solutions and modules
- Any necessary patches

See the Windchill Installation and Configuration Guide for further information and instructions. When you have completed installation, you should open a Windchill shell and run the following command:

```
> windchill version
```

This resulting report will allow you to check that the required components have been successfully installed.

Deploy Customizations on the Source System

Replicate the customizations from your production system onto the source installation following the processes that are already in place at your site.

Set Up Data on the Test Source

The procedure you use to set up the data on your test source system is beyond the scope of this document. For example, if you decide to create a copy of your production data and rehost it to your test source system, you must follow the procedures described in the *Windchill Rehost Guide*.

Verify the Test Source

Verify the successful operation of the source system. Check for any errors or warnings on each page. Exercise any use cases that are of particular importance in your usage of Windchill.

Summary Checklist

This checklist summarizes the steps, described in this chapter, to set up a test source system for upgrade.

- ☐ Install the third party applications like Oracle, Java, and Aphelion if applicable on the test system.
- ☐ Install Apache, Tomcat, and Info*Engine.
- ☐ Install all of the necessary Windchill solutions and optional products. This should include Windchill Information Modeler if you will be deploying modeled customizations on the test source system.
- ☐ Install the equivalent release/maintenance release and patches.
- ☐ Run windchill version to confirm that all the required components are reported as installed.
- ☐ Deploy your production customizations onto the test source system.
- ☐ Set up the data on your test source system.
- ☐ Verify the successful operation of the source system. Check for any errors/warnings on each page.
- ☐ Check the method server log for any errors or warnings.

3

Setting Up the Target System for Upgrade

This chapter describes how to set up your target system for an upgrade. For an overview of the entire upgrade process, consult the chapter Planning an Upgrade.

Topic	Page
Install the Target System.....	3-2
Incorporate Customizations into the Test Target	3-2
Install Language Files	3-6
Preparing the Target System for a Workgroup Manager Upgrade	3-8
Verify the Target System	3-9
Summary Checklist	3-9

Install the Target System

1. Install the third party applications like Oracle, Java and Aphelion on the test system. Use the PTC Solution Installer's (PSI) option to "Configure to an existing instance" for Aphelion. You will need to create a new Base DN for the target installation on subsequent screens for this test installation. You also need to select "Create a new user on an existing database" or "Configure to an existing user on an existing database" for your target database installation. If you chose the latter, you'll need to create the database user for the target installation before running PSI.
2. Install all of the necessary Windchill solutions and optional products. The Windchill solution installation must include Apache, Tomcat, Info*Engine, and Windchill Services. This should also include Windchill Information Modeler if you will be deploying modeled customizations on the test source system.
3. Apply the latest patches and maintenance releases, if applicable.
4. Run windchill version to confirm that all the required components are reported as installed.
5. Verify the successful operation of the target system. Check for any errors or warnings on each page.
6. Check the method server log for any errors or warnings.

Incorporate Customizations into the Test Target

This section describes the process of incorporating customizations into the test target system.

Customized Properties

If you have added or customized any properties in your source system, you should have done so using site.xconf as recommended in the *Windchill Customizer's Guide*. To incorporate these into your target system, perform the following steps:

- Copy any entries in your source site.xconf that you have added or customized, and add them to your target site.xconf.
- Copy any XCONF files that you added to your source system, and put them in their equivalent locations in your target system.

For further details on applying customizations to the target system, refer to the *Windchill Customizer's Guide*.

Model and Source Code Customizations

The following instructions will help you incorporate your model and source code customizations into the test target installation. When this is done, you can create a

new database from the regenerated Data Definition Language (DDL), and load data into it to establish a basic functional installation with customizations.

1. If you have not done so already, install and configure Windchill Information Modeler into your Windchill solution.
2. Locate the following customization files from your source system:
 - Object model components (typically MDL and CAT files)
 - System files (for example, Java property files, icon and image files, and HTML files)
 - Source code (for example, Java classes and C files)
 - Hand-implemented SQL scripts
 - Resource bundles
3. Back up all of these files to a separate storage medium.
4. Copy all of these files into a corresponding location in your new target installation.
5. Within Rational Rose, upgrade the customized object model in the test installation. For further instructions, select Help > Windchill Help > Upgrade from a Previous Release of Windchill from within Rational Rose.
6. Upgrade the customized source code dependent on deprecated components in the test installation. For further instructions, see *Dealing with Deprecated APIs*.
7. Generate the customized object model components using the system generator (javagen) from the command line of the test installation or from Rational Rose.
8. Compile the generated source code for the customized object model components using a Java compiler from JDK or an IDE.
9. Create a new database user to own the database and load the DDL for the database. This DDL should include declarations of schema objects for storing your custom objects. Consult the *Windchill Installation and Configuration Guide - Advanced* for more details on creating users in Oracle and creating databases.
10. Use the windchill wt.load.WindchillLoader command with options of your choice to load the initial dataset for this new database.
11. Start the Windchill server manager and method server, and perform a basic system health check to verify that the test installation functions without errors now that your customizations have been incorporated.

For further details on applying customizations to the target system, refer to the *Windchill Customizer's Guide*.

Dealing with Deprecated APIs

With each new release, PTC deprecates some APIs. A deprecation is a Java class, method, or field (that is, an API) that has been marked with the `@deprecated` tag. This tag indicates that the deprecation has been superseded by a new class, method, or field, respectively. If your customizations depend upon APIs that PTC has deprecated, deprecation warnings appear as you compile them.

PTC recommends that, as part of the upgrade process, you eliminate the deprecated API with its superseding APIs to fix all source code.

To fix the source code that depends on deprecations, perform the following steps for every customized Java package until all use of deprecations is eliminated:

1. Compile a customized Java package source code to report deprecated warnings.
 - a. For each deprecation, find the dependent Javadoc HTML page of the Java class and identify the replacement of the deprecated item.
 - b. Edit your customized Java class to use the replacement of the deprecated item.
 - c. Repeat steps a and b until all reported deprecations are fixed in the Java package.
2. Repeat the entire process until the Java package recompiles without any deprecation warnings.

Supported API Changes

A detailed enumeration of all changes to the supported APIs that Windchill solutions provide is available for the current release. This documentation can be found by navigating to the following URL on the web server where your target solution is installed:

```
http://<host:port>/<WindchillAlias>/wt/clients/library/sapi_changes.html
```

For further information, refer to the Changes for This Release chapter.

Transforming Customized DCA Configuration Files (Upgrading from 7.0 Only)

This section describes how to upgrade customized DCA configuration files on the source system to prevent regressions in existing DCA user interfaces. These instructions apply only if your source system is release 7.0.

Steps 1 through 4 need to be performed on the source system in preparation to move the customized DCA files. Perform the following procedure:

1. Identify the directories in your source system that contain all of the custom DCA configuration files.

By default, they are located under `<Windchill>/conf/dca`. By PTC convention, custom DCA configuration files are located under a site-specific directory. For instance, all of your DCA configuration files should be located, by default, under `<Windchill>/conf/dca/com/<your_company>`.

2. If your customized DCA configuration files are located under a common directory, proceed to [step 4](#). Otherwise, if they are in numerous directories without any common root, then run the following command in a Windchill shell:

```
> windchill com.ptc.core.ca.upgrade.WriteManifestXMLFile \
<Windchill>/conf/dca
```

This Java program creates a `<Windchill>/conf/dca/manifest.xml` file that lists all of the directories that contain customized DCA configuration files.

3. Edit the manifest XML file to remove entries of directories that you want to exclude from the transformations by either deleting the entries or commenting them out. Use the manifest XML file as input for subsequent commands to indicate the directory locations of XML files that need to be transformed.
4. Once you have identified where your customized DCA configuration files are located, transform the XML files contained within those directories in two ways:
 - a. The first XSL/T transformation adds a child-deprecated element and subelements to all immediate child elements of the context element. This transformation is done to deprecate those elements and their children so that if there are any ID conflicts with newly installed DCA configuration files, then the deprecated ones are found by DCA first and used, but only when the second transformation is applied.

The following is an example of an action element that is deprecated:

```
<Action id="action.createPart" needSelection="false">
  <Deprecated>
    <Replacement ref="..." />
    <Comment value="..." />
  </Deprecated>
  <Extend ref="windchill:action.newTemporaryFrame" />
  <Image resource=".../part_create.gif" />
  <Label resource="Create Part" />
  <Location ref="...part:simpleFrame.createClerk" />
  <ToolTip resource="Create Part" />
</Action>
```

- b. The second XSL/T transform adds a `needDeprecated` attribute to any `SimpleFrame` or `CompositeFrame` element. This transform is done to enable a DCA frame to include deprecated elements in favor of another non-deprecated element with the same ID. This allows for zero regressions in an existing DCA user interface where only the deprecated elements that are in conflict with non-deprecated elements are found and used.

The following is an example of a SimpleFrame element that has a needDeprecated attribute added to it:

```
<SimpleFrame id="simpleFrame.search.all"
needDeprecated="true">
```

To perform both of these transformations using a manifest XML file, run the following commands:

```
> windchill
com.ptc.core.ca.upgrade.RecursivelyUpgradeConfigurations \
<Windchill>/conf/dca/manifest.xml \
<Windchill>/codebase/wtcore/xsl/com/ptc/core/ca/upgrade/ \
AddDeprecationElement.xsl

> windchill
com.ptc.core.ca.upgrade.RecursivelyUpgradeConfigurations \
<Windchill>/conf/dca/manifest.xml \
<Windchill>/codebase/wtcore/xsl/com/ptc/core/ca/upgrade/ \
AddDeprecationAttribute.xsl
```

To perform both of these transformations for a root directory containing all custom DCA configuration files, run the following commands:

```
> windchill
com.ptc.core.ca.upgrade.RecursivelyUpgradeConfigurations \
<Windchill>/conf/dca/com/<your company or site> \
<Windchill>/codebase/wtcore/xsl/com/ptc/core/ca/upgrade/ \
AddDeprecationElement.xsl

> windchill
com.ptc.core.ca.upgrade.RecursivelyUpgradeConfigurations \
<Windchill>/conf/dca/com/<your company or site> \
<Windchill>/codebase/wtcore/xsl/com/ptc/core/ca/upgrade/ \
AddDeprecationAttribute.xsl
```

5. All the transformed DCA files need to be copied from the source system to the same location on the target system. Before copying the configurations onto the target system, it is always recommended to backup the original configurations.
6. After upgrading all the customized DCA Configuration files, remove the manifest XML file if its generated inside any of the directories under <Windchill>\conf\dca.

Install Language Files

This section describes the steps you must perform to use localized files. For more information, refer to the chapter titled Installing Language Files in the *Windchill Installation and Configuration Guide*.

Change the Load Set for Localized Data

By PTC convention, localized files include a locale extension. The locale extension is appended to the file name, but precedes the file type extension, for example, lifecycleInitRule_ja.xml. In this example, "_ja" is the locale extension.

There are specific load set files that must be used when loading localized data. In this step, you will edit the load set files to change the specified file name strings to point to the localized version of the file. Use the following table as a reference:

Locale	Extension Value
Simplified Chinese	_zh_CN
Traditional Chinese	_zh_TW
French	_fr
German	_de
Italian	_it
Japanese	_ja
Korean	_ko
Spanish	_es

Table 1 PTC Locale Extensions

Complete the following instructions to configure the load sets to support localized data.

Windchill Services - All Windchill Solutions

There are no instructions common to all Windchill solutions.

Windchill PDMLink

These instructions apply to Windchill PDMLink (upgrades from release 7.0 only):

1. Edit the
`<windchill>/codebase/com/ptc/windchill/pdmlink/load/MigrateR7toR8PDM
Link.xml` load set file.
2. Locate the following filename strings listed in the
`<windchill>/codebase/com/ptc/windchill/pdmlink/load/MigrateR7toR8PDM
Link.xml` Load Files table and append the locale extension for the locale of the data being loaded. Japanese locale is used as the locale extension example in the
`<windchill>/codebase/com/ptc/windchill/pdmlink/load/MigrateR7toR8PDM
Link.xml` Load Files table. The PTC Locale Extensions table lists the locale extension values supported with this release. Use the information in this table to select the locale for your installation:

File Name String	Change To
PDMLinkR8Templates.xml	PDMLinkR8Templates_ja.xml

Table 2 MigrateR7toR8PDMLink.xml Load Files

3. Save your changes and close the file.

Windchill ProjectLink

These instructions apply to Windchill ProjectLink when upgrading from either Release 7.0 or 8.0:

1. Edit the
<windchill>/codebase/com/ptc/windchill/projectlink/load/MigrateProgramTemplates.xml load set file on the target system.
2. Locate the following filename strings listed in
<windchill>/codebase/com/ptc/windchill/projectlink/load/MigrateProgramTemplates.xml and append the locale extension for the locale of the data being loaded. Japanese locale is used as the locale extension example. The PTC Locale Extensions table lists the locale extension values supported with this release. Use the information in this table to select the locale for your installation:

File Name String	Change To
projectlink/upgrade/programTemplates.xml	projectlink/upgrade/programTemplates_ja.xml

3. Save your changes and close the file.
4. Edit the
<windchill>/codebase/com/ptc/windchill/projectlink/load/programSubType.xml load set file.
5. Locate the following filename strings listed in the
<windchill>/codebase/com/ptc/windchill/projectlink/load/programSubType.xml and append the locale extension for the locale of the data being loaded. Japanese locale is used as the locale extension example. The PTC Locale Extensions table lists the locale extension values supported with this release. Use the information in this table to select the locale for your installation:

File Name String	Change To
../loadXMLFiles/project_types/program.xml	../loadXMLFiles/project_types/program_ja.xml

6. Save your changes and close the file.

Preparing the Target System for a Workgroup Manager Upgrade

If you are using a Workgroup Manager that needs to be upgraded, perform the following.

When present, MAP files from the source system have to be copied to the target system under the same directory structure.

If the directory structure is not present on the target system, it has to be created before copying the MAP files. The MAP file(s) (which may vary per WGM installation) are present under the following directory structure:

```
/wmunigraphics/wtunigraphics.map  
/wminventor/wtinventor.map  
/wmautocad/wtacad.map  
/wmsolidworks/wtsw.map  
/wmcattia5/wtcattia5.map
```

Increase the Method Server Heap Size (Optional)

For some sites, migrators, WinDU tasks and other tools fail with Out of Memory Exceptions. To prevent these errors, perform the following.

Using xconfmanager, update the wt.properties file by changing the following property:

```
wt.manager.cmd.MethodServer.java.command
```

The wt.properties file is located in <Windchill>/codebase/wt.properties and the value 128 in the argument Xmx128m needs to be changed to at least 1024.

Verify the Target System

Verify the successful operation of the target system. Check for any errors or warnings on each page. Exercise any use cases that are of particular importance in your usage of Windchill. If you transformed any customized DCA configuration files, then access the corresponding user interfaces (UIs) to verify that your transformations work correctly.

Summary Checklist

This checklist summarizes the steps, described in this chapter, to set up a target system for upgrade.

- ☐ Install platform components, all of the necessary Windchill solutions and optional products. Include Windchill Information Modeler if you will be deploying modeled customizations on the target system.
- ☐ Apply the latest patches and maintenance releases, if applicable.
- ☐ Run windchill version to confirm that all the required components are reported as installed.
- ☐ Verify the successful operation of the target system by bringing up the UI and exercising the basic functioning of Windchill.

- ☐ Check the method server log for any errors or warnings.
- ☐ Configure the target system with any properties that you have added or customized on your source system.
- ☐ Back up all of the customization files on your source system, and copy them into a corresponding location in your target installation.
- ☐ Use Rational Rose, the Java SDK, and the javagen utility to upgrade the customizations for your target system.
- ☐ Create a new database user to own the database and load the DDL for the database.
- ☐ Use the windchill wt.load.WindchillLoader command with options of your choice to load the initial dataset for this new database.
- ☐ If you are upgrading from 7.0 and you have customized DCA configuration files in your source system, use the RecursivelyUpgradeConfigurations command to transform the appropriate XML files, and copy them to the target system.
- ☐ If applicable, install the language files for localized data.
- ☐ Verify the successful operation of the target system by bringing up the UI and exercising any use cases that are of particular importance in your usage of Windchill.
- ☐ Check the method server log for any errors or warnings.

4

Preparing the Production System for Upgrade

This chapter describes how to take a production source system offline in a graceful manner to ensure the stability and consistency of the data to be upgraded. This procedure applies only to preparing a source system for a production upgrade. For an overview of the entire upgrade process, consult the chapter Planning an Upgrade.

Topic	Page
Preparing a Production Source System	4-2
Summary Checklist	4-3

Preparing a Production Source System

Perform the following steps in setting up your production source database for upgrade.

1. Disable access to the system. You should not completely shutdown the Windchill solution. Instead, only disable access by Windchill clients. The following are two alternatives for doing this:
 - a. The simplest way to do this is to configure your system to deny access to your users. You can do this by reconfiguring your server to only accept connections from itself.
 - b. Alternatively, you can adjust the authentication settings for all web server aliases that provide access to Windchill solution functionality.
2. Restart the servers so that all active sessions are terminated and no new authenticated client connections can be established. Shut down Apache, Tomcat, and other web servers or servlet engines as described in the Windchill Installation and Configuration Guide - Advanced.
3. Allow pending queue entries to be processed.

Allow the system to run for a while. It is strongly suggested that you let the system run long enough to complete all pending processing queue entries (not schedule queue entries; refer to the following note for more information) before you upgrade.

To monitor the state of the queues, use the queue manager on the source system. For additional information about the background queues, see the chapter on "Configuring and Administering Background Queues" in the *Windchill System Administrator's Guide*.

Note: Since Windchill solutions have the capability of queuing work to be performed in the future, it is not possible to allow scheduled queue entries to run to completion. Therefore, the presence of these should not prevent you from starting an upgrade.

Note: The Upgrade Manager will disable and enable the execution of the queues during upgrade process as required.

4. For Windchill Visualization Services, use the CAD Agent Administrator to take the workers offline so that new jobs are not processed before you shut down the server. Publish any jobs waiting in the publish queues.
5. Once all processing queue entries have completed, you may stop your web server, servlet runner, server manager, method server, and any other auxiliary method servers or adapters that are running. You must also delete the following queue entries on the source system:
 - PublisherQueue

- PublisherQueue1

OR

Stop your Windchill solution. In a Windchill shell, enter the following command for either UNIX or Windows systems:

```
windchill stop
```

6. Stop Aphelion as described in the *Windchill Installation and Configuration Guide - Advanced* in the chapter titled "Starting and Stopping the Aphelion Directory".
7. Backup Oracle Database and Aphelion. Ensure that your Oracle database and the Aphelion LDAP instance from your source system are completely backed up and in sync before proceeding. At this point in the process, your source installation is no longer needed to run your Windchill solution
8. Purge Pre-9.0 data from audit logs. For more information, see [Purging Audit Log Data](#).

Summary Checklist

This checklist summarizes the steps, described in this chapter, to prepare a production source system for upgrade.

- ☐ Disable access to the system by Windchill clients.
- ☐ Restart the servers so that all active sessions are terminated and no new authenticated client connections can be established. Shut down Apache, Tomcat, and other web servers or servlet engines.
- ☐ Allow pending queue entries to be processed.
- ☐ For Windchill Visualization Services, use the CAD Agent Administrator to take the workers offline so that new jobs are not processed before you shut down the server. Publish any jobs waiting in the publish queues.
- ☐ Once all processing queue entries have completed, you may stop your web server, servlet runner, server manager, method server, and any other auxiliary method servers or adapters that are running. You must also delete "PublisherQueue" and PublisherQueue1" on the source system.
- ☐ Stop Aphelion.
- ☐ Backup Oracle Database and Aphelion. Ensure that your Oracle database and the Aphelion LDAP instance from your source system are completely backed up and in sync before proceeding.
- ☐ Purge data from the audit logs.

5

Executing the Pre-upgrade Utilities

This chapter describes how to execute pre-upgrade utilities on the source and target systems. The instructions in this chapter apply equally to performing an upgrade on both a test and production system. The processes you execute on the source system depend on whether it is a 7.0 or an 8.0 system. For an overview of the entire upgrade process, consult the chapter Planning an Upgrade.

Topic	Page
Pre-upgrade Steps for a 7.0 to 9.0 Upgrade	5-2
Pre-upgrade Steps for an 8.0 to 9.0 Upgrade	5-10
Summary Checklist	5-17

Pre-upgrade Steps for a 7.0 to 9.0 Upgrade

This section describes the pre-upgrade steps for upgrades from 7.0 to 9.0.

Required Pre-upgrade Processes on 7.0 Source System

This section describes the preupgrade processes to the source system.

Executing WinDU Diagnostic Tasks

Execute the following WinDU tasks before running the Upgrade Manager. All issues found while running the WinDU tasks must be resolved prior to upgrade.

For more information on each WinDU task, refer to the WinDU Guide.

WinDU Diagnostic Task Name
ControlBranchDuplicates
DomainAdministeredObjectsDomainReferenceCheck
NullContainerReferencesCheck
InvalidLdapEntries
InvalidObjects
MissingRepresentables
MissingMaster
OrgAndUserDuplicatesCheck
OrganizationOwnedReference
PrincipalValidator
DatabaseIndexUtility
NullNameSpaceAttributeCheck
VerifyNoCheckedOutContainerTemplates
InvalidContainerTemplate
ContextValidator

Extracting the Pre-upgrade CLASS Files

Extract all the files from the following JAR files from your target system to *<Source_Windchill>/codebase* on your source system:

- `<Target_Windchill>/Upgrade/premigrate.jar`
- `<Target_Windchill>/Upgrade/premigrate-70.jar`

For example, if you have copied the above jar files to `<Source_Windchill>/codebase` on your source system, then you can extract the utilities by executing the following commands from that directory in a Windchill shell:

```
jar -xvf premigrate.jar
jar -xvf premigrate-70.jar
```

The class files extract to the correct paths; they are used later to execute pre-upgrade tools.

Detecting Conflicts with CAD Documents

Several tools are available to help reduce the number of conflicts that can arise during the upgrade process for CAD documents.

Detecting Conflicts for CAD Document Numbers

In the current release, CAD document numbers contain all upper case characters. This is consistent with WTParts and WTDocuments. Prior to Release 9.0, CAD document numbers could contain any combination of upper and lowercase. Conflicts can arise when the mixed case becomes uppercase. A tool is provided that can detect these conflicts prior to upgrade.

On the source system, execute the following from the windchill shell:

```
windchill wt.epm.upgrade.EPMDocNumberConflictCheck
```

The tool writes any conflicts to a log file, that can be found at `<windchill>/logs`, as indicated by the output of the tool. To address the conflicts, renumber the applicable documents in your Windchill solution. After all conflicts have been resolved, the database is ready to be upgraded.

Detecting conflicts for CAD Document CADNames

In 9.0, CADName is modified to be unique in a project or PDM. The authoring application is not a uniqueness constraint. Therefore, CADName is unique for all Authoring Applications. The option to enforce uniqueness based on authoring application has been removed. A tool is provided for the source system to detect conflicts prior to upgrade. Any documents that do not have CADNames receive CADNames during the upgrade process.

From your source system, execute the following from a windchill shell:

```
windchill wt.epm.upgrade.EPMDocCADNameConflictCheck
```

This tool writes any conflicts to a log file, located at `Windchill/logs`, as indicated by the output of the tool. If there are multiple conflicts, they may be reported in multiple locations within the log. Use the Change CADName functionality provided with the application. Some applications (I-Cubed) do not have this

command included. In this case, a tool is available to change the CADName for these applications. This tool is only to be used when the application does not provide this functionality. The conflict check tool can be run again after renaming the documents to verify that the conflicts have been removed.

Application	Resolve Using
Wildfire	Use application Rename functionality
WMPro	Use application Rename functionality
WMCadds	Use application Rename functionality
WMCatia	Use application Rename functionality
IntraLink Gateway	Fix in IntraLink and republish
Optegra Gateway	Use application Rename functionality
All others	ChangeCADName tool
IDEAS	IDEAS documents cannot be renamed. They will be renamed during the upgrade process.

To change the cadname using the ChangeCADName tool, execute the following on your source system:

```
windchill wt.epm.upgrade.ChangeCADName [documentNumber
authoringApplication oid newCADName]
```

Note: The first three arguments to this tool are the same values returned by the conflict check utility.

Note: This utility requires code that is extracted in the step titled [Extracting the Pre-upgrade CLASS Files](#).

Upgrading CAD Documents

A premigrator is available to check the state of objects prior to upgrade. To use this tool, execute the following command from a windchill shell on your source system:

```
windchill wt.epm.upgrade.VerifyCadDocsPreMigrateR8
```

Note: This utility requires code that is extracted in the step titled [Extracting the Pre-upgrade CLASS Files](#).

The tool writes the objects with incorrect state for migration to a log file, as indicated by the output of the tool.

If there are any EPMDocuments or WTParts that are either checked out to a user's personal cabinet or newly-created in a workspace, execute the following command:

```
windchill wt.epm.upgrade.PrepareForUpgrade
```

Note: You will need to login as administrator when asked for authentication.

Note: PrepareForUpgrade log is created in the logs directory

This tool cleans up all user workspaces in the database. Cleanup involves undo-checkout of all EPMDocuments and WTParts that are checked-out to the workspace sub-folder in user's personal cabinet. It also deletes all new EPMDocuments and WTParts that reside in workspace sub-folder in a user's personal cabinet.

Checking and Fixing Pro/ENGINEER Family Tables

Prior to upgrading, a premigrator must be executed to check for and fix any problems with the Pro/ENGINEER family tables. To use this tool, execute the following command on your source system from a Windchill shell:

```
windchill wt.epm.upgrade.FTHealer
```

Note: This utility requires code that is extracted in the step titled Extracting the Premigration CLASS Files - All Windchill Solutions.

This writes a report of the family tables with problems to EPMPFamilyTable.log in the logs directory. If problems were reported, fix them with the following command:

```
windchill wt.epm.upgrade.FTHealer -heal
```

Check FTHealer.log in the logs directory. In some circumstances, the log reports if manual intervention is needed.

Making Life Cycle Templates Unique

Before upgrading, you must make sure the states of life cycle templates are unique. If they are not unique, manually delete the duplicated state or change it to another state. Use the following process:

1. Execute the following SQL query to find out if there are any duplicated phases in each life cycle template:

```
SQL> select count(*), b.ida3a5, a.name from phasetemplate a,  
phaselink b, lifecycletemplate c where a.ida2a2 =b.ida3b5 and  
b.ida3a5=c.ida2a2 and c.LATESTITERATIONINFO=1 group by a.name,  
b.ida3a5 having count(*)>1;
```

2. If there are duplicated phases, run the following SQL query to find out the life cycle template name and the Organization in which the life cycle template resides:

```

SQL> select a.name, b.namecontainerinfo from
      lifecycletemplatemaster a, orgcontainer b where
      b.ida2a2=a.IDA3CONTAINERREFERENCE and a.ida2a2 in (select
      IDA3MASTERREFERENCE from lifecycletemplate where
      ida2a2=[ida3a5])
union select a.name, b.namecontainerinfo from
      lifecycletemplatemaster a, Exchangecontainer b where
      b.ida2a2=a.IDA3CONTAINERREFERENCE and a.ida2a2 in (select
      IDA3MASTERREFERENCE from lifecycletemplate where
      ida2a2=[ida3a5])
union select a.name, b.namecontainerinfo from
      lifecycletemplatemaster a, PDMLinkProduct b where
      b.ida2a2=a.IDA3CONTAINERREFERENCE and a.ida2a2 in (select
      IDA3MASTERREFERENCE from lifecycletemplate where
      ida2a2=[ida3a5])
union select a.name, b.namecontainerinfo from
      lifecycletemplatemaster a, WTLlibrary b where
      b.ida2a2=a.IDA3CONTAINERREFERENCE and a.ida2a2 in (select
      IDA3MASTERREFERENCE from lifecycletemplate where
      ida2a2=[ida3a5]);

```

Note: Replace [ida3a5] with the value of b.ida3a5 from Step 1.

After identifying the life cycle template, delete or rename the duplicated phase.

Run the Evolvability Diagnostic Utility

This utility identifies persistent serialized objects that may become incompatible when you upgrade to a new release of a Windchill solution. To use this utility, refer to the documentation provided with the tool at the following Web site:

<http://www.ptc.com/cs/doc/EDU.htm>

When EDU finds serialization issues and they are corrected, delete the old DATA files before re-executing EDU because the utility does not overwrite the .DATA files on the source system. This will prevent false findings.

Preparing to Upgrade Project Templates

In order to reuse your project templates in your upgraded system, create blank projects in the source system so new project templates can be created after the upgrade. Alternatively, templates can be recreated after the upgrade.

Terminate Processes for Invalid Workflows

This task will document the workflow processes without valid primary business objects (PBOs) in the InvalidWIWFProcessForChangeObjects.log file. This log file is created by running the Windchill Diagnostic Utility task

"InvalidWIWFProcessForChangeObjects" and the

InvalidWIWFProcessForChangeObjects.log is located in the Windchill\WinDU\logs directory.

Perform the following steps to prepare the data for upgrade before executing the Upgrade Manager.

1. Click on Advanced Search.
2. Select "Workflow Process" in Search For attribute
3. Add Select Search Criteria as -
State = "Running"
Name = "Change Request Workflow_00022*"

Search **Advanced Search** Classification Search

Keyword:

Show Results: ☒ With All of These Criteria ☐ With Any of These Criteria Results Per Page: 15

Define Scope of Search

Search In: All Contexts ☐ Apply selection only to contexts I'm a member of.

Search For: Workflow Process Find ...

Select Search Criteria

Criteria: Name Add

Search Criteria (2 items)

Name	Operator	Value
<input type="checkbox"/> State	Equals	Running
<input type="checkbox"/> Name	Equals	Change*

4. Click Search. It should return search results as shown:

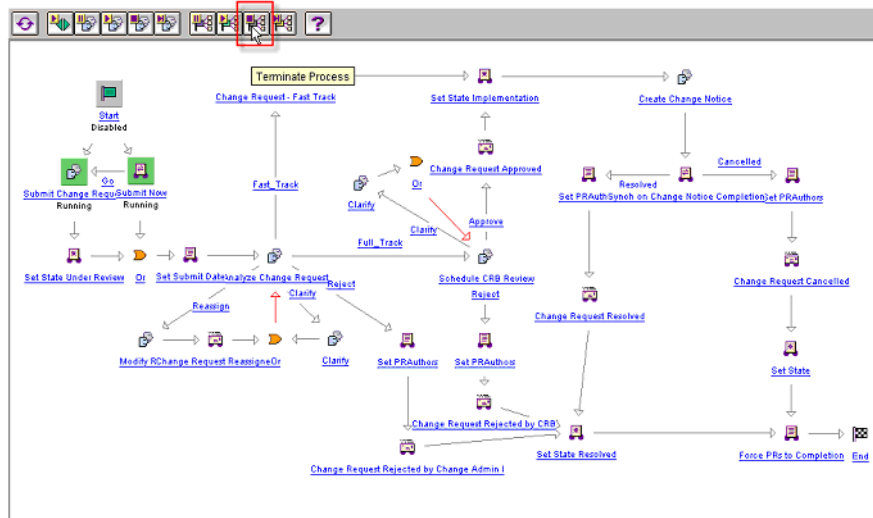
Search Results (16 items)

Copy to Clipboard Delete Add to Project Export to a file

Name	Context	Last Updated	Created On	Priority
<input type="checkbox"/> Change Activity Workflow_00001 - task1	wildfire	05/21/2007	05/21/2007	1
<input type="checkbox"/> Change Activity Workflow_00002 - VIK_CN02_TASK01	Vikram_Product	06/06/2007	06/06/2007	1
<input type="checkbox"/> Change Notice Workflow_00001 - ECN_1461	wildfire	05/21/2007	05/21/2007	1
<input type="checkbox"/> Change Notice Workflow_00002 - aaa_ChangeNotice	Mukesh_Product	05/30/2007	05/30/2007	1
<input type="checkbox"/> Change Notice Workflow_00003 - VIK_CN02	Vikram_Product	06/06/2007	06/06/2007	1
<input type="checkbox"/> Change Request Workflow_00001 - Vikram_CR01	Vikram_Product	04/23/2007	04/23/2007	1
<input type="checkbox"/> Change Request Workflow_00002 - aaaaaaChangeRequest	GOLF_CART	05/18/2007	05/18/2007	1
<input type="checkbox"/> Change Request Workflow_00003 - aaa_ChangeRequest	Mukesh_Product	05/18/2007	05/18/2007	1
<input type="checkbox"/> Change Request Workflow_00004 - CR_1461	wildfire	05/21/2007	05/21/2007	1
<input type="checkbox"/> Change Request Workflow_00005 - CR_005	Prod_14	06/04/2007	06/04/2007	1
<input type="checkbox"/> Change Request Workflow_00006 - VIK_CR02	Vikram_Product	06/06/2007	06/06/2007	1
<input type="checkbox"/> Change Request Workflow_00007 - User1 Change Request	Mukesh_Product	06/06/2007	06/06/2007	1
<input type="checkbox"/> Change Request Workflow_00008 - TestCR	GOLF_CART	06/14/2007	06/14/2007	1
<input type="checkbox"/> Change Request Workflow_00009 - yes	WFInt	06/19/2007	06/19/2007	1
<input type="checkbox"/> Change Request Workflow_00010 - CR04	Vikram_Product	06/29/2007	06/29/2007	1

Page 1 of 2 First 1 2 Last

5. Click on the process name to open the process manager.
6. Click on **Terminate Process**.



7. Verify that the process status is changed from RUNNING to TERMINATED.
8. Repeat the same process for all the invalid workflow process reported in the InvalidWIWFProcessForChangeObjects.log file.

Ensure Classifications Are Not Checked Out

Before starting the upgrade, you should ensure that classification is not checked-out.

When Classification is checked-out in CounterPart, it locks the classification (which includes Attributes, QoMs, ClassificationNodes etcetera) for any updates from the Windchill side.

CounterPart is a tool used for bulk changes in Classification so it requires the lock during check-out. Upgrade will fail if classification structure is checked out during upgrade. The error displayed is

"(com.ptc.windchill.counterpart.counterpartResource/0) wt.util.WTException: CounterPart user 'ptladmin' has the classification checked out".

Capture Non-modeled Indexes

List any non-modeled indexes as they will be dropped during the upgrade. These will have to be rebuilt post-upgrade.

Required Pre-upgrade Processes on Target System

All Solutions

Run the Evolvability Diagnostic Utility

This utility identifies persistent serialized objects that may become incompatible when you upgrade to a new release of a Windchill solution. To use this utility, refer to the documentation provided with the tool at the following Web site:

<http://www.ptc.com/cs/doc/EDU.htm>

When EDU finds serialization issues and they are corrected, delete the old DATA files before re-executing EDU because the utility does not overwrite the .DATA files on the source system. This will prevent false findings.

Copy iba.properties File to the Target System

The iba.properties file is required during the upgrade process.

On your source system, copy

`<Windchill>/codebase/com/ptc/prowt/proesvcs/util/iba.properties`

to the following location on your target system:

`<Windchill>/codebase/com/ptc/prowt/proesvcs/util/iba.properties`

Copy ie.properties File to the Target System

Copy the ie.properties file from your source system:

`<Windchill>/codebase/WEB-INF`

to the following location on your target system:

`<Windchill>/Upgrade`

Migrate ProductView or ProductView Lite Data to New Format

Refer to the appendix titled Migrating ProductView Data for the procedure required prior to upgrade.

For ProjectLink or ProjectLink/PDMLink:

Pre-upgrade Step for Project Templates

For Windchill ProjectLink, copy the files located under

`<Source_Windchill>/loadXMLFiles/content`

to

`<Target_Windchill>/loadXMLFiles/content`

with the directory hierarchy preserved.

Pre-upgrade Steps for an 8.0 to 9.0 Upgrade

This section describes the preupgrade steps for upgrades from 8.0 to 9.0.

Required Pre-upgrade Processes on 8.0 Source System

This section describes the preupgrade processes to the source system.

Executing WinDU Diagnostic Tasks

Execute the following WinDU tasks before running the Upgrade Manager. All issues found while running the WinDU tasks must be resolved prior to upgrade.

For more information on each WinDU task, refer to the WinDU Guide.

WinDU Diagnostic Task Name
DatabaseIndexUtility
DomainAdministeredObjectsDomainReferenceCheck
NullContainerReferencesCheck
InvalidLdapEntries
InvalidObjects
MissingRepresentables
InvalidSeriesValues
MissingMaster
NullNameSpaceAttributeCheck
OrgAndUserDuplicatesCheck
OrganizationOwnedReference
PrincipalValidator
VerifyNoCheckedOutContainerTemplates
InvalidContainerTemplate
ValidateFamilyTableData
ContextValidator

Extracting the Pre-upgrade CLASS Files

Extract all the files from the following JAR files from your target system to <Source_Windchill>/codebase on your source system:

- <Target_Windchill>/Upgrade/premigrate.jar
- <Target_Windchill>/Upgrade/premigrate-80.jar

For example, if you have copied the above jar files to <Source_Windchill>/codebase on your source system, then you can extract the utilities by executing the following commands from that directory in a Windchill shell:

```
jar -xvf premigrate.jar
jar -xvf premigrate-80.jar
```

The class files extract to the correct paths; they are used later to execute pre-upgrade tools.

Detecting conflicts for CAD Document CADNames

In 9.0, CADName is modified to be unique in a project or PDM. The authoring application is not a uniqueness constraint. Therefore, CADName is unique for all Authoring Applications. The option to enforce uniqueness based on authoring application has been removed. A tool is provided for the source system to detect conflicts prior to upgrade. Any documents that do not have CADNames receive CADNames during the upgrade process.

From your source system, execute the following from a windchill shell:

```
windchill wt.epm.upgrade.EPMDocCADNameConflictCheck
```

Note: This utility requires code that is extracted in the step titled Extracting the Premigration CLASS Files - All Windchill Solutions

This tool writes any conflicts to a log file, located at Windchill/logs, as indicated by the output of the tool. If there are multiple conflicts, they may be reported in multiple locations within the log. Use the Change CADName functionality provided with the application. Some applications (I-Cubed) do not have this command included. In this case, a tool is available to change the CADName for these applications. This tool is only to be used when the application does not provide this functionality. The conflict check tool can be run again after renaming the documents to verify that the conflicts have been removed.

Application	Resolve Using
Wildfire	Use application Rename functionality
WMPro	Use application Rename functionality
WMCadds	Use application Rename functionality

Application	Resolve Using
WMCatia	Use application Rename functionality
IntraLink Gateway	Fix in IntraLink and republish
Optegra Gateway	Use application Rename functionality
All others	ChangeCADName tool
IDEAS	IDEAS documents cannot be renamed. They will be renamed during the upgrade process.

To change the cadname using the ChangeCADName tool, execute the following on your source system:

```
windchill wt.epm.upgrade.ChangeCADName [documentNumber
authoringApplication oid newCADName]
```

Note: The first three arguments to this tool are the same values returned by the conflict check utility.

Note: This utility requires code that is extracted in the step titled Extracting the Premigration CLASS Files - All Windchill Solutions.

Executing the FTCleanup Utility

Before upgrading, it is necessary to ensure there are no corrupted Family Tables on the source system. To assist in this activity, the FTCleanup utility is used to check, report, and clean the corrupted Family Tables on the source system. The tool works in two modes:

1. windchill wt.epm.upgrade.FTCleanup

In this mode, the utility will find and report all corrupted family tables. If any corrupted Family Tables are found, the details of the corrupted family tables are reported in the FTCleanup log file located at *<install-dir>\logs\FTCleanup.log*.

2. windchill wt.epm.upgrade.FTCleanup -clean

In this mode, the utility is run with -clean option. This is used to find and delete the corrupted family tables.

To run the FTCleanup utility, execute the following command from a Windchill shell:

```
windchill wt.epm.upgrade.FTCleanup
```

or

```
windchill wt.epm.upgrade.FTCleanup -clean.
```

Cleanup of Workspaces

In order to upgrade, all objects in workspaces should be the checked in state. This can be accomplished by performing a check in or undo checked out on the object, or in the case of new objects, checked in or deleted.

To assist in this activity, use the DeleteAllFromWS utility on the source system. New objects will be deleted from workspace and the database. Older objects that already have iterations in common space will have an UndoCheckout performed and just be removed from workspace.

The tool works in two modes:

1. windchill wt.epm.upgrade.DeleteAllFromWS -check

In this mode, the utility will check and report any new or checked out objects in EPMWorkspaces. Details are provided regarding the objects so that the owner may be requested to perform a checkin or undo checkout. PTC suggests accounting for time to allow the users to respond to the request to ensure data will not be lost before upgrading.

2. windchill wt.epm.upgrade.DeleteAllFromWS -clean

In this mode, the utility will perform an undo checkout or deletion on the checked out objects. This option should be used as a last resort, only in the case that the user has not been able to perform a checkin or undo checkout of the objects before the upgrade will occur. With this option, objects checked out to workspaces will have an undo check out executed, and newly created objects in workspaces will be deleted. This means that data may be lost. Please use this option carefully.

To run the DeleteAllFromWS utility, execute the following command from a Windchill shell with either the -check or -clean option:

```
windchill wt.epm.upgrade.DeleteAllFromWS [-check | -clean]
```

The utility will create a log file at the following location:

<install-dir>\logs\UndoCheckedOut.log

Run the Evolvability Diagnostic Utility

This utility identifies persistent serialized objects that may become incompatible when you upgrade to a new release of a Windchill solution. To use this utility, refer to the documentation provided with the tool at the following Web site:

<http://www.ptc.com/cs/doc/EDU.htm>

When EDU finds serialization issues and they are corrected, delete the old DATA files before re-executing EDU because the utility does not overwrite the .DATA files on the source system. This will prevent false findings.

Terminate Processes for Invalid Workflows

This task will document the workflow processes without valid PBOs in the InvalidWIWFProcessForChangeObjects.log file. This log file is created by running the Windchill Diagnostic Utility task "InvalidWIWFProcessForChangeObjects" and the InvalidWIWFProcessForChangeObjects.log is located in the Windchill\WinDU\logs directory.

Perform the following steps to prepare the data for upgrade before executing the Upgrade Manager.

1. Click on Advanced Search.
2. Select "Workflow Process" in Search For attribute
3. Add Select Search Criteria as -
State = "Running"
Name = "Change Request Workflow_00022*"

The screenshot shows the Windchill Advanced Search interface. The 'Advanced Search' tab is selected. The 'Search For' field is set to 'Workflow Process'. The 'Search In' dropdown is set to 'All Contexts'. The 'Show Results' section has 'With All of These Criteria' selected. The 'Results Per Page' is set to 15. The 'Define Scope of Search' section has 'Search In' set to 'All Contexts' and 'Apply selection only to contexts I'm a member of.' unchecked. The 'Select Search Criteria' section shows a list of criteria with two items: 'State' and 'Name'. The 'State' criterion has the operator 'Equals' and the value 'Running'. The 'Name' criterion has the operator 'Equals' and the value 'Change*'. The 'Criteria' dropdown is set to 'Name'.

Name	Operator	Value
State	Equals	Running
Name	Equals	Change*

4. Click Search. It should return search results as shown:

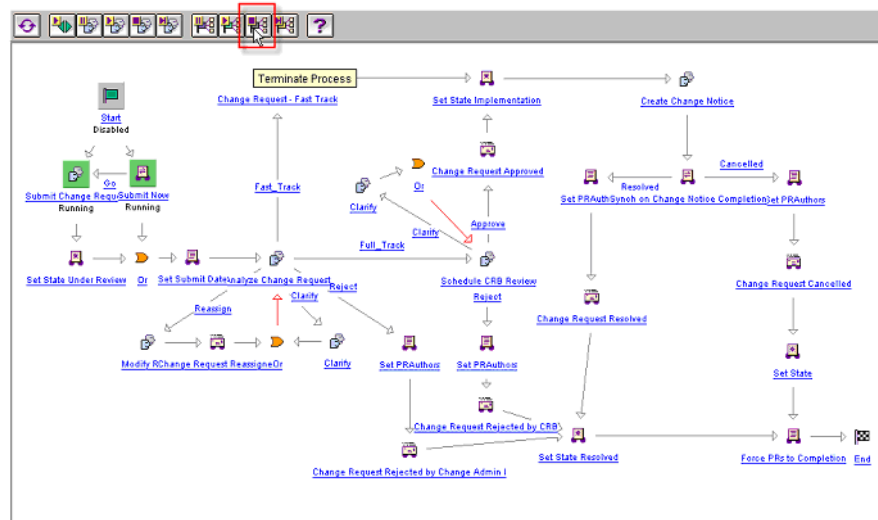
Search Results (16 items)

Copy to Clipboard Delete Add to Project Export to a file

Name	Context	Last Updated	Created On	Priority
Change Activity Workflow_00001 - task1	wildfire	05/21/2007	05/21/2007	1
Change Activity Workflow_00002 - VIK_CN02_TASK01	Vikram_Product	06/06/2007	06/06/2007	1
Change Notice Workflow_00001 - ECN_1461	wildfire	05/21/2007	05/21/2007	1
Change Notice Workflow_00002 - aaa_ChangeNotice	Mukesh_Product	05/30/2007	05/30/2007	1
Change Notice Workflow_00003 - VIK_CN02	Vikram_Product	06/06/2007	06/06/2007	1
Change Request Workflow_00001 - Vikram_CR01	Vikram_Product	04/23/2007	04/23/2007	1
Change Request Workflow_00002 - aaaaaaChangeRequest	GOLF_CART	05/18/2007	05/18/2007	1
Change Request Workflow_00003 - aaa_ChangeRequest	Mukesh_Product	05/18/2007	05/18/2007	1
Change Request Workflow_00004 - CR_1461	wildfire	05/21/2007	05/21/2007	1
Change Request Workflow_00005 - CR_005	Prod_14	06/04/2007	06/04/2007	1
Change Request Workflow_00006 - VIK_CR02	Vikram_Product	06/06/2007	06/06/2007	1
Change Request Workflow_00007 - User1 Change Request	Mukesh_Product	06/06/2007	06/06/2007	1
Change Request Workflow_00008 - TestCR	GOLF_CART	06/14/2007	06/14/2007	1
Change Request Workflow_00009 - yes	WFInt	06/19/2007	06/19/2007	1
Change Request Workflow_00010 - CR04	Vikram_Product	06/29/2007	06/29/2007	1

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- Click on the process name to open the process manager.
- Click on **Terminate Process**.



- Verify that the process status is changed from RUNNING to TERMINATED.
- Repeat the same process for all the invalid workflow process reported in the InvalidWIWFProcessForChangeObjects.log file.

Ensure Classifications Are Not Checked Out

Before starting the upgrade, you should ensure that classification is not checked-out.

When Classification is checked-out in CounterPart, it locks the classification (which includes Attributes, QoMs, ClassificationNodes etcetera) for any updates from the Windchill side.

CounterPart is a tool used for bulk changes in Classification so it requires the lock during check-out. Upgrade will fail if classification structure is checked out during upgrade. The error displayed is

"(com.ptc.windchill.counterpart.counterpartResource/0) wt.util.WTException: CounterPart user 'ptladmin' has the classification checked out".

Required Pre-upgrade Processes on Target System

All Solutions

Run the Evolvability Diagnostic Utility

This utility identifies persistent serialized objects that may become incompatible when you upgrade to a new release of a Windchill solution. To use this utility, refer to the documentation provided with the tool at the following Web site:

<http://www.ptc.com/cs/doc/EDU.htm>

When EDU finds serialization issues and they are corrected, delete the old DATA files on the source system before re-executing EDU. This is required because the utility does not overwrite the .DATA files on the source system. This prevents false findings.

Copy iba.properties File to the Target System

The iba.properties file is required during the upgrade process.

On your source system, copy

```
<Windchill>/codebase/com/ptc/windchill/uwgm/proesrv/attribute/iba.  
properties
```

to the following location on your target system:

```
<Windchill>/codebase/com/ptc/windchill/uwgm/proesrv/attribute/iba.  
properties
```

Note: You will need to create the folder "attribute" under the "proesrv" directory, if it doesn't already exist.

Copy ie.properties File to the Target System

Copy the ie.properties file from your source system:

```
<Windchill>/codebase/WEB-INF
```

to the following location on your target system:

```
<Windchill>/Upgrade
```

For ProjectLink or ProjectLink/PDMLink:

Pre-upgrade Step for Project Templates

For Windchill ProjectLink, copy the files located under
<Source_Windchill>/loadXMLFiles/content
to
<Target_Windchill>/loadXMLFiles/content
with the directory hierarchy preserved.

Preparing to Upgrade Project Templates

In order to reuse your project templates in your upgraded system, create blank projects in the source system so new project templates can be created after the upgrade. Alternatively, templates can be recreated after the upgrade.

To ensure that container templates that contain EPM documents work after the upgrade, create a new project in the target system that is identical to the project in the source version and **Save as Template**.

Migrate ProductView or ProductView Lite Data to New Format

Refer to the appendix titled Migrating ProductView Data for the procedure required prior to upgrade.

Summary Checklist

This checklist summarizes the steps, described in this chapter, to run the pre-upgrade utilities for upgrade.

Preupgrade Steps for a 7.0 to 9.0 Upgrade

Required Pre-upgrade Processes on 7.0 Source System:

- ☐ Extract the pre-upgrade utilities CLASS Files
- ☐ Detect Conflicts with CAD Documents
 - a. Detect Conflicts for CAD Document Numbers with wt.epm.upgrade.EPMDocNumberConflictCheck. To address the conflicts, renumber the applicable documents in your Windchill solution.
 - b. Detect conflicts for CAD Document CADNames with wt.epm.upgrade.EPMDocCADNameConflictCheck. Change conflicting cadnames using the ChangeCADName tool (wt.epm.upgrade.ChangeCADName).
- ☐ Prepare CAD Documents for Upgrade

Check the state of objects prior to upgrade by using `wt.epm.upgrade.VerifyCadDocsPreMigrateR8`. If there are any EPMDocuments or WTParts that are either checked out to a user's personal cabinet or newly-created in a workspace, execute `wt.epm.upgrade.PrepareForUpgrade` to cleanup all users workspaces in the database

- ☐ Check for and fix any problems with the Pro/ENGINEER family tables by using the `wt.epm.upgrade.FTHealer` utility. Check `FTHealer.log` in the logs directory. Note that in some circumstances, the log will report if manual intervention is needed.
- ☐ Make sure the states of life cycle templates are unique, using SQL queries/commands as described in this chapter.
- ☐ Run the Evolvability Diagnostic Utility to export persistent serialized objects to DATA files for later analysis on the target system. Delete any old DATA files before running the utility.
- ☐ Prepare to reuse your project templates in your upgraded system, by creating blank projects in the source system so new project templates can be created after the upgrade. Alternatively, templates can be recreated after the upgrade.

Required Pre-upgrade Processes on Target System

All Solutions

- ☐ Run the Evolvability Diagnostic Utility to verify the evolution support for the serialized objects previously exported from the source system.

- ☐ Copy

```
<Source_Windchill>/codebase/com/ptc/prowt/proesvcs/util/iba.properties
```

to:

```
<Target_Windchill>/codebase/com/ptc/prowt/proesvcs/util/iba.properties
```

- ☐ Migrate ProductView or ProductView Lite data to new format
- ☐ Copy the `ie.properties` file from your source system:

```
<Windchill>/codebase/WEB-INF
```

to the following location on your target system:

```
<Windchill>/Upgrade
```

For ProjectLink or ProjectLink/PDMLink:

- ☐ For Windchill ProjectLink, copy the files located under `<Source_Windchill>/loadXMLFiles/content` to

`<Target_Windchill>/loadXMLFiles/content` system with the directory hierarchy preserved.

Pre-upgrade Steps for an 8.0 to 9.0 Upgrade

Required Pre-upgrade Processes on 8.0 Source System

- ☐ Extract the pre-upgrade utilities CLASS Files
- ☐ Detect conflicts for CAD Document CADNames with `wt.epm.upgrade.EPMDocCADNameConflictCheck`. Change conflicting cadnames using the `ChangeCADName` tool (`wt.epm.upgrade.ChangeCADName`).
- ☐ Execute the FTCleanup Utility (`wt.epm.upgrade.FTCleanup`) to find and clean any corrupted Family Tables.
- ☐ Clean up workspaces by executing the `wt.epm.upgrade.DeleteAllFromWS` utility to ensure that all objects in workspaces are in the checked in state.
- ☐ Run the Evolvability Diagnostic Utility to export persistent serialized objects to DATA files, for later analysis on the target system. Delete any old DATA files before running the utility.

Required Preupgrade Processes on Target System

All Solutions

- ☐ Run the Evolvability Diagnostic Utility to verify the evolution support for the serialized objects previously exported from the source system.
- ☐ Copy

```
<Source_Windchill>/codebase/com/ptc/windchill/uwgm/proesrv/attribute/iba.properties
```

to:

```
<Target_Windchill>/codebase/com/ptc/windchill/uwgm/proesrv/attribute/iba.properties
```

Note: You need to create the folder attribute under the proesrv directory, if it doesn't already exist.

- ☐ Copy the ie.properties file from your source system:

```
<Windchill>/codebase/WEB-INF
```

to the following location on your target system:

```
<Windchill>/Upgrade
```

For ProjectLink or ProjectLink/PDMLink Only

- ☐ For Windchill ProjectLink, copy the files located under
<Source_Windchill>/loadXMLFiles/content to
<Target_Windchill>/loadXMLFiles/content system with the directory hierarchy preserved.
- ☐ In order to reuse your project templates in your upgraded system, create blank projects in the source system so new project templates can be created after the upgrade.

6

Configuring the Target System to Use the Source Data

This chapter describes how to configure the target system of an upgrade to use the source data servers of the source system. The instructions in this chapter apply equally to performing an upgrade on both a test and production system. For an overview of the entire process, consult the previous chapter, Planning an Upgrade.

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Export Target Configuration Branch from Target Installation's LDAP	6-2
Configure Database Connection for Target Environment.....	6-3
Reconfigure Your Target System's Base DN	6-5
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Export Target Configuration Branch from Target Installation's LDAP

In order for your target installation to function properly with your upgrade source system's LDAP instance, extract the configuration branch (all data except users and groups) from the LDAP instance that you used to test your customized target installation. Later in the process, this configuration branch has to be imported into the LDAP instance being upgraded from your source installation.

Before exporting the configuration branch, make sure that your target installation is still referencing the LDAP instance used to test that your customized target installation functioned correctly.

Next, you must determine which node under the LDAP's base DN represents the top of the Windchill configuration branch for the target release. This is typically the top-level domain portion of your organization (and is not the node identified via ou=people). For example, if your domain is 'acme.com', then the configuration branch will be identified by 'dc=com'. If your domain name does not end with ".com" (for example, if it is ".net"), you must export two LDAP branches: dc=com and dc=net.

To export the configuration branch information for later use, open a Windchill shell and run the following command:

```
windchill com.infoengine.util.LDAPEXport -dir <Windchill_Target>  
ldiffile <Targetconfigbranch_file> -reldn <Relative_Sub_Node>
```

Use the following as an example:

Windows

```
windchill com.infoengine.util.LDAPEXport -dir C:\ptc\Windchill  
-ldiffile TargetConfigBranch.ldif  
-reldn "dc=com"
```

UNIX

```
windchill com.infoengine.util.LDAPEXport -dir /ptc/Windchill  
-ldiffile TargetConfigBranch.ldif  
-reldn "dc=com"
```

The command above exports the relative sub node (and all its children) within the base DN (from ie.properties under windchill home directory specified above).

If the domain of the target system does not end in ".com", you need to run this command a second time to generate an LDIF file to save the content of the other domain subtree.

```
windchill com.infoengine.util.LDAPEXport -dir <Windchill_Target>  
-ldiffile <Targetconfigbranch_file > -reldn <Relative_Sub_Node>
```

For example:

Windows

```
windchill com.infoengine.util.LDAPEXport -dir c:\ptc\Windchill -  
ldiff file TargetConfigBranch_net.ldif  
-reldn "dc=net"
```

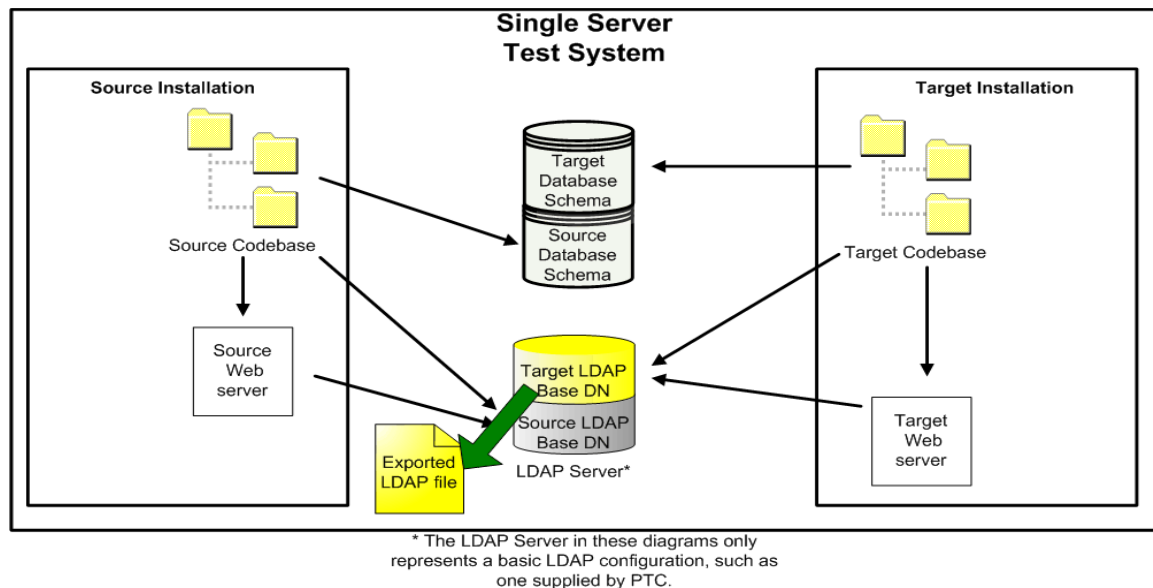
Note: The domain is assumed to be "net"

UNIX

```
windchill com.infoengine.util.LDAPEXport -dir /ptc/Windchill -  
ldiff file TargetConfigBranch_net.ldif  
-reldn "dc=net"
```

Note: The domain is assumed to be "net"

Note: Back up your whole target LDAP instance target installation (if it needs to be restored for validating).



Configure Database Connection for Target Environment

Next ensure that your installation is configured to point to the Oracle instance and database user that was used in your source installation. To do this, update the db.properties file of your target installation to specify a connection to the source installations database by modifying the following properties:

- wt.pom.dbUser
- wt.pom.dbPassword
- wt.pom.jdbc.host

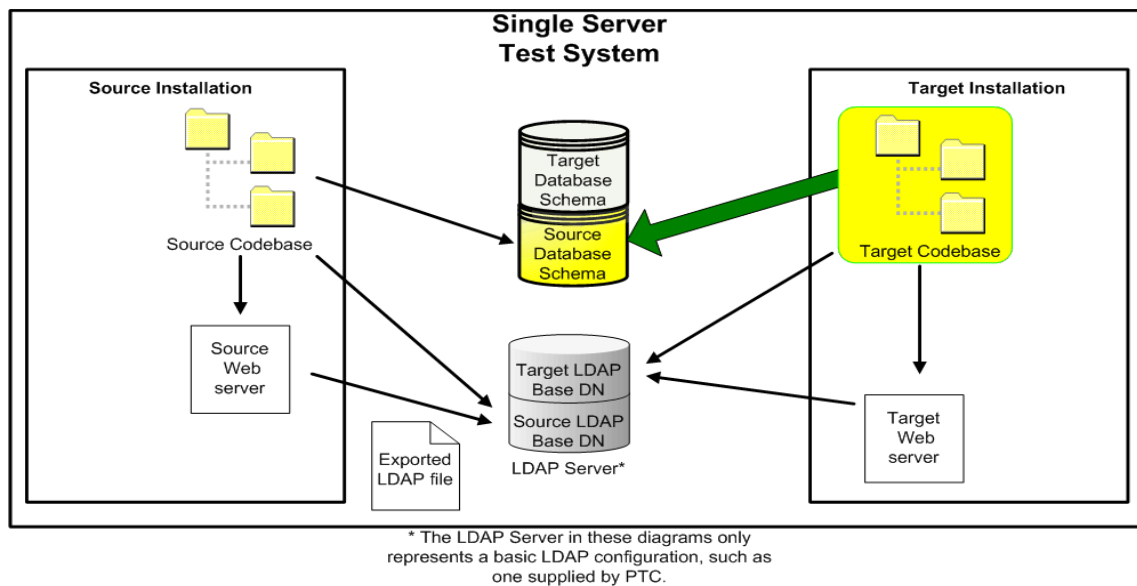
- wt.pom.jdbc.port
- wt.pom.jdbc.service

You can quickly update the values for these properties by using the following command in a Windchill shell (back slashes are line continuations) and specifying values appropriate for your database.

```
> Windchill\bin\xconfmanager -t db\db.properties \
-s wt.pom.dbUser=databaseuser \
-s wt.pom.dbPassword=databasepassword \
-s wt.pom.jdbc.host=host \
-s wt.pom.jdbc.port=port \
-s wt.pom.jdbc.service=sid -p
```

Note: The "-p" portion of the command should only be included at the end of the last line. For example, if you choose not to use the "-s wt.pom.jdbc.service=sid" portion of the command, you would place the "-p" after the last line you did include.

For more information on using the xconfmanager utility, refer to the Windchill System Administrator's Guide.



Granting Proper Privileges to your Database User

Windchill solution upgrades are done by upgrading your database in-place. Instead of exporting all of the database data, modifying it as necessary, and then loading it into a new database user's schema, the Upgrade Manager connects to

the existing database user's schema then alters the schema and data, as necessary, to make it compatible with the target release.

Since you are upgrading a user created for a prior release of a Windchill solution, you must ensure that user is granted all the privileges needed by the database user in the current Windchill release.

Make sure that database user for the database being upgraded has been granted the following roles:

- CONNECT
- RESOURCE
- QUERY REWRITE
- CREATE SEQUENCE

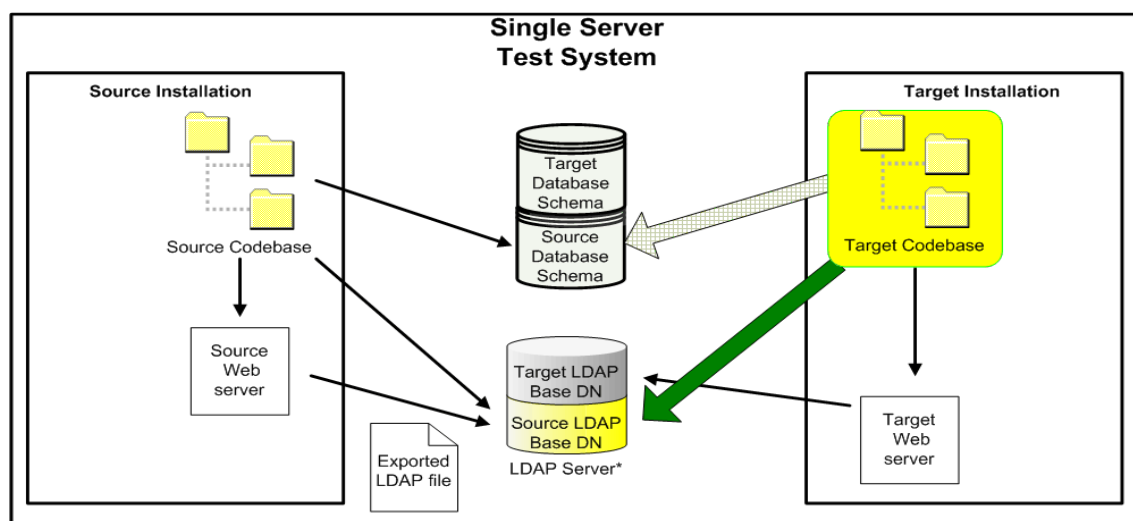
Reconfigure Your Target System's Base DN

To make this change to your target system, an Info*Engine property must be changed to reference your source installation's LDAP base DN. Execute the following command from a Windchill shell to change the property in your site.xconf and update all affected properties files under your target system's installation directory.

```
> xconfmanager -s "ie.ldap.propertyBaseDn=<source-base-dn>" -p
```

For example:

```
> xconfmanager -s  
"ie.ldap.propertyBaseDn=cn=WindchillSourceSystem,cn=Application  
Services,o=acme" -p
```



* The LDAP Server in these diagrams only represents a basic LDAP configuration, such as one supplied by PTC.

Import Target System Configuration Branch into the LDAP Instance being Upgraded

The target LDAP instance configuration branch needs to be imported into the upgrade LDAP instance under the source system's base DN.

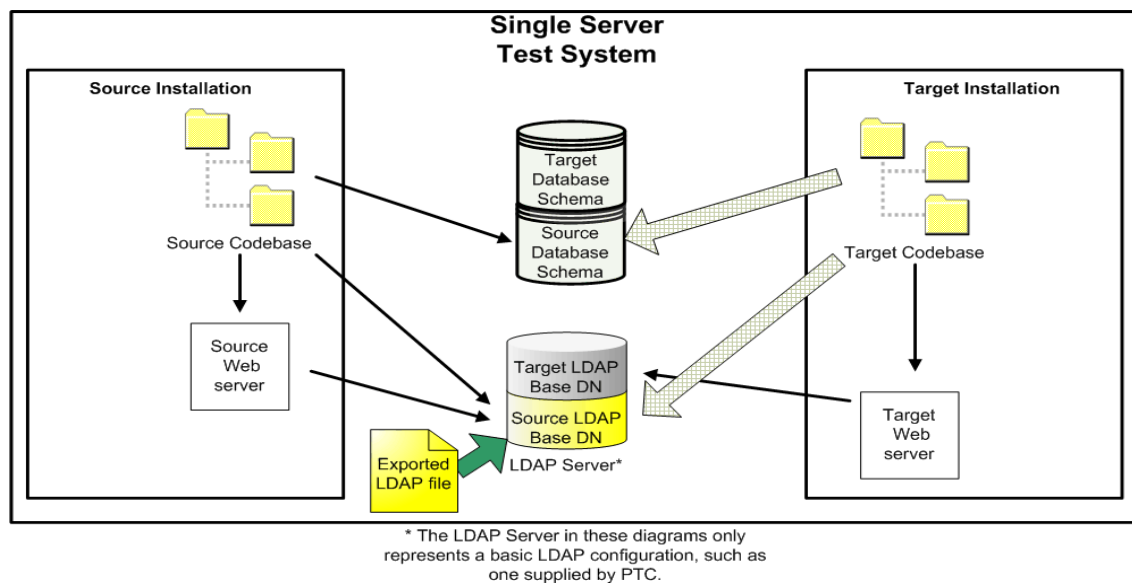
Locate the TargetConfigBranch.ldif file you saved in the Export Target Configuration Branch from Target Installation's LDAP section. Using this file, from a windchill shell, run the command:

```
> windchill
com.ptc.windchill.upgrade.tool.ImportLdapAndUpdateJndiEntries \ -
dir <Windchill_Target> \
-ldiffile <PATH-TO-LOCAL-FILE>
```

For example:

```
> windchill
com.ptc.windchill.upgrade.tool.ImportLdapAndUpdateJndiEntries \
-dir d:\ptc\Windchill \
-ldiffile TargetConfigBranch.ldif
```

This imports the configuration branch data and fixes any references to the target LDAP base-DN, changing them to reference the appropriate nodes for the source base-DN. This also adds the people node for new enterprise adapter if that is added on target but it did not exist on the source.



Reconfigure Apache Authentication Settings

You must update your target system's web server to authenticate against the "ou=people" node of the LDAP instance you are upgrading. If you are using the Apache web server and installed it using the PTC-supplied installer, you can use

the webAppConf.xml ant script which is provided with it to change the LDAP URL. This ant script is located in the Apache installation directory. To run it, you need access to ant which is installed with your target Windchill solution under the directory *<Windchill>/ant*.

In a Windchill shell, from the Apache installation directory, run the following command:

Apache 2.2.x

```
<Windchill>\ant\bin\ant -f ./Apache/webAppConfig.xml
addAuthProvider -DappName=Windchill
-DldapUrl="ldap://<ldap Server host name>/<source people dn that
corresponds to AdministrativeLdap JNDI Adapter>"
-DproviderName=AdministrativeLdap -DbindDn="<Aphleion User name>" -
DbindPwd=<Aphleion Password>

<Windchill>\ant\bin\ant -f webAppConfig.xml \
addAuthProvider -DappName=<app Name> \
-DldapUrl="ldap://<Ldap server host name>/<source people dn that \
corresponds to the EnterpriseLdap JNDI Adapter>" \
-DproviderName=<EnterpriseLdap> -DbindDn="<Aphlion User>" \
-DbindPwd=<Aphelion Password> \
```

For example, to reconfigure ldapUrl to point the ou=people LDAP node for a Windchill installation which is installed with the appName of "Windchill" on a Windows system:

```
d:\ptc\windchill\ant\bin\ant -f webAppConfig.xml \
addAuthProvider -DappName=Windchill
-
DldapUrl="ldap://ldap.internal.acme.com/ou=people,cn=Windchill170,c
n=Application%20Services,o=acme" -DproviderName=AdministrativeLdap
-DbindDn="cn=Manager" -DbindPwd=admin

d:\ptc\windchill\ant\bin\ant -f webAppConfig.xml \
addAuthProvider -DappName=Windchill
-
DldapUrl="ldap://ldap.internal.acme.com/ou=people,cn=EnterpriseLdp
, cn=Windchill170,cn=Application%20Services,o=acme"
-DproviderName=EnterpriseLdap -DbindDn="cn=Manager" -
DbindPwd=admin
```

Apache 2.0.x (Versions supported for HP-UX)

Apache does not support multiple authentication providers until version 2.2. In this case, it is necessary to use the regenWebAppConf target instead.

In a Windchill shell, from the Apache installation directory, run the following command:

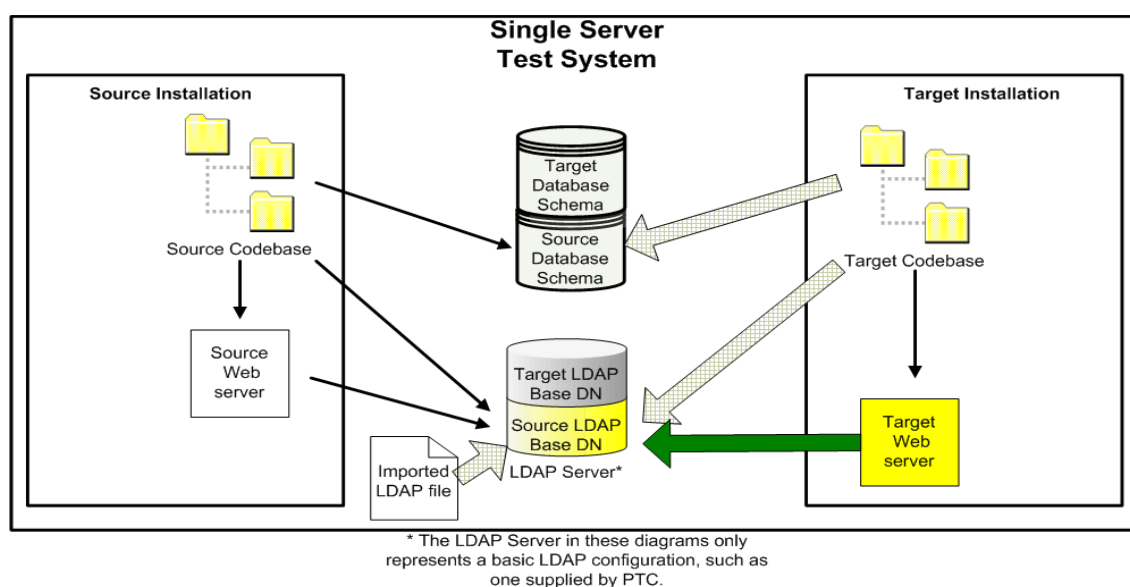
```
<Windchill>\ant\bin\ant -f webAppConfig.xml \
regenWebAppConf -DappName=<app Name> \
```

```
-DldapUrl="ldap://<Ldap server host name>/<source people dn that \
corresponds to the EnterpriseLdap JNDI Adapter>"
```

If you wish to use multiple authentication providers, it is necessary to set up an apache password file. See the *Windchill Installation and Configuration Guide - Advanced* for instructions.

Note: If you specify a location in your LDAP URL that includes spaces, such as "l=New York", you must encode the space as "%20" (the entity in HTML) to avoid a syntax error.

When you have finished executing this command, clean the cache and restart the Web server.



Configure Non-Apache Web Server

If you are using a Web server other than Apache for your target installation, refer to the *Windchill System Administrator's Guide* for details on reconfiguring other web servers to authenticate against the source LDAP's "ou=people" node.

Copy Source Installation's File Vaults to the Target Installation

If your source system uses file vaults, and the target installation is on a different host from the one that the source system runs, then you must copy the directories containing vaulted file content from the source system to the target system. PTC recommends using FTP in binary mode to copy the file content. To identify the directories that must be copied, open the "External Storage Administrator" on the source system and record the folders it lists under the local master site. When

copying the folders and their contents, make sure that the exact same folder structure is used on the target installation. Refer to the External File Vaults section of the *Windchill System Administrator's Guide* on your source system for assistance.

Other Settings

Lastly, ensure that any other production environment specific settings such as host names, ports, and web server aliases are configured appropriately for the production environment. Consult the *Windchill Installation and Configuration Guide - Windchill* as well as the *Windchill System Administrator's Guide*.

Summary Checklist

This checklist summarizes the steps, described in this chapter, to configure the target system to use the source data.

- ☐ Export the target system's configuration branch
- ☐ Configure the Database Connection for the Target System to the Source Relational Database
- ☐ Reconfigure the Target System Base DN to use the Source LDAP Base DN
- ☐ Import the Target Configuration Branch under the Source Base DN in the Source LDAP.
- ☐ Reconfigure the Apache Authentication Settings
- ☐ Copy the Source File Vaults to the Target
- ☐ Ensure that the production environment settings are configured appropriately.

7

Executing the Upgrade Manager

This chapter describes what you must do to upgrade a Windchill solution to the current release. The same sequence of tasks is applicable to a practice upgrade using a test installation or an upgrade of a production system. For an overview of the entire upgrade process, consult the chapter, Planning an Upgrade.

Topic	Page
Properties to be Set on the Target System.....	7-2
Using the Upgrade Manager to Upgrade the Database	7-4
Summary Checklist	7-25

Properties to be Set on the Target System

Upgrade.xconf

At 9.0, there is an upgrade.xconf file.

In this file are the properties that are used specifically for upgrade and will need to be updated in the upgrade.xconf if you feel the values need to be changed.

The properties in the upgrade.xconf file is located in Windchill/codebase. The properties in the file are:

- wt.upgrade.upgradeSchema.inactivityTimeout
- wt.upgrade.upgradeSchema.overallTimeout
- wt.upgrade.addConstraints.inactivityTimeout
- wt.upgrade.addConstraints.overallTimeout
- com.ptc.windchill.upgrade.directives.migrator.verbose
- com.ptc.windchill.upgrade.template migration.collaboration.option

Upgrade Properties:

Property	Default Value	Options for the values	Solution	More Details
wt.access.migration.enable	true	true or false	All	Changes for this Release
wt.access.migration.enable.download	true	true or false	All	Changes for this Release
wt.access.migration.enable.modify_content	true	true or false	All	Changes for this Release
wt.access.migration.enable.change_domain	true	true or false	All	Changes for this Release
wt.access.migration.enable.change_context	true	true or false	All	Changes for this Release

Property	Default Value	Options for the values	Solution	More Details
wt.access.migration.enable.create_by_move	true	true or false	All	Changes for this Release
wt.access.migration.enable.set_state	true	true or false	All	Changes for this Release
wt.access.migration.enable.modify_identity	true	true or false	All	Changes for this Release
com.ptc.windchill.upgrade.templatemigration.collaboration.option	Blank	ALL_TEAM_MEMBER_S or ONLY_ROLE	ProjectLink or ProjectLink /PDMLink	Changes for this Release
wt.upgrade.upgradeSchema.inactivityTimeout	60000	60000 times how many minutes you want to increase it to	All	Trouble shooting section
wt.upgrade.upgradeSchema.overallTimeout	60000	60000 times how many minutes you want to increase it to	All	Trouble shooting section
wt.upgrade.addConstraints.inactivityTimeout	60000	60000 times how many minutes you want to increase it to	All	Trouble shooting section
wt.upgrade.addConstraints.overallTimeout	60000	60000 times how many minutes you want to increase it to	All	Trouble shooting section

Property	Default Value	Options for the values	Solution	More Details
com.ptc.windchill.upgrade.directives.migrator.verbose	False	True or false	All	Trouble shooting section
wt.upgrade.skipAllIssuesAfterFirstFailure	True	True or false		Changes for this Release
wt.inf.container.AddSharedTeamPolicyRulesToOrg	Blank	True or false		Trouble shooting section

Note: Family table validation must be turned off during the upgrade process. Do this by setting the following property using the xconfmanager utility in wt.properties for the duration of upgrade:

```
wt.epm.familytable.validate.mandatory=false
```

Once the upgrade is complete, this value must be reset to true.

Using the Upgrade Manager to Upgrade the Database

The Upgrade Manager is a utility that guides you through all the necessary steps to upgrade a Windchill database to 9.0 from release 7.0 or 8.0. This utility is located in your Windchill solution installation under the <Windchill>\bin directory. Assuming that this bin directory is in the path and Apache is running, you can start the Upgrade Manager as follows:

Windows

Open a Windchill shell and enter the following command:

```
UpgradeManager
```

UNIX

Enter the following command:

```
UpgradeManager.sh
```

Linux

You must edit the UpgradeManager.sh file before running it.

1. Open the UpgradeManager.sh file in a text editor.

2. Change the following line:

```
#!/usr/bin/sh
```

TO

```
#!/bin/sh
```

3. Save the file.
4. Enter the following command:

```
UpgradeManager.sh
```

If you use this command with no arguments, all the output generated will go to the log file `UpgradeManager.log` which is located in the `<Windchill>\logs` directory. If you would like the output to be displayed in the window, you should launch the Upgrade Manager with the '-v' option.

- For Windows, open a Windchill shell and enter the following command:

```
UpgradeManager -v
```

- For UNIX, enter the following command:

```
UpgradeManager.sh -v
```

The Upgrade Manager guides you through a series of steps using a wizard-like interface.

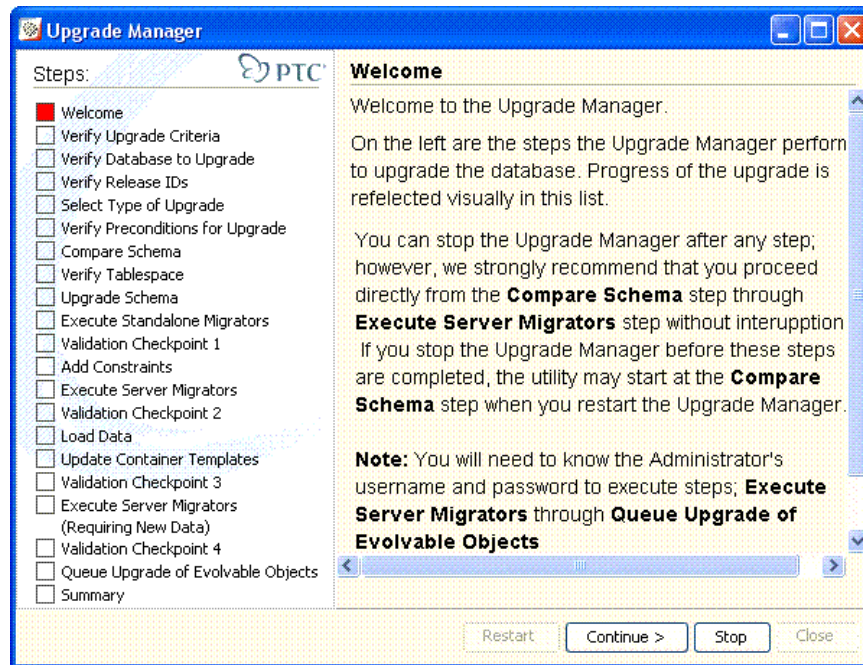
Note: If you encounter any problems during the upgrade, the Upgrade Manager can be restarted. Once the problem is resolved, you can select **Restart** if the Upgrade Manager is still running at that time, or if the utility is not running, you can restart it as described earlier and it resumes at the appropriate location in the upgrade process.

Upgrade Manager Step 1 - Welcome

The Welcome screen explains how the progress of the upgrade is rendered.

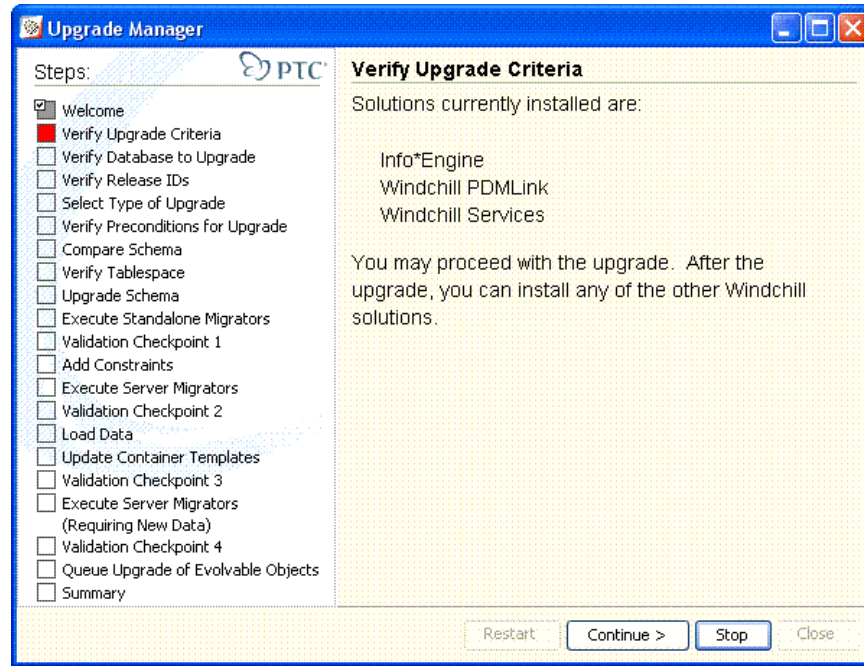
Further it reminds users that, if necessary, the Upgrade Manager can always be re-run. If the upgrade fails for some reason the Upgrade Manager can be safely restarted after the problem is corrected. If the user wants to stop the Upgrade Manager midway through the upgrade, it can be safely restarted later.

Lastly, this screen forewarns the user that the Windchill administrator's username and password is needed later on in the upgrade process.



Upgrade Manager Step 2 - Verify Upgrade Criteria

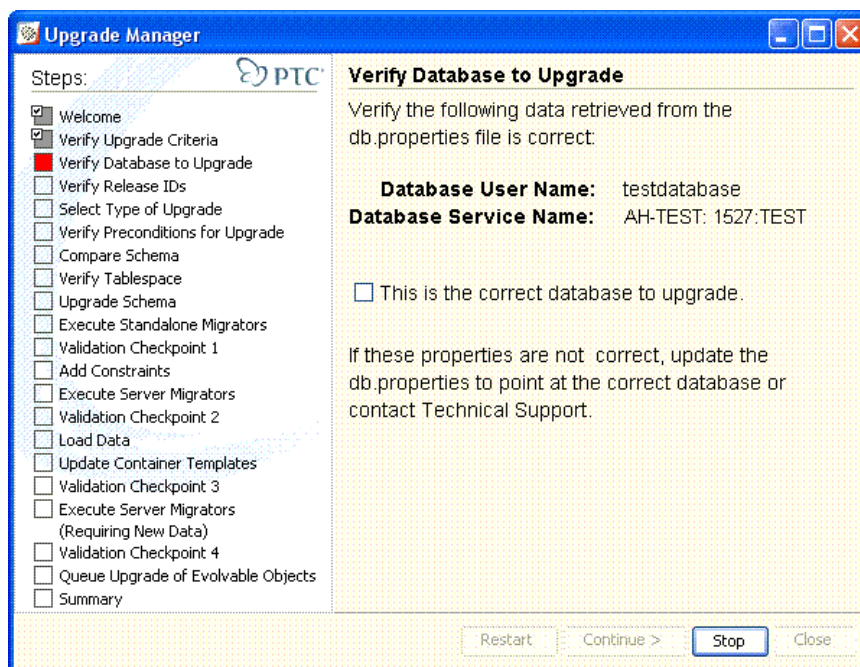
This screen lists products that are installed in your target system. This information is presented so that you can double check that your target system contains the products you expect.



Upgrade Manager Step 3 - Verify Database to Upgrade

This screen displays the database user and Oracle TNS entry of the database to be upgraded. This is the last point in the upgrade process where the user can cancel the upgrade process without modifying their database. Future steps will begin modifying the database.

The user will have to select the confirmation checkbox indicating that this is the correct database before the **Continue >** button is enabled.

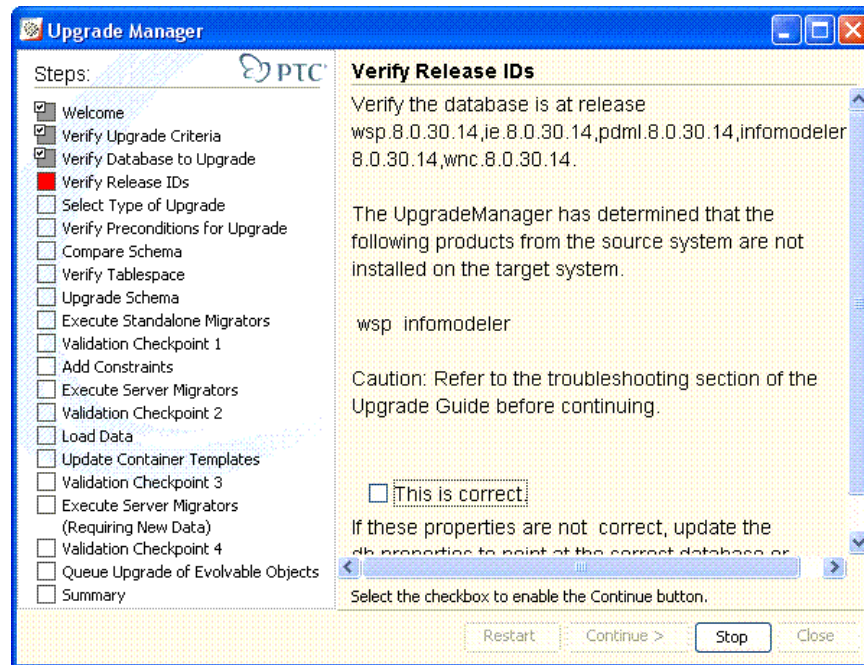


Upgrade Manager Step 4 - Verify Release IDs

The Upgrade Manager connects the database and looks up installation and upgrade history. The release IDs of all components currently installed in the database are displayed to the user.

If you are re-starting the Upgrade Manager because of a failure midway through the upgrade, or because you were interrupted and decided to continue the upgrade process later, this screen indicates that the database has been partially upgraded. It lists the release IDs of the products that the Upgrade Manager is upgrading your database to as well as the release IDs of the source database before the upgrade process was started.

The user will have to select the confirmation checkbox indicating that the information listed is correct before the **Continue >** button is enabled.

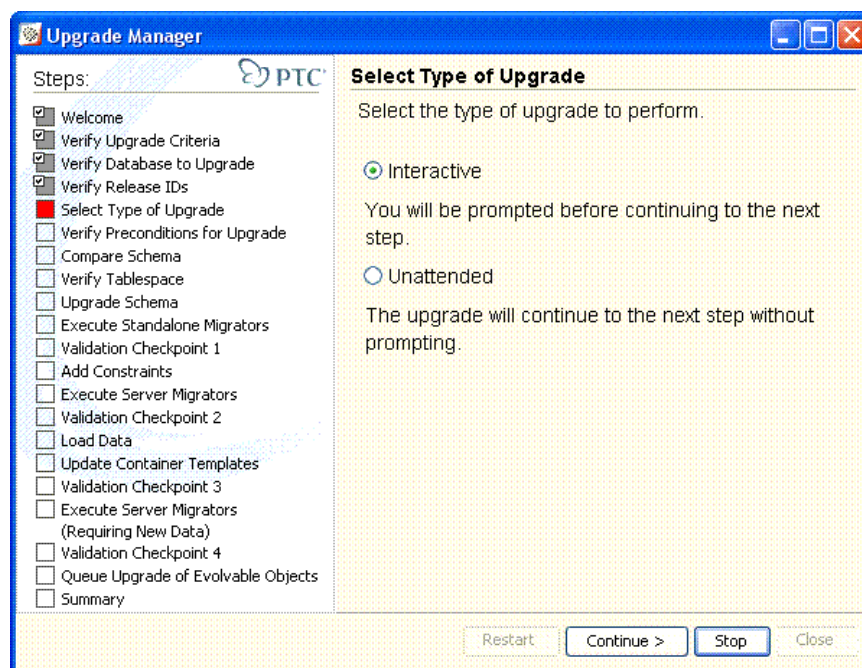


Upgrade Manager Step 5 - Select Type of Upgrade

This step requires the selection of either **Interactive** or **Unattended** mode.

- In Interactive mode, the Upgrade Manager prompts you at each step before continuing on to the next step. Select Interactive mode when first executing the upgrade to allow intervention if issues arise.
- In Unattended mode, the Upgrade Manager steps through the upgrade without prompting the user. Once the trial upgrades have succeeded, you may choose to run in Unattended mode. Depending on the size and content of your database, the upgrade can run for many hours, so Unattended mode allows the Upgrade Manager to proceed through all the steps without requiring you to constantly monitor it. The utility initially prompts you for the administrator's username and password; after that it attempts to perform the entire upgrade without user input. If an error occurs, the Upgrade Manager stops.

Selecting **Continue** > commences the upgrade process.



Upgrade Manager Step 6 - Verify Preconditions for Upgrade

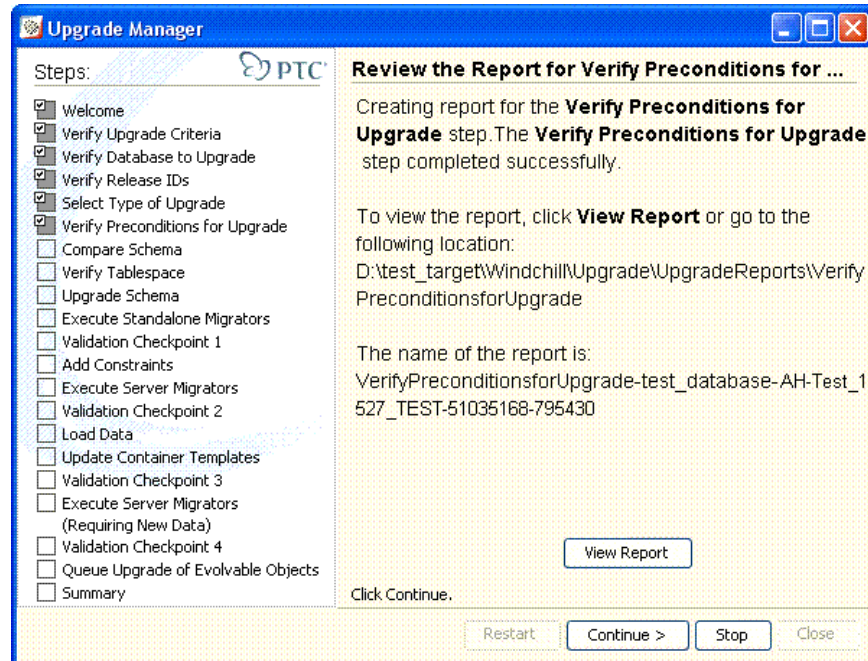
In this step, the Upgrade Manager verifies that pre-upgrade steps on the source system have been completed and the required properties for the upgrade to be successful are set.

As in several of the following steps in this process, the Upgrade Manager performs the upgrade tasks through the execution of a series of migrators. In such steps, the Upgrade Manager generally proceeds as follows:

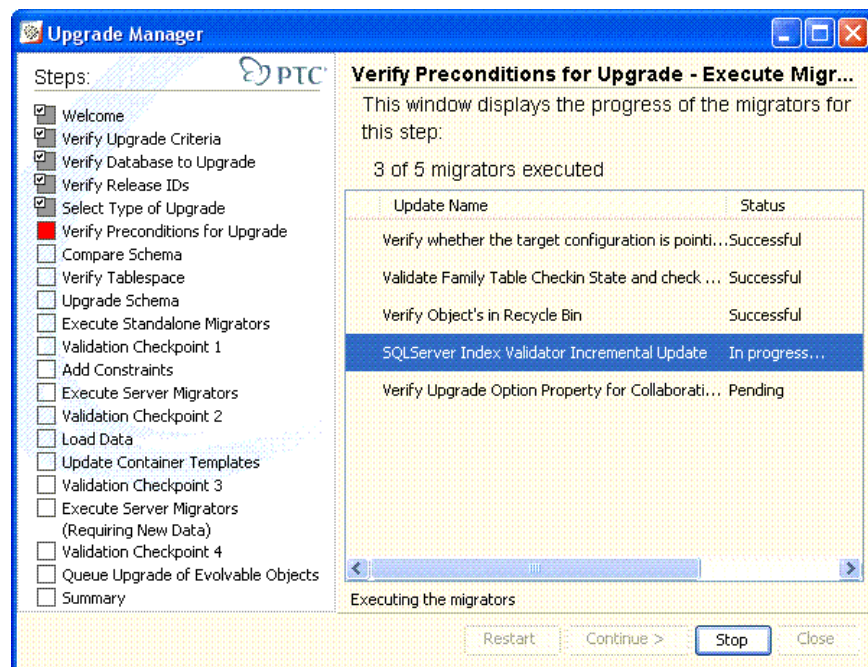
1. Determines and retrieves the migrators required for this step.
2. Executes the migrators
3. Creates a report that compiles the results of all the migrators.

The following screenshots demonstrate this process for the Verify Preconditions for Upgrade step.

In Interactive mode, after retrieving the required migrators, the Upgrade Manager displays the list:

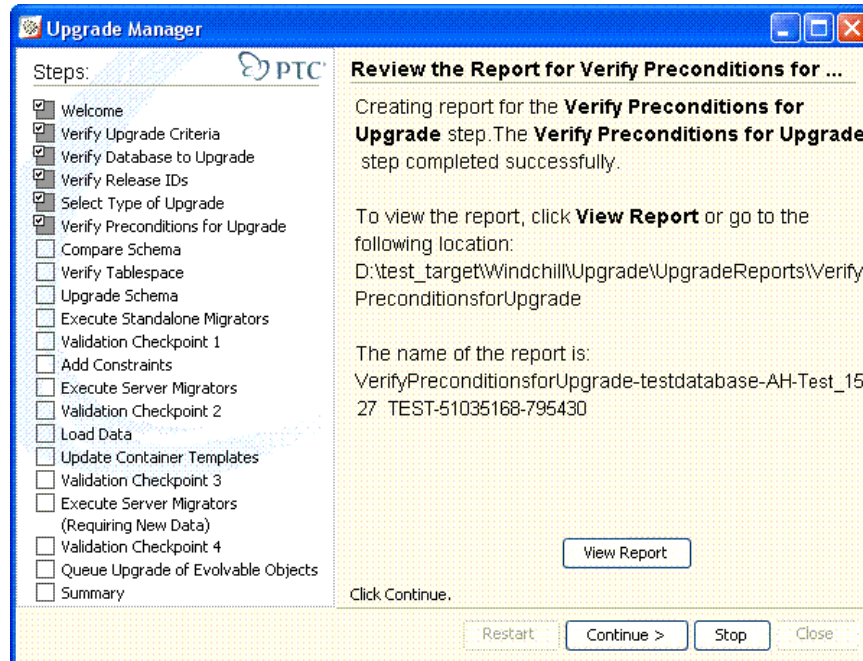


While the migrators are running, the Upgrade Manager displays the current status:



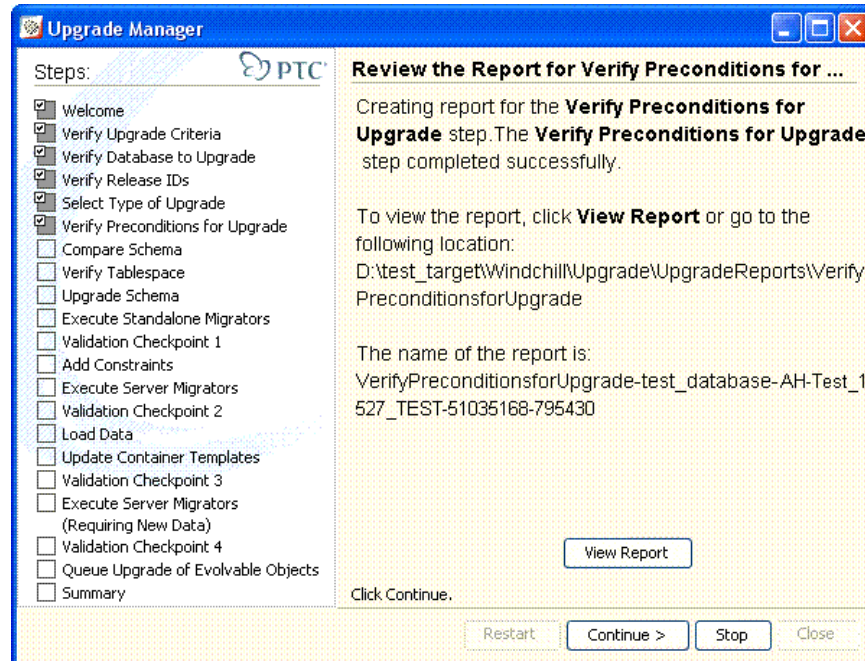
After the migrators execute, the Upgrade Manager creates a report to summarize the results. In Interactive mode, the Upgrade Manager displays the path to this report and provides a link for viewing it. You can also view this report by navigating to it from the report's index page located at:

<Windchill>/Upgrade/index.html



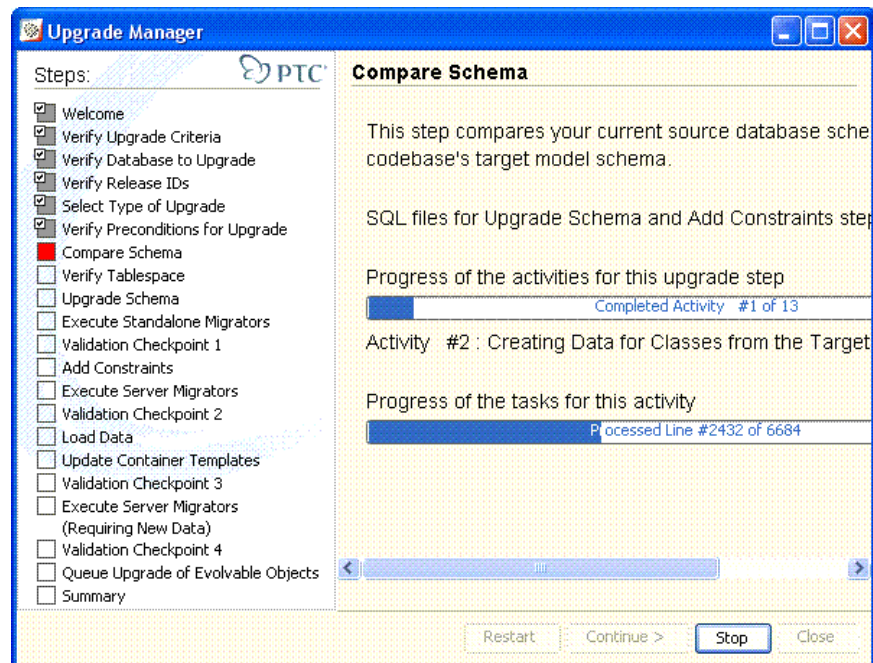
If any migrators fail, details about their failures are included in this report. A migrator may be skipped because it depends upon other migrators that have failed; skipped migrators are identified in the report as well. In addition to the report, the Upgrade Manager creates a CSV file in the same directory that lists, for each migrator, its execution status (success/failure), its start time, and its end time. If one or more migrators fail, review the report and work with PTC technical support to resolve the problem. Then, restart the Upgrade Manager to continue the upgrade process.

Even if no problems have been encountered, it is good practice to review this report before proceeding to the next step.



Upgrade Manager Step 7- Compare Schema

In this step, the Upgrade Manager compares the schema of the source database against the persistence metamodel of the target system (stored in its introspection information). The result of this comparison will be a report summarizing all of the differences and scripts that will be run later by the Upgrade Manager to upgrade your source database's schema so that it is compatible with the target system.

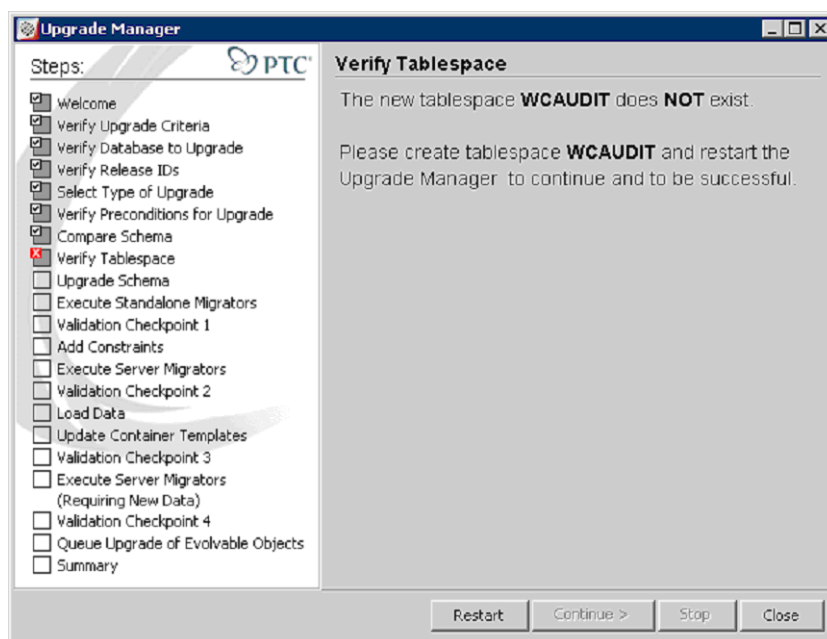


Once the comparison is complete, a report of the schema differences is produced. In Interactive mode, the Upgrade Manager displays the path to this report and provides a link for viewing it. You can also view this report by navigating to it from the report's index page located at:

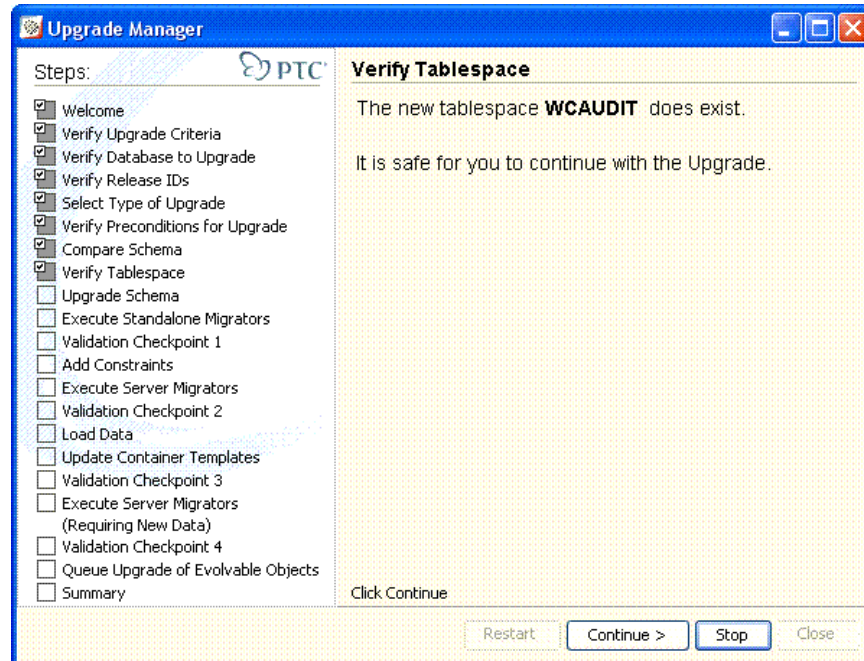
<Windchill>/Upgrade/index.html

Upgrade Manager Step 8 - Verify Tablespace

At 9.0 a new tablespace WCAUDIT was added to the Windchill out of the box database, there are new tables that have been added at 9.0 and are assigned to the new tablespace. If the tablespace WCAUDIT does not exist, the next step will fail by displaying the following:



See the *Windchill Customizer's Guide* for more information on WCAUDIT. The following shows the success message:



There are pre-existing tables now being modeled to use the new tablespace for a new installation. The script `MoveTablesToNewTablespaceWork-<schema name>-<oracle host>_<oracle port><host>-<timestamp>.sql` located at `Windchill/Upgrade` is created as part of the Compare Schema step. The purpose of the script is to move the pre-existing table to the new tablespace to match a new system out-of-the-box. If you want your database to match an out-of-the-box database, execute the script. The script is optional because customizations need to be left in place.

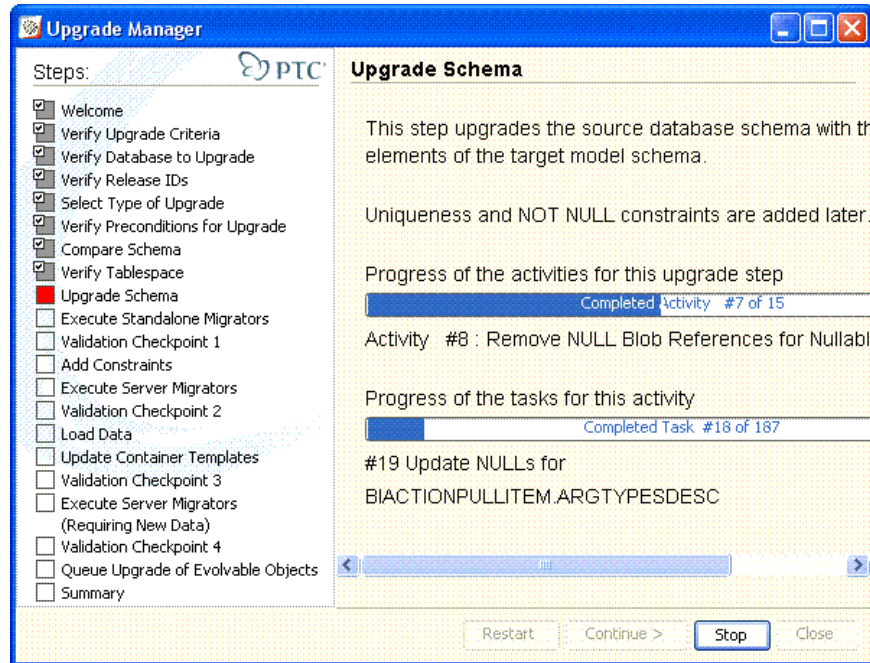
Upgrade Manager Step 9 - Upgrade Schema

In this step, the Upgrade Manager starts upgrading your source database schema so that it is compatible with the target installation. This includes:

- Adding new tables
- Adding columns and non-unique indices to tables that were present in the source system's database
- Creating or rebuilding stored procedures

The addition of unique and not null constraints is postponed for existing tables until Upgrade Manager Step 10 - Add Constraints.

Note: The Upgrade Manager never removes tables or columns. These are left in place and the data is untouched. If you want to reclaim the space from these unused tables or columns, you can do so independently after the upgrade is complete. The schema comparison report produced in the last step enumerates these tables and columns. The Upgrade Manager does drop non-modeled indexes.



Once the comparison is complete, a report of the changes made is produced. In Interactive mode, the Upgrade Manager displays the path to this report and provides a link for viewing it. You can also view this report by navigating to it from the report's index page located at:

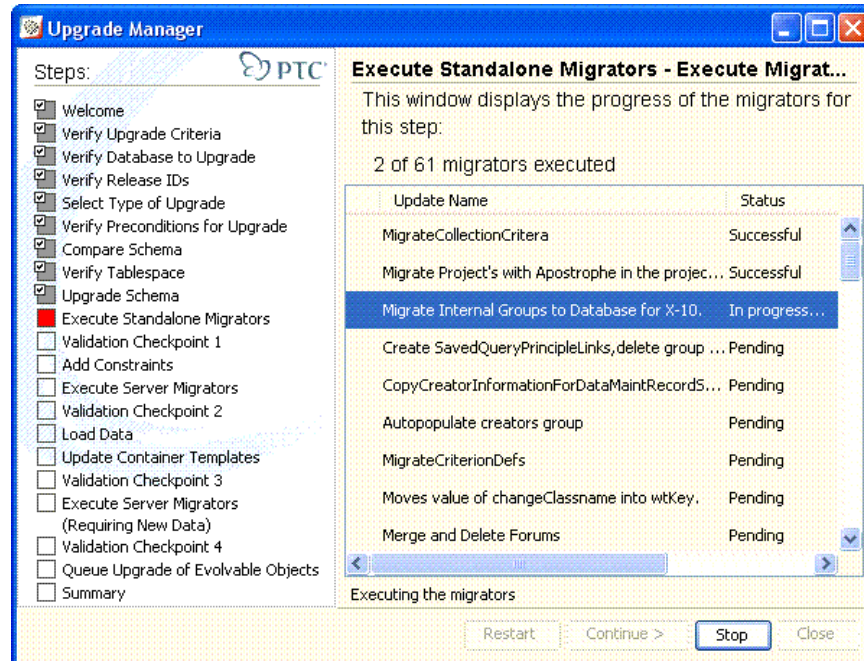
<Windchill>/Upgrade/index.html

Upgrade Manager Step 10 - Execute Standalone Migrators

During this step, the Upgrade Manager performs a number of data migrations on your source database.

In Interactive Mode, after retrieving the list of migrators to run, it shows you the list, in a similar manner to Step 6 - Verify Preconditions for Upgrade.

Next, the Upgrade Manager executes each migrator in the order listed. This may take a while depending on the amount of data in your database.



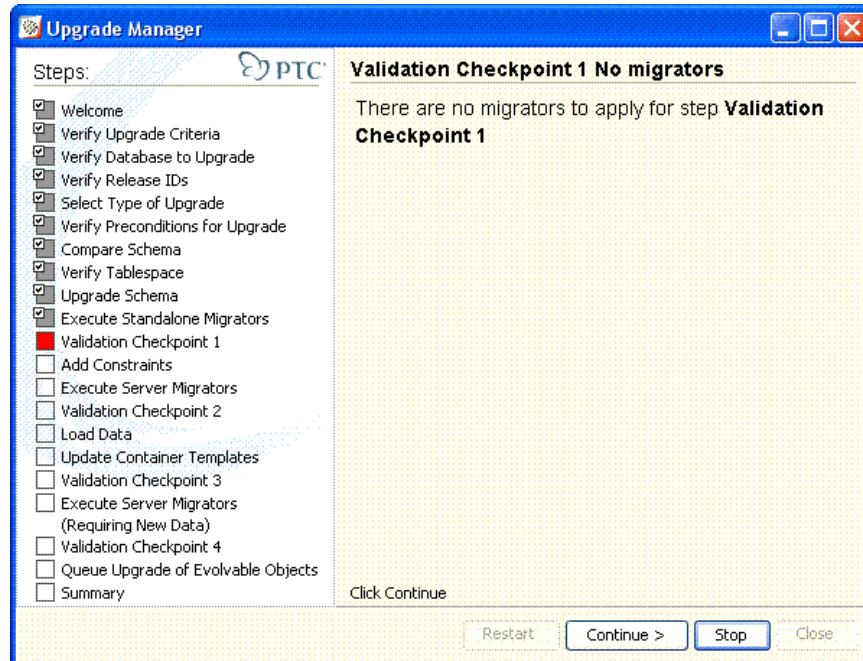
Once the migrators have all been executed, a report is produced. In Interactive mode, the Upgrade Manager displays the path to this report and provides a link for viewing it. You can also view this report by navigating to it from the report's index page located at:

<Windchill>/Upgrade/index.html

Upgrade Manager Step 11 - Validation Checkpoint 1

At Validation Checkpoints, migrators may be applied to check the data to make sure that it is safe to proceed to the next phase. If any are to be executed, the Upgrade Manager will proceed in a manner similar to that described for Step 6 - Verify Preconditions for Upgrade.

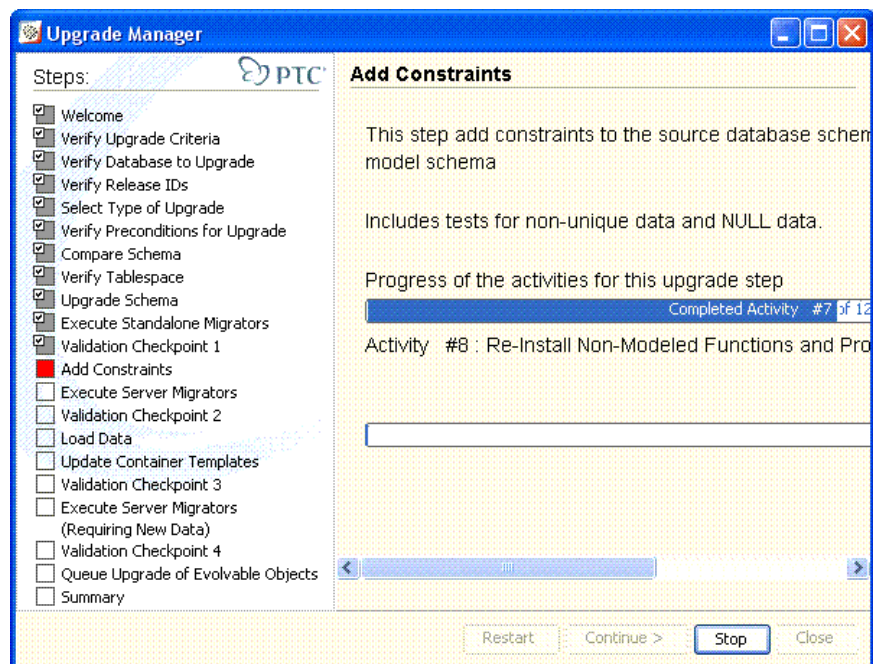
If no such migrators are found, then the Upgrade Manager displays the following.



Note: This screen is not displayed when running Unattended Mode.

Upgrade Manager Step 12 - Add Constraints

This is that last step in which schema changes are made by the Upgrade Manager. The utility adds NULL and uniqueness constraints to database tables.



Once the constraints have all been added a report is produced. In Interactive mode, the Upgrade Manager displays the path to this report and provides a link for viewing it. You can also view this report by navigating to it from the report's index page located at:

<Windchill>/Upgrade/index.html

It is expected that the migrators in the previous step, "Execute Standalone Migrators," have made changes to table contents so that the constraints can be applied. If you experience failures in this step, it may be because data in your customizations do not allow the new uniqueness constraints to be added. Contact PTC technical support in this event for assistance in resolving the problem, then restart the Upgrade Manager to continue the upgrade process.

Upgrade Manager Step 13 - Execute Server Migrators

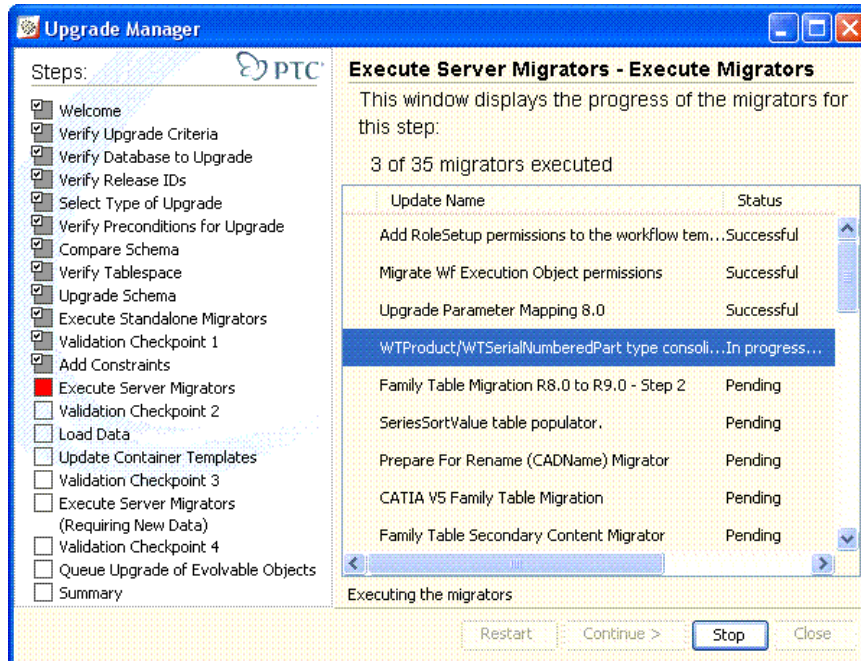
This is the first step of the Upgrade Manager that makes use of the Windchill method server. In Interactive mode, after retrieving the list of migrators to run, it shows you the list, in a similar manner to Step 6 - Verify Preconditions for Upgrade.

Next the Upgrade Manager attempts to start the server manager and method server. If your web server or servlet engine is not running, an error message appears. Ensure that these servers are running, then select **Restart**.

Once the method server is started, if in Interactive mode the Upgrade Manager prompts you to enter the username and password of the Windchill solution administrator.

Note: If you are successfully authenticated, but you did not enter an administrator's username, you won't be able to execute the step. If you use Basic HTTP authentication, you will have to exit and restart the Upgrade Manager; otherwise, you may have to restart your web server in order to force the web server to log you out so that you can log in as a different user.

Next, the Upgrade Manager runs the migrators listed in the summary screen within the method server. The following screen displays the progress of the server migrators:



Once the migrators have all been executed, a report is produced. In Interactive mode, the Upgrade Manager displays the path to this report and provides a link for viewing it. You can also view this report by navigating to it from the report's index page located at:

<Windchill>/Upgrade/index.html

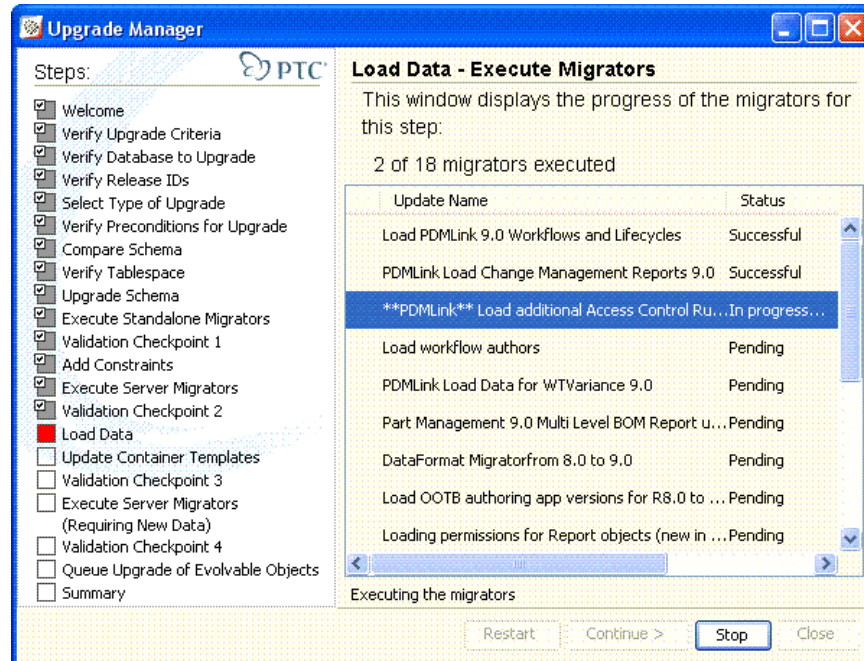
Upgrade Manager Step 14 - Validation Checkpoint 2

At Validation Checkpoints, migrators may be applied to check the data to make sure that it is safe to proceed to the next phase. If any are to be executed, the Upgrade Manager will proceed in a manner similar to that described for Step 6 - Verify Preconditions for Upgrade.

Upgrade Manager Step 15 - Load Data

In this step, the Upgrade Manager loads any data that is new since the source system's release and is essential for your upgraded Windchill solution to function properly.

The sequence of steps that occur and the type of report that is produced in this step is the same as for Upgrade Manager Step 13 - Execute Server Migrators. The primary difference is that when the server manager and method servers are restarted, there may not be a login prompt.

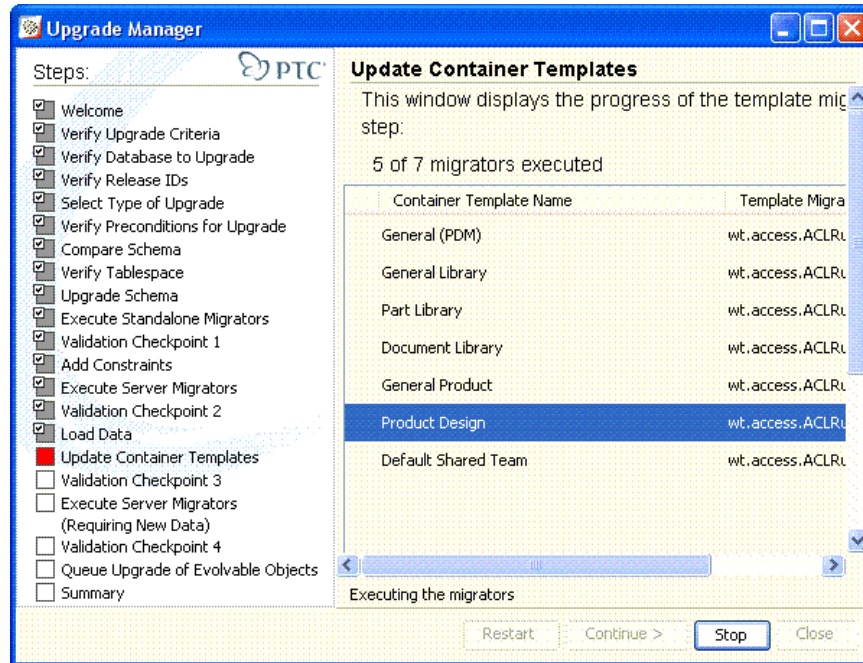


Once the migrators have all been executed, a report is produced. In Interactive mode, the Upgrade Manager displays the path to this report and provides a link for viewing it. You can also view this report by navigating to it from the report's index page located at:

<Windchill>/Upgrade/index.html

Upgrade Manager Step 16 - Update Container Templates

In this step, the Upgrade Manager modifies all the container templates including customer templates to match the current release's schema where appropriate. Some of the changes made to these templates may depend on the properties selected for upgrade. Please refer to the section Properties to be Set on the Target System for more details.



Once the migrators have all been executed, a report is produced. In Interactive mode, the Upgrade Manager displays the path to this report and provides a link for viewing it. You can also view this report by navigating to it from the report's index page located at:

<Windchill>/Upgrade/index.html

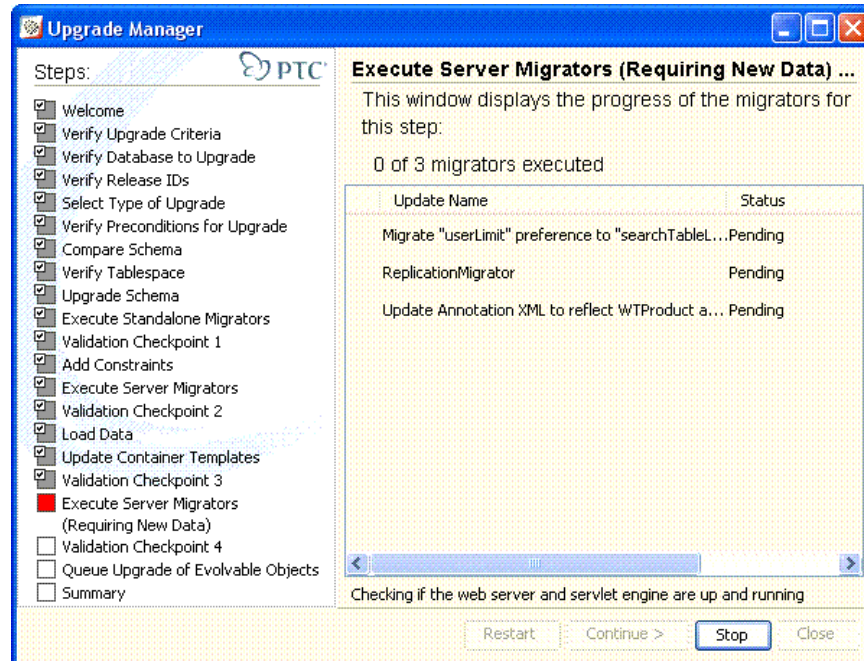
Please review the generated report to make sure no unexpected changes are made to these container templates.

Upgrade Manager Step 17 - Validation Checkpoint 3

At Validation Checkpoints, migrators may be applied to check the data to make sure that it is safe to proceed to the next phase. If any are to be executed, the Upgrade Manager will proceed in a manner similar to that described for Step 6 - Verify Preconditions for Upgrade.

Upgrade Manager Step 18 - Execute Server Migrators (Requiring New Data)

This step runs any final migrators that need to run in the method server after new product data has been loaded. The sequence of steps and the type of report is the same as in Step 13 - Execute Server Migrators.



Once the migrators have all been executed, a report is produced. In Interactive mode, the Upgrade Manager displays the path to this report and provides a link for viewing it. You can also view this report by navigating to it from the report's index page located at:

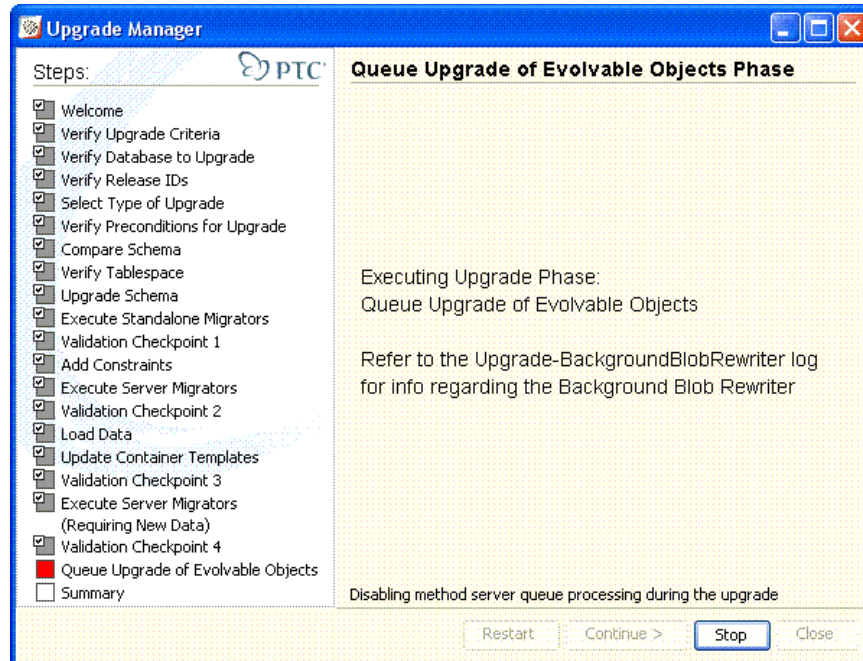
<Windchill>/Upgrade/index.html

Upgrade Manager Step 19 - Validation Checkpoint 4

At Validation Checkpoints, migrators may be applied to check the data to make sure that it is safe to proceed to the next phase. If any are to be executed, the Upgrade Manager will proceed in a manner similar to that described for Step 6 - Verify Preconditions for Upgrade.

Upgrade Manager Step 20 - Queue Upgrade of Evolvable Objects

This is the final step that the Upgrade Manager executes. The Upgrade Manager schedules a long running background process that attempts to ensure that all instances of Java objects stored inside BLOBs and SMALLBLOBs in your database are evolved to their current class schema versions. The following screen appears:



Since this evolution process is long running, it is scheduled to run in schedule queues during overnight hours and may not complete for several days. To communicate any issues it encounters during the evolution process, it sends emails to the administrative user. Confirm that your target installation's email server is configured properly and the Administrator has a valid email address.

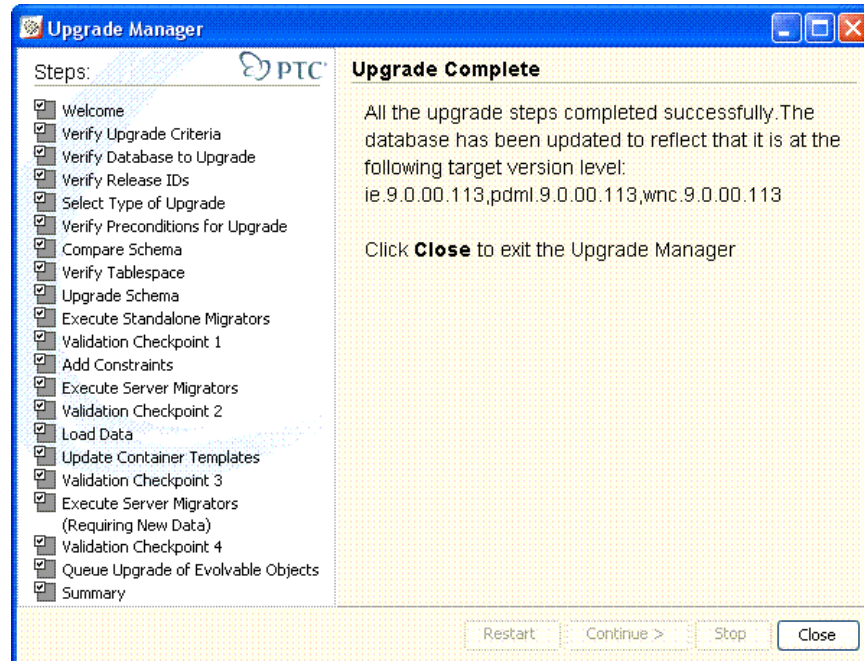
If this step succeeds, your system is upgraded.

To view the log, navigate to:

<Windchill>/logs/Upgrade-BackgroundBlobRewriter.log.

Upgrade Manager Step 21 - Summary

The summary step appears if all preceding steps succeed.



Summary Checklist

This checklist summarizes the steps, described in this chapter, to run the Upgrade Manager.

- ☐ Set upgrade properties using `upgrade.xconf` and `xconfmanager`.
- ☐ Run the Upgrade Manager.

Performing Post-upgrade Steps

This chapter describes activities you should perform on your target system following an upgrade, before deploying the system to users. The same sequence of tasks is applicable to a practice upgrade using a test installation or an upgrade of a production system. For an overview of the entire upgrade process, consult the chapter, Planning an Upgrade.

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Executing WinDU Diagnostic Tasks	8-2
Remove Unreferenced File Content Vaults for Deleted Projects (Optional)	8-3
Updating the Family Tables in Pro/ENGINEER Wildfire	8-3
Execute the Grant Meeting Permission Utility for Winchill PDMLink	8-3
Post Upgrade Steps for Windchill Integration for Rational ClearCase	8-3
Summary Checklist	8-4

Reset Properties

Once the upgrade is complete, reset `wt.epm.familytable.validate.mandatory` to `true`.

Restart your servlet engine

Restart your servlet engine (For example, Tomcat) before using your upgraded Windchill installation.

Verify Vaults Are Properly Configured

If your source system used file vaults, confirm that you properly copied the file vault content to the target system before proceeding. On the target system open the **External Storage Administrator > Vault Configuration**. Under the target system's host, check that all folder mounts are valid. If they are not, then the content in the vaults will not be accessible. Next confirm that vaulted content is accessible via their content holders.

Executing WinDU Diagnostic Tasks

Execute the following WinDU tasks after running the Upgrade Manager. All issues found while running the WinDU tasks must be resolved.

For more information on each WinDU task, refer to the *Windchill Diagnostic Utility Guide*. You can download the guide from the following location:

<http://download.ptc.com/download2/products/WNC/WinDU/readme/WinDuGuide.pdf>

WinDU Diagnostic Task Name
DomainAdministeredObjectsDomainReferenceCheck
NullContainerReferencesCheck
InvalidObjects
MissingRepresentables
MissingMaster
NullNameSpaceAttributeCheck
OrganizationOwnedReference
PostUpgradeVisualizationCount
InvalidContainerTemplate
ValidateFamilyTableData

Remove Unreferenced File Content Vaults for Deleted Projects (Optional)

For customers upgrading ProjectLink systems, during the upgrade process, projects marked as deleted will be deleted from the database to save space. If your source system used file vaults, then the file content for stored in the vaults will not actually be deleted during the upgrade process. Rather, the upgrade will only remove references to the vaulted content; therefore, you may have a number of files in your vaults that are no longer referenced from the database. These can be removed to save space by following the directions for "Maintaining Your Vaults" in the *Windchill System Administrator's Guide*.

Updating the Family Tables in Pro/ENGINEER Wildfire

Starting with Windchill 8.0, enhancements have been made to the format used to store family table data and information. This new format supports the storage of the older family table format. However, any changes that are made to a member of this family table going forward will require that the entire family table gets updated to the newer format. This means that the whole family table needs to be checked out, retrieved in Pro/ENGINEER, and saved into the workspace and checked back into the server in order to update the family table to the new format.

Execute the Grant Meeting Permission Utility for Windchill PDMLink

Open a Windchill shell and execute the following:

```
java wt.meeting.GrantMeetingReadPermission
```

Recreate Non-modeled Indexes

Recreate the non-modeled indexes you listed in the preupgrade process during the step, [Capture Non-modeled Indexes](#).

Post Upgrade Steps for Windchill Integration for Rational ClearCase

After the upgrade, these steps are necessary for any newly created Rational Clearcase remote adapters. To complete the upgrade for Windchill Integration for Rational ClearCase, perform the following steps:

1. Start your Windchill solution.
2. Navigate to **Home > Utilities > Software downloads > Clear Case Adapter Installation** to download the cc.zip file.
3. Extract the cc.zip file to any location.
4. Modify the startCCAdapter.bat file as follows:

Change from:

```
set IEPROFILE=ldap://cn=manager:<Ldap Password>@<Ldap server  
host name>/<target Ldap Base DN>
```

Change To:

```
set IEPROFILE=ldap://cn=manager:<Ldap Password>@<Ldap server  
host name>/<sourceLdap Base DN>
```

5. Save the file.
6. Start the adapter.

Post Upgrade Steps for Windchill Index Search

Upgrading Windchill Index Search to the latest release if you have FAST InStream installed only requires that the bulk index tool be run after the upgrade is done. This is accomplished by performing the following steps:

1. Start your Windchill solution.
2. Open a Windchill Shell.
3. Run 'windchill wt.index.BulkIndexTool'.
4. Log in to the Bulk Index Tool.
5. Delete the index status (#8).
6. Start the indexing (#1).

There is no need to upgrade FAST InStream. For more information on installing Windchill Index Search or the Bulk Index Tool, see the *Windchill Installation and Configuration Guide - Advanced*.

Summary Checklist

This checklist summarizes the steps, described in this chapter, that you must perform on your target system after an upgrade.

- ☐ Reset the property wt.epm.familytable.validate.mandatory to true.
- ☐ Restart your servlet engine
- ☐ Open the External Storage Administrator > Vault Configuration. Under the target system's host, check that all folder mounts are valid. Next confirm that vaulted content is accessible via their content holders.
- ☐ Remove unreferenced file content vaults for deleted projects (Optional)
- ☐ Update the Web Application URL. If you changed the Web application URL when you upgrade, you must update the representations using the com.ptc.wvs.server.util.RepUpdateUtils utility.

- ☐ Update the Family Tables in Pro/ENGINEER Wildfire. Migrated family table objects need to be saved and uploaded in Windchill in order to view their internal data and verification status correctly.
- ☐ Assign logical IDs to soft attributes used in Saved Searches

9

Changes for This Release

This chapter provides information about changes to existing features and applications that are a part of Windchill 9.0. For information on new features and functionality included with Windchill 9.0, refer to *What's New in Windchill 9.0*. The chapter is organized by the source release to which a change occurred.

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Upgrading Container Templates

Preparing to Upgrade Container Templates

Before upgrading to Windchill 9.0, you should review your container templates, both loaded in Windchill and residing on the file system, and make any required changes.

Reviewing Container Templates

Templates from releases prior to Windchill 7.0 must be updated or removed, before upgrading to Windchill 9.0. These templates can be identified by downloading them and examining the resulting .xml file. Templates for Windchill 7.0 and 8.0 will have headers specifying "standard70.dtd" and "standardX05.dtd" as their DTD's, respectively. Any templates using an earlier DTD must be updated before migrating, or removed. Changes may be required beyond specifying the newer DTD. If the existing template is an unmodified template shipped with an earlier version of Windchill, you should delete it before upgrading, and load the 9.0 version of the template after upgrading. For custom templates, compare similar out-of-the-box templates from the two releases, to see what changes may be required.

Templates residing on the file system (as XML files or ZIP files, for example) are not processed during upgrade. This means that they may not function properly if loaded onto a Windchill 9.0 system. You should perform any required updates to these files before attempting to load them. Some of the changes for this release which affect templates are:

- a. New DTD (standardX10.dtd)
- b. Inclusion (via entity references) of access control rules in
<Windchill>/loadXMLFiles/accessrules for all container templates;
- c. Structural changes; for example, the relocation of access control rules from the OrgStructure element to its parent element
- d. Replacement of the ACLRule element and AdHocAclEntrySet elements with AccessControlRule and AdHocACLEntrySet, respectively
- e. Updating of access rules to include new permissions, such as Download and Modify Content;
- f. Replacement of some object types with equivalent soft types (such as wt.part.WTProduct and wt.part.WTSerialNumberedPart). This affects any type-based rules defined for these types in the templates;
- g. Required use of full domain paths in access control rules (Windchill 7.0 supported use of a domain name).

Some templates may use the <loadXMLFile> element to load data which is stored on the local file system. These referenced files are NOT updated during migration. Any such files provided by PTC will be updated when Windchill 9.0 is

installed. It is the customer's responsibility to do any required updating of custom files used for this purpose. Such updates include items c, d, e, f, and g listed previously.

In Windchill 9.0, a number of access control rules which were formerly hard-coded have been moved into the container templates. These rules now reside in files under <Windchill>/loadXMLFiles/accessrules, and are referenced in container templates by their file name as entity references in the .xml load file, for example "&orgContainerRules.xml;". At this release, PTC strongly recommends that these entity references be included in each container template; and that the contents of these files not be modified. The appropriate entity definitions must also be added to the type definition at the beginning of each template file. The entity reference(s) should be added where AccessControlRule elements would be added to the template, since their content is AccessControlRule's. Custom templates should be modified to include the appropriate entities. The required entity references for different container types are listed in the following table:

Container Type	Entity Definitions	Entity References
Organization	accessrules/orgContainerRules.xml	&orgContainerRules;
Product	accessrules/productRules.xml /accessrules/abstractContainerTeamManagedRules.xml	&productRules;
Project	accessrules/projectRules.xml /accessrules/abstractContainerTeamManagedRules.xml	&projectRules;
Program	accessrules/programRules.xml /accessrules/abstractContainerTeamManagedRules.xml	&programRules;
Library	accessrules/libraryRules.xml /accessrules/abstractContainerTeamManagedRules.xml	&libraryRules;

Custom container templates may have access control rules which conflict with the rules defined in the entity reference files described above. If this is the case, creation of containers from those templates will fail after upgrading. To avoid this problem, review your templates' access control rules against the rules found in <Windchill>/loadXMLFiles/accessrules. Conflicts should be resolved by removing or updating the access control rules in the templates.

Properties controlling the New Access Control Permission Migrator:

New access control permissions are added to existing access control rules and to rule definitions in container templates, during the migration process. The purpose of this migration is to maintain the behavior defined by R7 or R8 access control rules in the R9 environment. The migration is needed because, in R9, the new permissions are required to perform certain actions which were previously controlled by the earlier permissions. NOTE, the result of this migration does not correspond exactly to a non-migrated ("new") release 9 installation!

The new access control permissions allow finer-grained control of some actions, and these are used to greater advantage in new installations; but the default migrator action is to maintain the access control behavior which existed before migration. Note that you can choose to disable some or all of this migration, if it does not meet your security needs. If this is the case, you may want to implement your own process to set the new access control permissions to meet your needs.

The New Access Control Permission Migrator affects existing access control policy rules; existing ad hoc access control rules; lifecycle templates with access control rules (AdHocAclSpec objects); and container templates which include access control policy rules or ad hoc access control rules. It sets the new access control permissions based on existing permissions and on the type of object the access control rule affects. Since all objects are subtypes of WObject, all the new permissions are considered applicable to WObject. The permissions will also be applied to subtypes of the affected class. This table summarizes the setting of the new access control permissions:

Permission	Same setting as	Classes Affected
Download	Read	wt.content.ContentHolder, wt.fc.WObject
Modify Content	Modify	wt.content.ContentHolder, wt.fc.WObject
Set State	See Text that follows.	wt.lifecycle.LifeCycleManaged, wt.fc.WObject
Change Domain	Delete	wt.admin.DomainAdministered, wt.fc.WObject
Create by Move	Create	wt.admin.DomainAdministered, wt.fc.WObject
Change Context	Delete	wt.inf.container.WContained, wt.fc.WObject

Permission	Same setting as	Classes Affected
Modify Identity	Modify	wt.access.IdentityAccessControlled, wt.fc.WTObject

The Set State permission requires a different migration strategy. In 8.0, non-administrative users can set the state of a LifeCycleManaged object if they have Create permission for wt.maturity.PromotionNotice. The migrator does not add Set State permission to any ad hoc access control rule, or to any AdHocAclSpec objects. For each existing policy rule granting Create permission for wt.maturity.PromotionNotice or wt.fc.WTObject (in any state), the migrator will add a policy rule granting that principal the Set State permission for wt.fc.WTObject (in all states). If an access policy rule for WTObject already exists for the same type and domain, the Set State permission will be added to the existing rule.

You can disable some or all of the new access control permission migration, if it does not suit your security requirements. If this is the case, you may want to implement your own process to set appropriate values for these permissions.

The following properties control the New Access Control Permissions migrator:

Property	Permission Affected	Default Value	Description
wt.access.migration.enable	all new permissions	true	If true, the migrator is enabled. If false, no migration of permissions is performed.
wt.access.migration.enable.download	Download	true	if true, this permission is set as described previously
wt.access.migration.enable.modify_content	Modify Content	true	if true, this permission is set as described previously
wt.access.migration.enable.change_domain	Change Domain	true	if true, this permission is set as described previously

Property	Permission Affected	Default Value	Description
wt.access.migration.enable.change_context	Change Context	true	if true, this permission is set as described previously
wt.access.migration.enable.create_by_move	Create By Move	true	if true, this permission is set as described previously
wt.access.migration.enable.set_state	Set State	true	if true, this permission is set as described previously
wt.access.migration.enable.modify_identity	Modify Identity	true	if true, this permission is set as described previously

Manually Updating Templates

Container Templates which are not loaded in the database at upgrade time should be manually updated by the user before loading them into the 9.0 database. The following describes the required updates related to access control rules in templates. These instructions apply to Organization Templates, Project Templates, Program Templates, Product Templates, and Library Templates:

1. The document header should be updated to reference "standardX10.dtd" instead of the earlier DTD versions used for previous releases.
2. The appropriate entity definitions and entity references should be added to the document header, depending on the type of template. Look in <Windchill>/loadXMLFiles for 9.0 templates of the same type, and use the same entity definitions found there. Also, add entity references for each entity definition; these should be inserted into the document at the same place AccessControlRule's would appear (see standardX10.dtd for the proper ordering of elements for your container type; or use the 9.0 container templates as an example).
3. Convert all ACLRule elements to AccessControlRule elements. Each ACLRule element must be removed from the document, and the equivalent AccessControlRule element must be added at the appropriate point in the document (as per standardX10.dtd). If two or more ACLRule's exist for the same domain, type, state, and principal, they should be represented by a single AccessControlRule combining their content. The conversion of elements is as follows:

- a. The ACLRule's "domainName" and "ownerDomain" elements should be combined to form the AccessControlRule's "domainName", which must be a full domain path (beginning with "/").
- b. The ACLRule's "aclClassName" should be used to form an "externalTypeId" element for the AccessControlRule. In most cases, this is done by adding a "WCTYPE|" string to the beginning of the aclClassName. If aclClassName was "wt.part.WTProduct" or "wt.part.WTSerialNumberedPart", use "wt.part.WTPart|WTProduct" or "wt.part.WTPart|WTSerialNumberedPart" instead.
- c. If the ACLRule contains a "lifecycleState" value other than "all", it should be added to the AccessControlRule.
- d. A WTPrincipalReference element should be added to the AccessControlRule, based on the "aclPrincipalName". Most principals will be "all", "owner", or an internal group; a few may be references to an individual or external group, which is beyond this document's scope. The correct form for "all" and "owner" are:

```
<WTPrincipalReference isInternal=false> <name>ALL
</name></WTPrincipalReference>
```

```
<WTPrincipalReference isInternal=false>
<name>OWNER</name></WTPrincipalReference>
```

Internal groups include "teamMembers", which replaces "confirmed" and "all participating members"; "GUEST"; and role groups, such as "PROJECT MANAGER". The proper representations for these are, for example,

```
<WPrincipalReference
isInternal="true"><groupName>teamMembers</groupName><groupType>teamMembers</groupType></WPrincipalReference>
```

```
<WPrincipalReference
isInternal="true"><groupName>GUEST</groupName><groupType>GUEST</groupType></WPrincipalReference>
```

```
<WPrincipalReference isInternal="true"><groupName>PROJECT
MANAGER</groupName><groupType>roleGroup</groupType></WPrincipalReference>
```

4. If the ACLRule's "aclOn" element is "true", add a "grantPermissionSet" to the AccessControlRule; if it is "false", add a "denyPermissionSet" to the AccessControlRule. Within the "grantPermissionSet" or "denyPermissionSet", add an "AccessPermissionSet" element. Within the "AccessPermissionSet", add "permissionField" or "permissionKey" entries corresponding to the permissions found in the ACLRule's "aclPermissionList" element.
5. Add appropriate "permissionField" or "permissionKey" values for the new access control permissions, as described in the documentation for the New Access Control Permission Migrator. If this migrator does not suit your security needs, set these permissions appropriately.

The following example compares a product template from Windchill 8.0 with the upgraded (Windchill 9.0) version of the same template, to illustrate the changes

Windchill 8.0 productTemplate.xml:

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE ProductConfig SYSTEM "standardX05.dtd">

<ProductConfig>
  <OrgStructure>

    <ACLRule>
      <domainName>/Default</domainName>
      <aclClassName>wt.doc.WTDocument</aclClassName>
      <aclOn>true</aclOn>
      <aclPrincipalName>CONFIRMED</aclPrincipalName>
      <aclPermissionList read="true"/>
    </ACLRule>
    <ACLRule>
      <domainName>/Default</domainName>
      <aclClassName>wt.doc.WTDocument</aclClassName>
      <aclOn>true</aclOn>
      <aclPrincipalName>CONFIRMED</aclPrincipalName>
      <aclPermissionList modify="true" create="true"
delete="true"/>
      <lifecycleState>INWORK</lifecycleState>
    </ACLRule>
    <ACLRule>
      <domainName>/Default</domainName>
      <aclClassName>wt.doc.WTDocument</aclClassName>
      <aclOn>true</aclOn>
      <aclPrincipalName>CONFIRMED</aclPrincipalName>
      <aclPermissionList>
        <revisePerm enabled="true"/>
      </aclPermissionList>
      <lifecycleState>RELEASED</lifecycleState>
    </ACLRule>

  </OrgStructure>

  <ExportedRoleMemberMap>
    <projectMember>
      <Role roleType="MEMBERS"></Role>
    </projectMember>
    <projectMember>
      <Role roleType="CHANGE ADMINISTRATOR II"></Role>
    </projectMember>
    <projectMember>
      <Role roleType="CHANGE ADMINISTRATOR III"></Role>
    </projectMember>
    <projectMember>
      <Role roleType="PRODUCT MANAGER"></Role>
    </projectMember>
    <projectMember>
      <Role roleType="CHANGE ADMINISTRATOR I"></Role>
    </projectMember>
    <projectMember>
```

```

        <Role roleType="CHANGE REQUEST REVIEW BOARD"/>
    </projectMember>
</projectMember>
    <Role roleType="PROMOTION REVIEWERS"/>
</projectMember>
</projectMember>
    <Role roleType="PROMOTION APPROVERS"/>
</projectMember>
</ExportedRoleMemberMap>

<!-- Part Rules -->
<ACLRule>
    <domainName>/Default</domainName>
    <aclClassName>wt.part.WTPart</aclClassName>
    <aclOn>true</aclOn>
    <aclPrincipalName>CONFIRMED</aclPrincipalName>
    <aclPermissionList read="true"/>
</ACLRule>
<ACLRule>
    <domainName>/Default</domainName>
    <aclClassName>wt.part.WTPart</aclClassName>
    <aclOn>true</aclOn>
    <aclPrincipalName>CONFIRMED</aclPrincipalName>
    <aclPermissionList modify="true" create="true"
delete="true"/>
    <lifecycleState>INWORK</lifecycleState>
</ACLRule>
<ACLRule>
    <domainName>/Default</domainName>
    <aclClassName>wt.part.WTPart</aclClassName>
    <aclOn>true</aclOn>
    <aclPrincipalName>CONFIRMED</aclPrincipalName>
    <aclPermissionList>
        <revisePerm enabled="true"/>
        <newViewVersionPerm enabled="true"/>
    </aclPermissionList>
    <lifecycleState>RELEASED</lifecycleState>
</ACLRule>
<ACLRule>
    <domainName>/Default</domainName>

    <aclClassName>wt.part.WTPartSubstituteLink</aclClassName>
    <aclOn>true</aclOn>
    <aclPrincipalName>CONFIRMED</aclPrincipalName>
    <aclPermissionList read="true" create="true"
modify="true" delete="true"/>
</ACLRule>
<ACLRule>
    <domainName>/Default</domainName>

    <aclClassName>wt.part.WTPartAlternateLink</aclClassName>
    <aclOn>true</aclOn>
    <aclPrincipalName>CONFIRMED</aclPrincipalName>
    <aclPermissionList read="true" create="true"
modify="true" delete="true"/>
</ACLRule>

```

```

        <!-- Other rules omitted for purposes of this example -->
    </ProductConfig>

```

Windchill 9.0 productTemplate.xml:

```

<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE ProductConfig SYSTEM "standardX10.dtd" [
    <!ENTITY productRules SYSTEM "/accessrules/productRules.xml">
    <!ENTITY abstractContainerTeamManagedRules SYSTEM
"/accessrules/abstractContainerTeamManagedRules.xml">
]>

<ProductConfig>
    <OrgStructure/>
    <ExportedRoleMemberMap>
        <projectMember>
            <Role roleType="MEMBERS" />
        </projectMember>
        <projectMember>
            <Role roleType="CHANGE ADMINISTRATOR II" />
        </projectMember>
        <projectMember>
            <Role roleType="CHANGE ADMINISTRATOR III" />
        </projectMember>
        <projectMember>
            <Role roleType="PRODUCT MANAGER" />
        </projectMember>
        <projectMember>
            <Role roleType="CHANGE ADMINISTRATOR I" />
        </projectMember>
        <projectMember>
            <Role roleType="CHANGE REQUEST REVIEW BOARD" />
        </projectMember>
        <projectMember>
            <Role roleType="PROMOTION REVIEWERS" />
        </projectMember>
        <projectMember>
            <Role roleType="PROMOTION APPROVERS" />
        </projectMember>
    </ExportedRoleMemberMap>

    <!-- AccessControlRules included from \Windchill\loadXMLFiles\
accessrules\productRules.xml-->
    &productRules;

    <AccessControlRule>
        <domainName>/Default</domainName>
        <externalTypeId>WCTYPE|wt.doc.WTDocument</externalTypeId>
        <WTPrincipalReference isInternal="true">
            <groupName>teamMembers</groupName>
            <groupType>ALL</groupType>
        </WTPrincipalReference>
        <grantPermissionSet>
            <AccessPermissionSet>

```

```

        <permissionField name="READ" />
        <permissionField name="DOWNLOAD" />
    </AccessPermissionSet>
</grantPermissionSet>
</AccessControlRule>
<AccessControlRule>
    <domainName>/Default</domainName>
    <externalTypeId>WCTYPE|wt.doc.WTDocument</externalTypeId>
    <lifecycleState>INWORK</lifecycleState>
    <WTPrincipalReference isInternal="true">
        <groupName>teamMembers</groupName>
        <groupType>ALL</groupType>
    </WTPrincipalReference>
    <grantPermissionSet>
        <AccessPermissionSet>
            <permissionField name="MODIFY" />
            <permissionField name="CREATE" />
            <permissionField name="DELETE" />
            <permissionField name="MODIFY_CONTENT" />
            <permissionField name="CHANGE_DOMAIN" />
            <permissionField name="CREATE_BY_MOVE" />
            <permissionField name="CHANGE_CONTEXT" />
            <permissionField name="MODIFY_IDENTITY" />
        </AccessPermissionSet>
    </grantPermissionSet>
</AccessControlRule>
<AccessControlRule>
    <domainName>/Default</domainName>
    <externalTypeId>WCTYPE|wt.doc.WTDocument</externalTypeId>
    <lifecycleState>RELEASED</lifecycleState>
    <WTPrincipalReference isInternal="true">
        <groupName>teamMembers</groupName>
        <groupType>ALL</groupType>
    </WTPrincipalReference>
    <grantPermissionSet>
        <AccessPermissionSet>
            <permissionField name="REVISE" />
        </AccessPermissionSet>
    </grantPermissionSet>
</AccessControlRule>
<!-- Part Rules -->
<AccessControlRule>
    <domainName>/Default</domainName>
    <externalTypeId>WCTYPE|wt.part.WTPart</externalTypeId>
    <WTPrincipalReference isInternal="true">
        <groupName>teamMembers</groupName>
        <groupType>ALL</groupType>
    </WTPrincipalReference>
    <grantPermissionSet>
        <AccessPermissionSet>
            <permissionField name="READ" />
            <permissionField name="DOWNLOAD" />
        </AccessPermissionSet>
    </grantPermissionSet>
</AccessControlRule>
<AccessControlRule>
    <domainName>/Default</domainName>

```



```

<externalTypeId>WCTYPE|wt.part.WTPart</externalTypeId>
<lifecycleState>INWORK</lifecycleState>
<WTPrincipalReference isInternal="true">
  <groupName>teamMembers</groupName>
  <groupType>ALL</groupType>
</WTPrincipalReference>
<grantPermissionSet>
  <AccessPermissionSet>
    <permissionField name="MODIFY" />
    <permissionField name="CREATE" />
    <permissionField name="DELETE" />
    <permissionField name="MODIFY_CONTENT" />
    <permissionField name="CHANGE_DOMAIN" />
    <permissionField name="CREATE_BY_MOVE" />
    <permissionField name="CHANGE_CONTEXT" />
    <permissionField name="MODIFY_IDENTITY" />
  </AccessPermissionSet>
</grantPermissionSet>
</AccessControlRule>
<AccessControlRule>
  <domainName>/Default</domainName>
  <externalTypeId>WCTYPE|wt.part.WTPart</externalTypeId>
  <lifecycleState>RELEASED</lifecycleState>
  <WTPrincipalReference isInternal="true">
    <groupName>teamMembers</groupName>
    <groupType>ALL</groupType>
  </WTPrincipalReference>
  <grantPermissionSet>
    <AccessPermissionSet>
      <permissionField name="REVISE" />
      <permissionField name="NEW_VIEW_VERSION" />
    </AccessPermissionSet>
  </grantPermissionSet>
</AccessControlRule>
<AccessControlRule>
  <domainName>/Default</domainName>
  <externalTypeId>WCTYPE|
wt.part.WTPartSubstituteLink</externalTypeId>
  <WTPrincipalReference isInternal="true">
    <groupName>teamMembers</groupName>
    <groupType>ALL</groupType>
  </WTPrincipalReference>
  <grantPermissionSet>
    <AccessPermissionSet>
      <permissionField name="READ" />
      <permissionField name="MODIFY" />
      <permissionField name="CREATE" />
      <permissionField name="DELETE" />
      <permissionField name="CHANGE_DOMAIN" />
      <permissionField name="CREATE_BY_MOVE" />
    </AccessPermissionSet>
  </grantPermissionSet>
</AccessControlRule>
<AccessControlRule>
  <domainName>/Default</domainName>
  <externalTypeId>WCTYPE|
wt.part.WTPartAlternateLink</externalTypeId>

```

```

<WTPrincipalReference isInternal="true">
  <groupName>teamMembers</groupName>
  <groupType>ALL</groupType>
</WTPrincipalReference>
<grantPermissionSet>
  <AccessPermissionSet>
    <permissionField name="READ" />
    <permissionField name="MODIFY" />
    <permissionField name="CREATE" />
    <permissionField name="DELETE" />
    <permissionField name="CHANGE_DOMAIN" />
    <permissionField name="CREATE_BY_MOVE" />
  </AccessPermissionSet>
</grantPermissionSet>
</AccessControlRule>
<!-- Other rules omitted for purposes of this example -->
</ProductConfig>

```

Template Changes

Solutions: Windchill PDMLink and Windchill ProjectLink

Releases: 7.0 and 8.0

Product Behavior Changes

Prior to Windchill 9.0, a user within a project was required to have the Read and Change Permissions rights to an object to change its ad hoc access control rights, using the Access Control action. The user could only change the ad hoc permissions of other participants to the permissions they themselves had or to a subset of the permissions they had. Typically context managers and object creators within a project were granted this right by being granted Full Control permission on the object. However, a user within a product, library, or project with only the Read right to an object was able to share the object to a target folder within a project and extend Read permission to other participants via the share. Read permission was extended to those participants in the shared-to project that had been granted ad hoc Read rights on the target folder.

With the introduction of new access control permissions this release, when sharing an object a user will be required to have Read and Change Permissions rights, and if the object has content the Download right will also be required to extend the Download permission to others. These or a subset of these permissions are those that will be granted by default to participants in the shared-to project that have the same ad hoc rights on the target folder. For example, if a participant has been granted ad hoc Full Control rights for the target folder, the participant will be granted Read, Download and Change Permissions rights by default for the shared object. A new Manage Security action will replace the Access Control action, and will be available in Windchill PDMLink as well as in Windchill ProjectLink.

Template Change Benefits

These changes provide more control over who can extend access rights when sharing objects and what permissions can be granted, as well as to make rights required for extending access to other users the same whether setting access control directly or by sharing the object. A new out-of-the-box Collaboration Manager role is added to provide a convenient way to identify who should have the ability to change permissions using the Manage Security action and by sharing objects.

Automated changes made during upgrade

A new Collaboration Manager role will be added to all contexts and its definition will be added to all context templates. Access control policy rules will also be added granting the role group Change Permissions permission within the context's /Default domain for the types of objects that can be shared, for all lifecycle states. Unless you are upgrading a standalone Windchill PDMLink system, a standalone Arbortext Content Manager system, or a standalone Pro/INTRALINK 9.0 system, you must specify whether any participants should be added to this new role, by setting the `com.ptc.windchill.upgrade.templatemigration.collaboration.option` property in the `upgrade.xconf` file to one of the two values:

- `ONLY_ROLE` – Only define the role. Do not add any participants to the role. This is the value set for standalone Windchill PDMLink, Arbortext Content Manager, and Pro/INTRALINK 9.0 upgrades.
- `ALL_TEAM_MEMBERS` – Define the role and add all team members to the role. Note that the members of each of the context team roles will be added to the new Collaboration Manager role. If additional members are added to the team after upgrade and you want them to also be members of the Collaboration Manager role, you'll need to add them to both roles. You could also grant other roles Change Permissions rights (instead of or in addition to using the Collaboration Manager role).

Since not all parts of all container templates are loaded into the database, and thus are not upgraded automatically, see the section titled [Upgrading Container Templates](#) that explains how to upgrade templates manually.

See out-of-the-box container templates for an example of the new role definition and access control policy rule definitions that can be added to your own context template files.

New Access Control Permissions

New Access Control Permissions are added to existing containers, and to container templates, during the migration process. The purpose of this migration is to maintain the behavior defined by Release 7 or Release 8 access control rules in the Release 9 environment. The migration is needed because, in Release 9, the new permissions are required to perform certain actions which were previously controlled by the earlier permissions.

Note: The result of this migration does not correspond exactly to a non-migrated ("new") R9 installation!

The new access control permissions allow finer-grained control of some actions, and these are used to greater advantage in new installations; but the default migrator action is to maintain the access control behavior which existed before migration. Note that customers can choose to disable some or all of this migration, if it does not meet their security needs. In some cases, customers may want to implement their own process to set the new access control permissions to meet their needs.

The New Access Control Permission Migrator affects existing access control policy rules; existing ad hoc permissions; life cycle templates with access control rules; and container templates which include access control policy rules. It sets the new access control permissions based on existing permissions and on the type of object the access control rule affects. Since all objects are subtypes of WtObject, all the new permissions are considered applicable to WtObject. This table summarizes the setting of the new access control permissions:

Permission	Same setting as	Classes Affected
Download	Read	wt.content.ContentHolder, wt.fc.WtObject
Modify Content	Modify	wt.content.ContentHolder, wt.fc.WtObject
Set State	See Text that follows.	wt.lifecycle.LifeCycleManaged, wt.fc.WtObject
Change Domain	Delete	wt.admin.DomainAdministered, wt.fc.WtObject
Create by Move	Create	wt.admin.DomainAdministered, wt.fc.WtObject
Change Context	Delete	wt.inf.container.WtContained, wt.fc.WtObject
Modify Identity	Modify	wt.access.IdentityAccessControlled, wt.fc.WtObject

The Set State permission requires a different migration strategy. In 8.0, non-administrative users can set the state of a LifeCycleManaged object if they have Create permission for wt.maturity.PromotionNotice. The migrator does not add

Set State permission to any ad hoc permissions, or to any AdHocAclSpec objects. For each existing policy rule granting Create permission for wt.maturity.PromotionNotice or wt.fc.WTObject (in any state), the migrator will add a policy rule granting that principal the Set State permission for wt.fc.WTObject (in all states). If such an access policy rule for WTObject already exists, the Set State permission will be added to the existing rule.

Customers can disable some or all of the new access control permission migration, if it does not suit their security requirements. In such a case, the customer must implement their own process to set appropriate values for these permissions.

The following properties control the New Access Control Permissions migrator:

Property	Permission Affected	Default Value	Description
wt.access.migration.enable	all new permissions	true	If true, the migrator is enabled. If false, no migration of permissions is performed.
wt.access.migration.enable.download	Download	true	if true, this permission is set as described previously
wt.access.migration.enable.modify_content	Modify Content	true	if true, this permission is set as described previously
wt.access.migration.enable.change_domain	Change Domain	true	if true, this permission is set as described previously
wt.access.migration.enable.change_context	Change Context	true	if true, this permission is set as described previously
wt.access.migration.enable.create_by_move	Create By Move	true	if true, this permission is set as described previously

Property	Permission Affected	Default Value	Description
wt.access.migration.enable.set_state	Set State	true	if true, this permission is set as described previously
wt.access.migration.enable.modify_identity	Modify Identity	true	if true, this permission is set as described previously

Windchill Client Architecture

Overview

Prior to Windchill 9.0, the Windchill user interface was built using different technologies and required customizers to know these different technologies. In contrast, Windchill 9.0, and for all practical purposes (i.e. customization needs) is built using one technology. The 9.0 Windchill Client technology is built on, but makes significant improvements to, the Windchill ProjectLink JSP framework.

The Windchill ProjectLink framework was redesigned to be more open, and easier to customize using taglibs, AJAX , Info*Engine, and other features.

The following is a subset of the Windchill 9.0 applications re-implemented using the new Client framework:

- Change Management
- Document Management
- Configuration Management
- Home Page
- Search
- Folder Browser

In order to improve consistency and familiarity any common features between PDMLink and ProjectLink, such as Document Management, have been re-implemented to one shared implementation. Customizations only need to be done once to get the behavior for all products.

A general overview of the features is provided below. For details about how to customize using the framework see the Customizers Guide.

AJAX Support

The framework has built in support for AJAX capabilities. The features include:

- Add row to table - no page refresh
- Partial page refreshes on single row update/delete e.g. checkin
- Partial page refresh on table view change
- Wizard speed & usability - background download of pages
- Part number auto suggest in Product Structure Editor
- User name auto suggest in User picker
- Dynamic menus

Adding new capabilities is akin to writing the javascript and jsp code or using some of the Prototype, Scriptaculous, and Dojo libraries bundled with Windchill.

Support for customized action and action model definitions

The Windchill Client Architecture uses the same action framework as that of ProjectLink at 7.0 and 8.0 (actions.xml and actionModels.xml). However, the framework has been enhanced to allow custom actions.xml and actionModels.xml. Also, the localization of displayable text has moved from action.properties to rbinfo files. Support for the action.properties is still available but entries should be moved into rbinfo files.

Validation of actions can be done via logic encapsulated into a delegate that gets executed for that specific action or via role based control via profiles. Role based support is included for most actions in the product, and customized actions can also take advantage of this capability.

Specific menus can be constructed for a custom modeled type or soft type by overriding the menu from the base class if necessary.

Support for adding tabs and sub tabs

Adding a tab or subtab is as easy as adding a new action and registering that action in an action model. The nav.xml used in previous releases of Windchill no longer exists. The tabs and subtabs are defined in actions*.xml and actionModels*.xml files just as any other action is registered. There is also support for customizing your own context bar for the new tabs and subtabs. If you have added tabs, you will need to register those actions in the navigation xml file.

Reusable components

We have added several new reusable components as well as integrated with some components that existed in Windchill 8.0. These components were designed to be easily plugged in and configurable based on most commonly used scenarios.

They promote consistency, usability, efficiency, and maintainability. A subset of these common components is listed below.

Information Page

The information page component was redesigned to conserve space and allow for easy navigation to related information such as Related Parts, Related Documents, Iteration History. The third level navigation has been changed to a horizontal bar and uses javascript menus to display actions to related data. The menubar can be easily customized to add or remove new menus and add or remove new actions to those menus.

Creating pages for new custom classes or soft types is as easy as adding a new jsp for that type and registering the page in a properties file.

Wizard

The wizard component allows you to easily create a new UI that can capture user input on multiple steps and also build up data objects that get passed to processors that can then use that data to persist new objects. The features of the wizard include:

- Wizard preloaded and dynamic loaded steps
- Preloaded steps allow quick navigation
- AJAX for dynamic steps
- Easy configuration of new wizards and adding/removing steps to existing wizards

Views on tables and trees

The filtered view client introduced in Windchill 8.0 and used for tables such as the Workspaces table has been enhanced and is integrated with the new table and tree components. Simply by setting configurable="true" on a table, the system will provide the user with an action that allows her to create different table views. A table view allows the user to select columns, objects types, sorting and filtering criteria. Each table can define what object types it supports and default views for that table.

Most tables have support for Filtered Views that can be created by the user. This allows each user to customize the tables to show the information that is important to them, including the objects and the columns for those objects. The user also has the ability to specify the criteria for the view and how the data should be sorted.

Attributes Table

The Attributes Table component can be used in Information Pages and Wizards and is easily customized to show attributes for a modeled class, custom modeled class, or soft type. The table allows sorting based on the name of the attribute or

the Required column (if included). There is also customization support for adding additional columns to this table. An example of this is the Classification Attributes table used to display classification attributes of a Part when PartsLink is installed. This table includes an additional column to show what classification node an attribute was derived from on the object.

Create and Edit

Built using the new wizard component, the create and edit components allow quick customization of wizards for creating and editing of objects. These components can be used for any object type and are integrated with the Type Picker, Context Picker, and Attributes Table.

The creation of objects like Documents, Parts, Change Issues, Change Requests all use a new wizard component that quickly lets the user navigate back and forth without waiting for pages to load. Most of the page can be preloaded on startup of the wizard.

If the seed object for the wizards is not a container the first step of the wizard will be the context picker. For customers that want to have the New Document action available from the home page, the action can be added to an existing action model and the Context step will automatically show up in the New Document client.

Attributes

The Windchill Client Architecture provides edit and view native support for the following attribute types:

- String
- URL
- Date-Timestamp
- Booleans
- Integers
- Floating Point
- Floating Point with Units
- Enumerated Types
- Multi-Valued

The components are tied into the Object Initialization Rules and the Type Manager to support constraints defined on modeled and soft attributes. Creating new components to do special handling for any attribute can be done via a delegate, called a DataUtility, that can easily be plugged into a table, tree, information page or wizard.

Data Acquisition

The client infrastructure tag library allows you to use both Windchill service APIs and Info*Engine tasks to retrieve client data. You can additionally implement MethodServer delegates to post-process the data for specific columns or properties. An example of this is the NameNumberDataUtility that takes the raw value of the name attribute of an object and returns a Action component that renders the name as a URL to the information page of the row object.

Pickers

A set of reusable pickers were implemented that can be easily plugged into any jsp page using taglibs. These pickers can be configured to allow single or multiple selection. There are other configurable properties for each picker that allows you to tweak how the picker works and what it returns. The pickers include:

- Type Picker
- Context Picker
- Participant Picker
- Organization Picker
- Item Picker

Attachments

The attachments common component uses the preferences to determine whether or not to use applets or browser upload/downloads. This component is used in Document Management clients (New Document, Edit Document), Change Management clients (New Change Request, New Change Notice, etc). This includes creating of documents in Projectlink. There are differences in the behavior between the browser and applet settings.

Attachments have some additional meta data attributes that can be used if you change the preferences in the Attachments section.

Windchill Clipboard

The Windchill Clipboard was enhanced to allow users to append objects to the clipboard. It can be used as a simple collector so the user can navigate through the UI and gather objects for a single paste target.

Collector

The Collector allows a user to collect a group of related objects to be processed together. This component was implemented in Windchill 8.0 and used in actions like Move, Promote and Delete.

The collector was enhanced in Windchill 9.0 to allow tailoring the collector menu actions, row actions and window actions to the individual application the collector is used in. , The Windchill 9.0 adds support for custom objects such as:

- Subclasses and subtypes of Parts, Documents, CAD Documents and change objects.
- Subclasses and subtypes of links between parts and documents, parts and CADDocuments.

Template Processor Support

The Template Processor infrastructure is supported. Core classes are still delivered with the software but are deprecated. Any customizations to PDMLink specific templates will need to be migrated to the new JSP framework. Most PDMLink clients that have been rewritten are not included with the software and those are still included may not function. Integration of custom clients developed in Template Processor is supported and documented in the customizers guide, however we recommend that these clients be rewritten using the new architecture.

Dynamic Client Architecture Support

The Dynamic Client Architecture (DCA) is supported. Core classes are still delivered with the software but are deprecated. Your customized clients should still function however you may need to re-register them to be included in the UI. Integration of custom clients developed in Template Processor is supported and documented in the customizers guide, however we recommend that these clients be rewritten using the new architecture.

Document Management

There are new preferences under the Documents category in the Preference Manager related to WTDocument Name Uniqueness Validation. These can be used to determine if duplicate WTDocument names in a folder should give you no warning, warning, or error.

In previous releases PDMLink showed the Title attribute for WTDocument and ProjectLink didn't show it. The new UIs don't show it by default. To turn it back on use the Preference Manager Documents -> Title Attribute preference.

All of the file handling wizards for Document Management are doing the full transaction blocking of the persistence of the WTDocument and the attaching of the content because of the file caching that we are doing.

Document Management clients from previous releases written in JSP or Template Processing are no longer supported. Customizations to these clients need to be migrated to the new clients built using the new Windchill Client Architecture.

Change Management

Change Management clients from previous releases written in JSP or Template Processing are no longer supported. Customizations to these clients need to be migrated to the new clients built using the new Windchill Client Architecture.

Configuration Management

Configuration Management clients from previous releases written in JSP or Template Processing are no longer supported. Customizations to these clients need to be migrated to the new clients built using the new Windchill Client Architecture.

The Product Structure Browser is still implemented using template processor. There are plans to rewrite this using the new framework in a future release.

Tools

There are several tools that can be used to help in the customization process. Details about accessing these reports is included in the Customizers Guide.

Logging Properties

The use of log4j was integrated in the infrastructure to facilitate in debugging the new client infrastructure. There are several properties that can help narrow down the cause of problems in a particular area of the infrastructure. These properties will help to reduce the time necessary to analyze issues within the product.

Available Attributes Report

The Available Attributes Report can be used to determine information about attributes that can be displayed for an object type. The information includes things like the label, identifier, and DataUtility that may be used for that attribute.

Available Actions Report

The Available Actions Report can be used to determine information about actions that can be displayed for an object type. The information includes things like the label, identifier, and Validator, and action definition file.

Debug Tool

A debug tool has been added to the new client architecture and can be turned on by adding `jcaDebug=true` as a parameter to the url. By turning this on, information about column header, column cell, and action can be seen to help in debugging where an issue might be coming from in the code.

Validator Report

The Validator report allows you to see what validator is mapped to an individual action. This can save you time in finding which validator needs to be overwritten or if a validator exists at all for an action or attribute.

Change Management

Solutions: Windchill PDMLink

Source Releases: 7.0

The Change Management user interface only allows the user to attach affected data that is not currently being modified (checked out).

- The details page for each changeable object has been modified to display both the checked out and working copies (owned by the given user) that have been subsequently checked out.
- The checkboxes for all checked out and working copies found within each of the changeable update pages and within each changeable picker page used for adding affected data have been disabled.
- The user is now required to either check in or undo a checkout before they can remove, revise, or attach any affected data for changeable objects.

All Change Management Workflow tasks that are provided out-of-the-box are now required. When upgrading from a previous release of Windchill PDMLink, the upgraded Change Management Workflow Templates tasks retain the same behavior as in the previous release.

On the Change Notice Implementation Plan, the Add Task functionality has been changed to use a more common user picker.

The Change Management process has some terminology changes. These include the following:

- References to CMII have been replaced by Closed Loop. However, the CMII Baseline remains referenced as such.
- References to ECR, ECN, and CA have been replaced by Change Request, Change Notice and Change Activity, respectively.
- References to Enterprise Change Request and Enterprise Change Notice have been replaced by Change Request and Change Notice, respectively.

As a result of these terminology changes, Change Management Workflow Templates, Life Cycle Templates, Teams and Reports have been renamed. The following table illustrates the changes:

Obsolete Name	New Term
CMII CA Workflow	Change Activity Workflow
CMII ECN Workflow	Change Notice Workflow
CMII ECR Workflow	Change Request Workflow
CMII PR Workflow	Problem Report Workflow

Obsolete Name	New Term
CMII Change Activity	Change Activity Life Cycle
CMII Change Notice	Change Notice Life Cycle
CMII Change Proposal	Change Proposal Life Cycle
CMII Change Request	Change Request Life Cycle
CMII Problem Report	Problem Report Life Cycle
CA Team	Change Activity Team
ECN Team	Change Notice Team
ECR Team	Change Request Team
Open PRs	Open Problem Reports
Open ECRs	Open Change Requests
Open ECNs	Open Change Notices
ECR Influx And Resolution	Change Request Influx And Resolution
ECN Influx And Resolution	Change Notice Influx And Resolution
ECR Track Breakdown	Change Request Track Breakdown
All Open ECRs	All Open Change Requests
All Open ECNs	All Open Change Notices
All ECR Influx And Resolution	All Change Request Influx And Resolution
All ECN Influx And Resolution	All Change Notice Influx And Resolution
Average ECR Completion Time	Average Change Request Completion Time
Average ECN Completion Time	Average Change Notice Completion Time
All Average ECR Completion Time	All Average Change Request Completion Time
All Average ECN Completion Time	All Average Change Notice Completion Time

Obsolete Name	New Term
All Open ECRs Table	All Open Change Requests Table
All Open ECNs Table	All Open Change Notices Table

When upgrading from a previous release of Windchill PDMLink, the Change Management Life Cycle Templates, Workflow Templates and Team Templates beginning with "CMII" (for example, "CMII Change Activity ") are left enabled in the default organization. The renamed Life Cycle Templates, Workflow Templates and Team Templates will be loaded automatically during the upgrade. Apart from the name change, there are also changes in the templates due to performance or design considerations. The templates from the previous release are compatible with this release, but it is recommended to utilize the new templates where possible.

The Object Initialization Rules were changed in this release to look at the renamed Life Cycle and Team templates on a non-upgraded system. These rules are defined in the file \$windchill/loadFiles/pdmlink/PDMLinkInitRules.xml.

If you want to revert your system to use the out-of-the-box Object Initialization Rules provided in this release, you need to reload them into the system after upgrading using the following command in windchill shell:

```
<Windchill>\bin> windchill wt.load.LoadFromFile -d
$windchill/loadFiles/pdmlink/PDMLinkInitRules.xml
```

The upgrade process does not set these automatically, in order to support existing customer modifications that could have altered the previous out-of-the-box Object Initialization Rules.

To modify the current rules, refer to the Administering Object Initialization Rules section in the *Windchill Business Administrator's Guide* for details on changing the Windchill PDMLink change management rules.

EPM Foundation

Solutions: Windchill ProjectLink, Windchill PDMLink

Source Releases: 7.0

The following model changes were made for 9.0:

- No description on EPMDocumentMaster links. The description is still available on EPMDocument iteration.
- Authoring Application and Owner Application are removed from EPMDocument and links. They are available on EPMDocumentMaster.
- The family table model has changed. The container is no longer an EPMDocument. It is a lighter weight object, EPMSepFamilyTable.

Therefore, the EPMContainedIn link is now between EPMFamilyTable and EPMDocument.

- EPMDocuments and links are now typed. IBAs cannot be added to an EPMDocument unless they belong to the type.

The following are behavior changes made for 9.0:

- CADName is always required and must now be unique across the enterprise for Windchill Foundation & PDM and Windchill PDMLink and unique within a project for Windchill ProjectLink.
- EPMDocument number is always uppercase now. (It can be entered with mixed case, but it will be uppercase in the database.)
- Content – Secondary content now has a category assigned. OTHER is the default. If an application considers some content to be primary, it is now flagged as primary content.
- EPMDocuments and links are now typed. IBAs cannot be added to an EPMDocument unless they belong to the type.
- EPMDocuments must be operated on within the context of a workspace. For example, Create in a workspace, check out to a workspace, check in from a workspace.

The following are classes that are removed for 9.0:

wt.epm.CADNameRegistryEntry – Since cadnames are always unique, there is no longer any need for this class.

Customizations Using JGL Java Library

Solutions: Windchill PDMLink and Windchill ProjectLink

Source Releases: 7.0 and 8.0

The JGL Java library from ObjectSpace is no longer used in Windchill products. If you were using that library in your customizations, you must rework them to no longer use that library. Much of the JGL library functionality is superseded by similar functionality provided in later versions of Java, and that is what PTC recommends you use as a replacement.

Windchill Information Modeler

Solutions: Windchill PDMLink

Source Releases: 7.0

The Windchill Information Modeler enables you to customize and extend the out-of-the-box Windchill capabilities. This section describes the changes made for the 9.0 release.

Rational Rose

This release of Windchill uses Rose 2003. The Windchill AddIn properties used in Rose have also been updated, so you should update your models with the new properties. See <Windchill>\RoseAddIn\docs\WindchillUpgrade.html for instructions.

The Windchill AddIn properties no longer include unsupported types from the ColumnType selection list. If unsupported types have been used, they will continue to produce the same generation results, but in Rose will now appear as a number (for example, 7010), rather than name of the column type. These values should be changed to one of the currently supported types in the selection list.

Generation of backslashes entered in Rose has changed.

Generating Backslashes Entered in Rose

Backslashes (\) entered in Rose no longer need to be escaped. Previously, generation of a backslash entered in Rose required specifying two backslashes for every single backslash generated.

A search and replace tool can be used to upgrade Rose model files containing escaped backslashes. These edits can be made directly in the Rose model files without using Rose.

When replacing, be sure not to replace the double backslashes in file_name paths of controlled units. For example:

```
file_name
"$wnc\\CommonComponents\\src\\com\\ptc\\core\\components\\
beans\\beans.cat"
```

The results of not making these changes are:

- Backslashes not in executable sections of the code will be generated as double backslashes, with no adverse affects.
- Backslashes in executable code will result in either compile time errors, or a change in runtime behavior.

Code Generation Change

Code generation support for evolvable externalization has been enhanced to provide nearly automated support for class evolution from release to release. This evolvable externalization code is generated for any class that is Externalizable, unless its Serializable property in Rose has been set to "Externalizable - Basic". For details, see the "Evolvable Classes" chapter of the *Windchill Customizer's Guide*.

Modularization

Certain groups of packages have been organized into formal modules.

Foundation Module

When a group of packages is formalized as a module, its Rose model represents the packages as belonging to the module, and it has a module specific home directory.

The Rose Path Map for the Foundation module is \$wnc\\Foundation, and its location value is %wt_home%/Module/wnc/Foundation. The module model files are found here now, instead of in Windchill/src.

The packages previously found under wt, Container and RuleSubsystem in the Logical View browser, are now found by navigating into the wnc assembly, then into the Foundation module, and then in to the various subsystems of the Foundation module.

Rose Path Map

Since each module has its own home directory, each module requires its own Rose Path Map variable. These variables are managed via scripts that run whenever a model is opened. The script depends on the information in codebase\moduleRegistry.properties to determine the set of installed modules, and it depends on codebase\moduleDir.properties to know the home directory for each module. The installer populates the properties files.

Recreate your models, starting with the latest WTDesigner.mdl

Due to this reorganization of Windchill packages, it is best to start with the newly released WTDesigner.mdl, and load your customization control units into the new model.

1. Open WTDesigner.mdl.
2. Save a copy of the model, so you can add your control units to it.

From Rose menu, select **File > Save As...**

3. Add your control units to the model.
 - a. Open the Logical View / Main diagram.

- b. Ensure no items on the diagrams are selected.
- c. Add each top-level control unit.

From Rose menu, select **File > Units > Load...**

- d. Verify that your top-level packages are directly under Logical View.

4. Save the model

From Rose menu, select **File > Save**

Add Constraints Upgrade Phase

Solutions: Windchill ProjectLink and Windchill PDMLink

Source Releases: 7.0

The Add Constraints phase of the Upgrade Manager no longer executes several SQL files that in prior releases had been created during the Compare Schema phase. The files include:

- UniqueTest-dbUser-Oracle TNS Entry-date_ts.sql
- NotNullTest-dbUser-Oracle TNS Entry-date_ts.sql
- UniqueDebug-dbUser-Oracle TNS Entry-date_ts.sql
- NotNullDebug-dbUser-Oracle TNS Entry-date_ts.sql

Now the Compare Schema phase only creates two SQL files which are then executed at the Add Constraints phase:

- NotNullWork-dbUser-Oracle TNS Entry-date_ts.sql
- UniqueWork-dbUser-Oracle TNS Entry-date_ts.sql

After both of these SQL files are executed, corresponding log files are created at <Windchill>/Upgrade/UpgradeReports/AddConstraints:

- NotNullWorkSpool-dbUser-Oracle TNS Entry-date_ts.txt
- UniqueWorkSpool-dbUser-Oracle TNS Entry-date_ts.txt

Change in Property Default for Workflow Handling of Unresolved Roles

Solutions: Windchill PDMLink and Windchill ProjectLink

Source Releases: 7.0

The property "wt.workflow.engine.ignoreUnresolvedRole" is set to "true" by default for all Windchill solutions for Windchill 9.0.

When this property is set to true, any roles that are not required and for which no users or groups are assigned are ignored. If an activity contains no required roles, and no users are assigned to any of the roles when the activity starts, the activity automatically completes.

This change was made to provide a default which is consistent across the Windchill solutions. This property was set to true by default in Windchill ProjectLink 7.0 but was not set to true by default in Windchill Foundation & PDM 7.0 and in Windchill PDMLink 7.0.

This change means that any NEW or LOADED post-install workflows have the behavior specified by the property. You can change the property or create a new workflow to obtain the previous functionality.

When a workflow process template is created, it internally saves the value for the unresolved role property for the template. Any Workflow Process Template that is upgraded retains the behavior for handling unresolved roles based on the value of the property when the template was created. (for example, there is no change in the behavior for existing workflow processes). However, any template that is "reloaded" into 9.0 assumes the system property value set at the time the template is loaded.

Changes to Calendar Property Default

Solutions: Windchill ProjectLink and Windchill PDMLink

Source Releases: 7.0

The calendar property default that controls how task due dates and project plan estimated finish dates are calculated is different in this release.

The default value for the property "wt.calendar.calculateDefaults" has been changed from "false" to "true" for all Windchill solutions. This change improves system performance when calculating task and plan finish dates.

When this property is set to true, the system does not check the system calendar or individual user calendars for non-working days. Instead, all users are assumed by default to have non-working days specified by the wt.calendar.nonWorkDaysOfTheWeek property (which default to 1,7. Sunday =

1st day of week and Saturday = 7th day of week). Non-working days are used to calculate due dates for workflow tasks and project activities.

If it is essential to manage non-working days per user, then set the property `wt.calendar.calculateDefaults` to "false".

The property value for `wt.calendar.calculateDefaults` will not affect the behavior of task delegation by individual users.

Changes to Search

Solutions: Windchill PDMLink and Windchill ProjectLink

Source Releases: 7.0

The search page has been simplified and divided into two coherent search pages: **Search** and **Advanced Search**. The **Search** page allows a quick and easy way to find any type of business object. The **Advanced Search** page allows you to perform a more precise search on a particular business type.

The search results now include new actions to provide easier access to the common set of actions. One of the new actions is the **Export to a File** action, which exports the entire search result set to a file on the user's local machine.

There have been a number of changes for saved searches:

1. A search can now be saved before it is executed.

The search criteria that gets saved is the search criteria that exists at the time the user clicks **Save**.

2. When a saved search is executed, only the search criteria is populated; the search is not executed and no results are displayed until the user clicks **Search**.

3. Administrators can now save a search and assign it to a group.

All members of the group have access to the saved search. The saved search drop-down list is now configured with a **Customize...** option. Choosing the **Customize...** option allows administrators to manage their saved search list by choosing whether to show saved searches they created or assigned to groups of which they are members.

Note: Searches saved done in 7.0 will not show up in the saved search drop-down list out-of-the-box in 9.0. Users need to use the **Customize...** option and choose to display those searches.

4. The DCA XML configuration files used to build the search graphical user interface (GUI) have also changed significantly. The **Search** page is now developed using DCA patterns, making it easier to reuse and customize searches.

The types of objects that a user can search on are no longer customizable through the user preferences client. The **Search** page **Customize** link on the **Search For** field is the replacement for this functionality. This type picker allows you to select multiple types and these types are persisted across sessions to limit your default search types. This also allows you to search across different types on the search page. You will see the same set of available types on the **Advanced Search** page, but selecting a type on this page does not persist across sessions and only one type can be selected on this page.

5. In 9.0, users can now search for Discussion Postings and Reference Attachments. Reference Attachments include files uploaded in References or Notebook tables associated with objects, as well as files attached to discussion postings. For Reference Attachments created prior to 9.0, there is not a creator or modifier.

Creating a WTDocument in Windchill PDMLink

Solutions: Windchill PDMLink

Source Releases: 7.0

Prior to Windchill PDMLink 9.0, EPMDocument creation required a write-enabled cache vault, but WTDocument creation did not. A write-enabled cache vault is now required in order to create a WTDocument in Windchill PDMLink.

DCA - Dynamic Client Architecture

Solutions: Windchill ProjectLink and Windchill PDMLink

Source Release: 7.0

If you have used DCA to customize your system, review the "Changes" chapter of the *Windchill Client Technology Guide* for possible impacts.

Changes to Lifecycle Templates

Solutions: Windchill PDMLink and Windchill ProjectLink

Source Releases: 7.0

The concept of Basic and Advanced lifecycle templates were changed. Advanced lifecycle templates have the same functionality as lifecycle templates in previous releases. Basic lifecycle templates do not use workflows, ad hoc permissions, or Teams. All the lifecycle templates from previous releases default to Advanced. Only new, out-of-the-box lifecycle templates that are loaded that do not use workflows will be Basic.

Transitions for Upgraded Lifecycles

Solutions: Windchill PDMLink and Windchill ProjectLink

Source Releases: 7.0

For information on transitions for existing lifecycles for use with upgrade, refer to the *Windchill Business Administrator's Guide* in the chapter, "Administering Life Cycles" under the heading "Defining Life Cycle Phases" and the subheading "Defining Transitions."

Default transitions defined under the subheading "Transition Defaults" are applied to existing lifecycle templates.

Moving Versioned Objects

Solutions: Windchill PDMLink

Source Releases: 7.0

When a versioned object is moved from one folder to another, there is a possibility that the Cabinet, Domain, and Owner for that object have changed. Previously, only the latest iteration that was being moved had its cabinet, domain and owner updated. Now, in 9.0, we have changed the behavior such that all historical iterations (for example, all previous iterations on the same ControlBranch as the one being moved) will also have their cabinet, domain and ownership updated as well.

Multi-object Support

Solutions: Windchill ProjectLink and Windchill PDMLink

Source Releases: 7.0

Windchill 9.0 adds deep infrastructure support for multi-object APIs. Multi-object APIs are operations that act on collections of persistables and that utilize improved, multi-object persistence APIs to minimize database round trips. A multi-object "store" operation, for example, can persist 100 objects using a single batch operation sent to Oracle, whereas the same functionality pre-9.0 would have required 100 individual insert operations. Refer to the *Windchill Customizer's Guide* for more information.

New Organization Roles

Solutions: Windchill ProjectLink

Source Releases: 7.0

There are six new roles added to wt\project\RoleRB.rbInfo in 9.0:

```
APPROVER_LEVEL_1.value=Approver - Level I
APPROVER_LEVEL_1.shortDescription=Workflow Approver role for level
one approval in OOTB template Two Level Approval Process
```

```
APPROVER_LEVEL_2.value=Approver - Level II
APPROVER_LEVEL_2.shortDescription=Workflow Approver role for level
two approval in OOTB template Two Level Approval Process
```

```
ESI_ENGINEER.value=ESI Engineer
ESI_ENGINEER.shortDescription=Special ESI role for ESI workflow
```

```
PROMOTION_APPROVERS.value=Promotion Approvers
PROMOTION_APPROVERS.shortDescription=Team Members for approving
Promotion Requests.
```

```
PROMOTION_REVIEWERS.value=Promotion Reviewers
PROMOTION_REVIEWERS.shortDescription=Team Members for reviewing
Promotion Requests.
```

```
MARKETING.value=Marketing
MARKETING.shortDescription=Marketing role
```

All of these roles now appear on the **Organization Roles** page. If an organization does not wish to use these roles for their project, product, or library teams, they need to go to their **Organization Roles** page and remove them.

None of these roles can be removed from the rbInfo file as they are required for certain areas of the product to function properly.

New Roles in the General Product Template

Solutions: Windchill ProjectLink and Windchill PDMLink

Source Releases: 7.0

The following roles were added to the General Product Template: Change Request Review Board, Promotion Reviewers and Promotion Approvers.

Please refer to the *Windchill Business Administrator's Guide* for details.

Promotion Request Updates

Solutions: Windchill PDMLink

Source Releases: 7.0

There are two migrators for Promotion Request in 9.0. They are as follows:

- PromotionRequestMigrator_To_R8.java

This migrator does the following:

- Queries and retrieves all the products and libraries in the migrated database.
- Adds two new roles; Promotion Approvers and Promotion Reviewers.
- Adds six access control rules related to the promotion request object.

This migrator ensures that the Promotion Request features work for objects that can be promoted in the migrated products and libraries.

- MigrateGeneralTemplate_X05.java

This migrator does the following:

- Queries the database for General Library and General Product templates.
- If they are not customized, updates the XML attribute of the same name with contents of the 9.0 version of generalProductTemplate.xml or generalLibraryTemplate.xml.
- If they are customized, creates a new template called General Product R8 Template or General Library R8 Template that has the contents of the 9.0 version of generalProductTemplate.xml or generalLibraryTemplate.xml.

In the case of the non-customized template, the migrator ensures that the Promotion Request feature works for all objects that can be promoted in products or libraries created from the updated templates.

If your templates are customized, you must do either of the following:

- Update your existing customized template with the new roles and access control rules.
- Use the new General Product R8 Template or General Library R8 Template to create your new products and libraries.

Specifying Delegates in Document Management

Solutions: Windchill PDMLink

Source Releases: 7.0

If you have modified which delegate is used to create documents in the HTML client, the entry in the properties file for `com.ptc.windchill.enterprise.doc.server.DocumentDelegate` now has a selector to specify the product to which the delegate is connected. The selector values are "pdmlink", "classic", and "project". The following is the default entry for `WTDocument` in `Windchill\src\com\ptc\windchill\pdmlink\doc\DocumentFactoryDelegate.properties`:

```
wt.services/svc/default/com.ptc.windchill.enterprise.doc.server
.DocumentDelegate/pdmlink/wt.doc.WTDocument/0=com.ptc.windchill
.pdmlink.doc.server.WTDocumentWithContextDelegate/duplicate
```

All customized entries need to add the Windchill PDMLink selector, for example:

```
wt.services/svc/default/com.ptc.windchill.enterprise.doc.server
.DocumentDelegate/pdmlink/ext.mycompany.MyDocument/0=ext.mycomp
any.mydocument.server.MyDocumentDelegate/duplicate
```

Understanding Soft Attributes

Solutions: Windchill PDMLink and Windchill ProjectLink

Source Releases: 7.0

A number of changes have been made to the way in which soft schema attributes are presented on input forms and processed by the server. The following Windchill PDMLink HTML and JSP clients are affected:

- Create/Update Document
- Create Multiple Documents
- Create Document From Template
- Create/Update Part
- Create/Update End Item
- Create/Update Problem Report
- Create/Update ECR
- Create/Update ECN
- Create Document Template

The following Windchill ProjectLink JSP clients are affected:

- Create/Update Project
- Create/Update Document
- Create Multiple Documents
- Create Document From Template
- Create/Update Part

In addition, Desktop clients such as Microsoft Word are also affected.

The changes are as follows:

1. Required versus nonrequired attributes

Attributes are not be marked or treated as required unless they have a Value Required constraint. Prior to 9.0, users were required to enter a value for each soft attribute.

2. Null values

If no value is entered for an attribute, the object is created without that attribute. Such attributes are listed on the **Details** page of the object without a value.

An empty string, or a string with only white space characters, is considered a null value for a string, even if there is no minimum string length constraint. If the string has a Value Required constraint, a user needs to give it a value containing one or more non-white space characters.

3. Use Default button

A **Use Default** button is presented to the right of the input field if all of the following conditions hold:

- The attribute has not yet been given a value by the user.
- The attribute has been given a default value in the Type Manager.
- The attribute does not have an immutable constraint.
- The AllClients.xml configuration file does not specify that the button should be omitted for the attribute.

For text fields, if the user clicks **Use Default**, the input field is populated with the default value set in the Type Manager. For dropdown lists, clicking the button causes the default value to be selected from the list.

4. Input field values

Prior to 9.0, if an attribute had not yet been given a value by the user, the default value was shown in the input field. In 9.0, default values are not displayed in the input field unless the attribute has an immutable constraint. If the attribute has an immutable constraint, the default value (which is the

attribute's permanent value) is displayed, or, in the case of drop-down lists, preselected; otherwise, no value is shown.

On update forms, when an attribute has already been assigned a value, that value is displayed in the input field.

5. Discrete set constraints

Attributes with a discrete set constraint are presented as a drop-down menu with a blank line at the top.

If the attribute is not required, selecting the blank line is interpreted as a null value. If the attribute is required, selecting the blank line generates an error message.

6. Boolean attributes

Boolean attributes are presented as a drop-down menu with three items: blank, true, and false. If the attribute is not required, selecting the blank line is interpreted as a null value. If the attribute is required, selecting the blank line generates an error message.

7. Immutable attributes

Immutable attributes are included in input forms, but disabled. The default (permanent) value of the attribute is shown in the input field.

8. String attribute input fields

A new preference "StringLengthThresholdForMultilineInput" is available to administrators through the **Preference Administrator**. It allows administrators to specify the maximum-length attribute that is displayed as a single-line text field. Soft attributes with a maximum string length over this value are presented as a multiline text field. The default is 60 characters.

A multi-line text field is one in which carriage returns (line feeds) can be entered; a single-line text field is one in which they cannot. Multi-line text fields are not necessarily more than one row in height.

The maximum length of a string attribute can be set using a maximum string length constraint - up to 200 characters. If no string length constraint is set, the maximum is 200 characters.

Use of the preference for determining what type of input field should be presented can be overridden by using an entry in the AllClients.xml configuration file described below.

9. Attribute Display Order

Attributes are listed in alphabetical order by localized display name on input forms as well as **Details** pages.

Prior to this they were listed in alphabetical order by internal or system name on input forms.

XML Configuration File

By editing the file `<windchill>/codebase/config/xml/AllClients.xml`, you can do the following:

1. Turn off display of the **Use Default** button for a specific attribute.
2. Specify whether a string soft attribute should be displayed as a single-line or multi-line input field. This directive overrides that of the `StringLengthThresholdForMultilineInput` preference.

The file is described by the following DTD's:

```
<windchill>/codebase/config/dtd/LogicRepository.dtd
```

```
<windchill>/codebase/config/dtd/AllClients.dtd
```

The format of elements in `AllClients.xml` is as follows:

```
<ElementGroup>

  <LogicContext dataType="[object type]" />

  <ObjectAttributes id="ObjectAttributes">

    <AttributeEditField id="IBA|[attribute logical form
name]" showDefaultValue="[true or false]"
inputFieldType="[singleLine or multiLine]" />

  </ObjectAttributes>

</ElementGroup>
```

Examples are provided in the `AllClients.xml` file.

All the files in `codebase/config/xml`, including the `AllClients.xml` file, can be reloaded without restarting the MethodServer using the following command:

```
<windchill>/bin/ReloadConfigFiles.sh (on Unix Systems)
```

```
<windchill>\bin\ReloadConfigFiles (on Windows System)
```

where `<windchill>` is the directory where Windchill PDMLink and/or Windchill ProjectLink is installed.

Executing the command with a `--help` option displays command options.

Note: If multiple Windchill Method Servers are running, this command only reloads the Method Server that executes it. Therefore, it should not be used for multiple-server systems. On multiple-server systems the Method Servers must be restarted.

Understanding Terminology Changes in Change Management

Solutions: Windchill PDMLink

Source Releases: 7.0

The Change Management process has some terminology changes that include the following:

- References to CMII have been replaced by Closed Loop; however, references to the CMII Baseline remain unchanged.
- References to ECR, ECN, CA have been replaced by Change Request, Change Notice and Change Activity respectively.
- References to Enterprise Change Request and Enterprise Change Notice have been replaced by Change Request and Change Notice respectively.

As a result of these terminology changes, change management workflow templates, life cycle templates and teams have been renamed. The following table illustrates the changes.

Windchill PDMLink 7.0 Term	Windchill PDMLink 9.0 Term
CMII CA workflow	change activity workflow
CMII ECN workflow	change notice workflow
CMII ECR workflow	change request workflow
CMII PR workflow	problem report workflow
CMII change activity	change activity life cycle
CMII change notice	change notice life cycle
CMII change proposal	change proposal life cycle
CMII change request	change request life cycle
CMII problem report	problem report life cycle
CA Team	change activity team
ECN Team	change notice team
ECR Team	change request team

When upgrading from a previous release of Windchill PDMLink, the change management life cycle templates, workflow templates and team templates beginning with "CMII" (for example "CMII Change Activity") are left enabled in

the default organization. The renamed life cycle templates, workflow templates and team templates are loaded automatically during the upgrade. Apart from the name change, there may also be changes in the templates due to performance or design considerations. The templates from the previous release are compatible with this release, but PTC recommends that you utilize the new templates where possible.

The object initialization rules are changed in this release so they look at the renamed life cycle and team templates on a non-upgraded system. These rules are defined in the file `<windchill>/loadFiles/pdmlink/PDMLinkInitRules.xml`.

To revert your system to use the out-of-the-box object initialization rules provided in this release, you need to reload them in the system after completing your upgrade using the following command in a windchill shell:

```
<windchill>\bin> windchill wt.load.LoadFromFile -d  
$windchill/loadFiles/pdmlink/PDMLinkInitRules.xml
```

The upgrade process does not set these automatically; in order to support existing customer modifications that may have altered the previous out-of-the-box object initialization rules.

To modify the current rules, see the section entitled, "Accessing the Object Initialization Rules Administrator" in the *Windchill Business Administrator's Guide* for details on changing the Windchill PDMLink change management rules.

Upgrading Aphelion

Solutions: Windchill PDMLink and Windchill ProjectLink

Source Releases: 7.0

Aphelion 2003.3 is the only supported Aphelion version for use with Info*Engine 9.0. It is packaged on the Aphelion Directory Server 2003.3 for Windchill 9.0 CD. Refer to the *Windchill Installation and Configuration Guide - Advanced* (WCAdvancedInstallConfigGuide.pdf) for instructions on upgrading to Aphelion 2003.3. Upgrading involves uninstalling the old version and installing the latest version of Aphelion.

Upgrading to Windchill Index Search Powered by FAST InStream

Solutions: Windchill PDMLink and Windchill ProjectLink

Source Releases: 7.0 and 8.0

There is no direct upgrade from Convera RetrievalWare to Windchill Index Search that uses FAST InStream; instead, use the Windchill Installation and Configuration Guide to install Windchill Index Search as a part of your 9.0 Windchill solution. You will need to rebuild your indexes again after the upgrade.

Using New APIs to Set Encoding

Solutions: Windchill PDMLink

Source Releases: 7.0

Developers who need to get an encoding value for files they are creating or writing to (for example, HTML templates) should call `wt.htmlutil.HtmlUtil.getEncoding()`. In prior releases, developers used `wt.util.LocaleUtilities.getEncoding()` for this purpose. The APIs in `wt.util.LocaleUtilities` should only be used when trying to determine the encoding of a file being read (For example, SER or RBINFO files).

Windchill PDMLink Product Information Manager (PIM) Replaced

Solutions: Windchill PDMLink

Source Releases: 7.0

The new Product Structure Explorer (PSE) replaces the Windchill PDMLink Product Information Manager (PIM). Any existing customization of these tools needs to be assessed based on the new capabilities provide by PSE. The supported customization of PSE is documented in the *Windchill Customizer's Guide*.

New Roles in Windchill Templates

Solutions: All Windchill Solutions

Source Releases: 7.0 and 8.0

There are new roles added to the out-of-the-box templates for Windchill solutions. See the *Windchill Business Administrator's Guide* for more information.

Windchill Visualization Services Processing Queues

Solutions: Windchill Visualization Services

Source Releases: 7.0 and 8.0

As part of an upgrade, processing of the installation's background queues must be completed (See "Allow Pending Queue Entries to be Processed" in chapter 2 or 3, depending on the release from which you are upgrading). When upgrading a system that uses the Windchill Visualization Services, let the following complete on their own from the following queues:

- Windchill Visualization Services jobs from the Publishing Queue.

- Any remaining Publishing Queue entries.
- Any remaining undeleted jobs in PublisherQueue or PublisherQueue1.

In addition, after upgrading your system, the processing queues called "PublisherQueue" and "PublisherQueue1" should be deleted using the Windchill queue manager whether all of the pending entries have been processed or not. The 9.0 solution uses the three queues "PublisherQueueH", "PublisherQueueM" and "PublisherQueueL".

Team Administrator Support

Solutions: Windchill ProjectLink, integral Windchill PDMLink and Windchill ProjectLink

Source Releases: 7.0

With Windchill ProjectLink 7.0 and beyond, the Team Administrator is no longer applicable to Windchill ProjectLink. Windchill ProjectLink 7.0 does not use Team templates. In a standalone installation, the utility is no longer available. In an installation combined with Windchill PDMLink, the Team Administrator utility is available, but the team templates created are not applied to project contexts.

Sharing Between Windchill PDMLink and Windchill ProjectLink

Solutions: Windchill PDMLink and Windchill ProjectLink

Source Releases: 7.0 and 8.0

In Windchill PDMLink 9.0, part configurations and part instances cannot be shared to Windchill ProjectLink; therefore, after upgrading to 9.0, part configurations and part instances that have been shared with ProjectLink prior to the 9.0 release will be un-shared.

Migrating ProductView Data

Solutions: ProductView Lite, ProductView

Releases: 7.0 and 8.0

Upgrading to release 9 requires a ProductView viewables migration from ED files to the new ProductView Structure (PVS) file format. The PVS file format reduces the size of the ED files significantly (often reducing files from megabytes to kilobytes in size).

Refer to the appendix titled [Migrating ProductView Data](#) for instructions.

Filtered Views Migration

Solutions: Windchill PDMLink

Releases: 8.0

In past releases, the Products and Libraries list pages provided a single view that a user could modify for columns and sort order. On the search results pages, a view per object type was provided for a user that they could modify for columns and sort order. The user can customize the number of columns that define the sort, 5 being the default value.

In Windchill 9.0, these tables support a new feature that allows a user to have more than one view. Many views are already supplied for the user when Windchill is installed. When your Windchill system is upgraded, the views as they were configured by the users for the above mentioned tables will not be preserved. Users will need to update the tables by creating a new view to get the same behavior they had setup on the system prior to upgrade. Also, the new feature only allows for 3 column sort order.

Other tables such as the Workspaces table, Model Structure Browser that supported creation of multiple views prior to 9.0 will have the views maintained during the migration. Users should not have to re-setup the views after the migration.

Updating Pro/ENGINEER Family Tables

Solutions: Pro/ENGINEER

Releases: 7.0 and 8.0

Starting with Windchill 8.0, enhancements have been made to the format used to store family table data and information. This new format supports the storage of the older family table format. However, any changes that are made to a member of this family table going forward will require that the entire family table gets updated to the newer format. This means that the whole family table needs to be checked out, retrieved in Pro/ENGINEER, and saved into the workspace and checked back into the server in order to update the family table to the new format.

Subscriptions

Solutions: Windchill PDMLink and Windchill ProjectLink

Source Releases: 7.0

It is now possible to create context-based, folder, and object-based subscriptions.

Prior to 9.0, subscriptions were created for each specified event. In 9.0, subscriptions are now created for categories. One or more events are assigned to a

category. Categories are a way to group related events for a subscription in order to simplify the subscription user interface. Each subscription may contain more than 1 category. Some subscriptions that were created prior to 9.0 may no longer exist due to being a duplicate: for example, if a subscription was created to Undo Checkout, Checkout, and Checkin then 3 subscriptions were created prior to 9.0. Since all these events are now under the category, Check Out/Check In, only one subscription will now exist. For further explanation of events, see "Administering Notifications" in the *Business Administrators Guide*.

Prior to 9.0, the property, notify.properties, was read to determine the events the notification package should listen for. This property is no longer used in 9.0. Instead, the notification package reads a list of .xml files listed in the wt.property parameter called wt.notify.subscriptionConfigFiles. For further explanation see "Administering Notifications" in the *Business Administrators Guide*.

Cleanup was done to eliminate internal classes used to reference wt.notify.Notifiable. For a list of classes that are notifiable, reference the Java Doc.

Upgrade Information for Pro/INTRALINK Gateway Customers

Solutions: Pro/INTRALINK Gateway

Releases: 7.0 and 8.0

The Pro/INTRALINK Gateway module is no longer being shipped as of the Windchill 9.0 release. Therefore, in order for Pro/INTRALINK Gateway customers to upgrade to 9.0, specific steps must be performed in order to prepare for the upgrade to 9.0.

1. If not currently on 8.0, the Windchill system must first be upgraded to 8.0
2. Once on 8.0, the Pro/INTRALINK Data Migrator 8.0 can be used to migrate the source Pro/INTRALINK Gateway's source Pro/INTRALINK 3.x database into 8.0. See the *Pro/INTRALINK 8.0 Data Migrator Administrator's Guide* for more information.
3. Upon completion of the Pro/INTRALINK 3.x migration, the 8.0 (intermediate) system can be upgrade to 9.0 using the standard 9.0 upgrade procedures.

If the 9.0 upgrade tools detect and data the system considers still under the ownership of the Pro/INTRALINK Gateway, the upgrade will not proceed. This is an indication that step 1-3 above were either not performed or not completed properly.

Changing the Column Length of a wt.change2.VersionableChangeItem object

Solutions: Windchill PDMLink and Windchill ProjectLink

Source Releases: 7.0

Column lengths over 60 characters are not migrated successfully. To resolve the issue, change the column length (i.e., NAME column) during customization. As stated in the *Windchill Customization Guide*, if the NAME column length of any wt.change2.VersionableChangeItem object, do the same for the master table of the object.

Part and Product Consolidation

Solutions: Windchill PDMLink and Windchill ProjectLink

Source Releases: 7.0 and 8.0

High-level Changes

The pre-9.0 model for products and serial numbered parts fixed the type of the part at creation time and did not allow the type to change. Users who created objects of the wrong type or who wished to trace the part differently in different scenarios quickly discovered the limitations of the class-/type-based implementation.

The consolidation of the three modeled types into the single type (WTPart) removes the limitation, allows for the incorporation of generic parts, and provides additional functionality.

The following high-level changes have been made to the part, part configuration, and part instance model in 9.0:

- The WTPProduct, WTPProductMaster, WTSerialNumberedPart, and WTSerialNumberedPartMaster classes have been removed and instances of these objects will be moved (as part of upgrade) to WTPart and WTPartMaster
- Known references to WTPProduct, WTPProductMaster, WTSerialNumberedPart, and WTSerialNumberedPartMaster will be converted to references to WTPart and WTPartMaster
- A new API, PersistenceHelper.getMappedClassname(String classname), has been added to translate old string values representing the defunct product/serial numbered part classes to "wt.part.WTPartMaster" or "wt.part.WTPart"; these strings can be found in bookmarks, for example, and this API can be used to translate these strings during runtime

- The designation of something as an end item, previously indicated by type (WTProduct), is now managed by a boolean (endItem) on the master (WTPartMaster) and can be changed
- The traceability of a child is no longer determined by type, it's defaulted on the master as defaultTraceCode and finalized on the usage link (WTPartUsageLink) as traceCode
- The trace code can be assigned to any of the values serial number, lot number, lot/serial number, or untraced. Instances created and allocated using lot traceability can be over-allocated (that is, the same instance can be incorporated into multiple instances at the same time)
- Upgrade will set the endItem boolean to true for objects that were WTProducts (including custom subclasses) and false otherwise, will set the defaultTraceCode to "S" (indicating serial number traceability) if the object was a WTProduct or WTSerialNumberedPart and "O" (untraced) if the object was a WTPart, and will ensure that the usage link's traceCode matches that of the child part's defaultTraceCode
- PathOccurrences, which used to need to originate with a WTProduct can now start (and end) anywhere
- The CombinedPathOccurrence is now obsolete, as there are no longer path boundaries that need to be traversed
- Configurations can be created regardless of trace code and regardless of Enditems, but instances can be created only of traceable parts regardless of Enditems.
- A new configuration type, called a "basic" configuration (and designated by the the "basic" boolean), has been created to support configuring only the parts needed to build paths to traced descendants. The premise of this configuration type is that many customers need only to manage the instances allocated by a parent instance and need not record every version of every part in the structure
- Instances add a lotNumber field and can be created in any of the following combinations: serialNumber-only (equivalent to previous releases), lotNumber-only (and, again, instances assigned only a lotNumber can be over-allocated), and lotNumber + serialNumber; the lotNumber/serialNumber combination of the instance must match that of the usage link when allocating instances.

Upgrade Process

Windchill migrates existing products, serial numbered parts, configurations, and instances as follows:

- All rows in the WTProduct/WTSerialNumberedPart tables will be copied to WTPart

- All rows in the WTProductMaster/WTSerialNumberedPartMaster tables will be copied to WTPartMaster
- New rows copied from the WTProductMaster table will have the endItem boolean set to "true" and the defaultTraceCode set to "S" (serial number)
- New rows copied from the WTSerialNumberedPartMaster table will have the endItem boolean set to "false" and the defaultTraceCode set to "S"
- Existing WTPartMasters will have the endItem boolean set to "false" and the defaultTraceCode set to "O" (untraced)
- The traceCode on the WTPartUsageLink will be set to match that of the child part master's defaultTraceCode
- All known references to wt.part.WTProductMaster and wt.part.WTSerialNumberedPartMaster will be converted to references to wt.part.WTPartMaster and all known references to wt.part.WTProduct and wt.part.WTSerialNumberedPart will be converted to references to wt.part.WTPart
- All existing WTProductConfigurations will have the basic boolean set to "false"
- WTProductInstanceMasters, WTProductInstance2s, WTProductConfigurations, and WTProductConfigurationMasters will be created for all existing WTSerialNumberedPartInstances.

Additionally, the type definitions for WTProduct, WTSerialNumberedPart, and their descendants will be altered as follows:

- Disable the definitions for WTProduct and WTSerialNumberedPart and any of their soft-type children. These types will not be displayed when users create new parts, but existing objects of will indicate that they are instances of the disabled types
- Re-parent any modeled children of WTProduct and WTSerialNumberedPart to WTPart
- Copy any attributes assigned to WTProduct/WTSerialNumberedPart to all of the moved, modeled children so as to not alter their type definitions (since they will no longer obtain the attributes through type inheritance)
- PTC recommends deleting - via the type manager - the WTProduct and WTSerialNumberedPart types.

Upgrade leaves the WTProduct, WTSerialNumberedPart, and their children (that is, the soft-type descendants of WTProduct or WTSerialNumberedPart) in disabled state. We consider this a transitional state, as these types will continue to be visible, especially in info pages, even if new instances of them can't be created. We recommend deleting these types using the type manager (the easiest way being that of deleting WTProduct & WTSerialNumberedPart, as this will also recursively delete the children), as doing so should completely remove these types

from the UI (deleting these types will cause instances of these (deleted) types to report themselves as being instances of the WTPart type and any attributes added to the deleted type will still be visible).

We expect most customers are using OOTB container templates and have not created soft sub-types of either WTPProduct or WTSerIALIZEDPart. These customers will, likely, manually delete the types, as noted above, and may notice that -- in existing containers -- parts created as endItems will be auto-numbered. This is because they will be created using a WTPart type, for which auto-numbering is enabled.

The container templates of 8.0 had object-initialization rules (OIRs) specifying that WTPProduct objects be manually numbered. 9.0 also uses OIRs to indicate manual numbering, however, it does this using an attribute condition pertaining to the endItem boolean. Existing containers will not be upgraded to reflect this change. The result is that migrated containers will auto-number parts created with endItem = true and will need to duplicate the rule created for a new container if they wish to continue with manual numbering.

More broadly, no existing object-initialization or policy rule will be migrated (they'll remain in the system as-is). This should marginally impact most customers (as noted above) even if the types are deleted as recommended. Customers with either policy or object-initialization rules written at WTPProduct (or WTSerIALIZEDPart) for which child types have been created will find that the deleting these child types will result in the child types' behavior being different because they will no longer use the rules they inherited from WTPProduct.

Modeled Customizations of WTPProduct/WTPProductMaster

Modeled subclasses of WTPProduct and WTPProductMaster will need to be re-parented to WTPart and WTPartMaster, respectively. Neither WTPProduct nor WTPProductMaster added additional fields (they served as tagging classes for the configuration and instance behavior, which has been moved to part), so the customizations can be simply re-parented without loss of information. You will, however, acquire the endItem & defaultTraceCode properties (which will be migrated for you during the out-of-the-box upgrade). If you wish to retain the behavior of these objects as always being end items (that is, you don't want the user to create an instance of your custom class and not have it be a serial-number traced end item), you may wish to set the endItem/defaultTraceCode values in the class's factories' initialize methods and choose not to expose these properties in the client.

Note that the type manager will not allow a modeled type to extend from a soft type. Your class can not extend from the WTPProduct type in the type manager, so you will lose any policies specified at WTPProduct or WTSerIALIZEDPart which you are inheriting. You will need to manually propagate these policies.

Customizations referring to WTPProduct/WTPProductMaster

Your customizations will also need to remove references to any of the removed classes. You'll need to decide if it's enough to simply replace WTPProduct with WTPart or whether you need to add an additional check for the value of endItem. Keep in mind that the additional interfaces implemented by the product classes are now implemented by the part equivalents (specifically, WTPartMaster adds SerialNumberedConfiguredMaster, EffContext, PathOccurrenceMasterContext, and PathOwner and WTPart adds ConfiguredVersion, PathOccurrenceContext, and PathOwner), so instanceof checks and queries against those interfaces should also be evaluated. Additionally, the concept of the serial numbered part and serial numbered part instance, while still in the model, is no longer expressed in concrete classes; customizations referring to the associated interfaces are obsolete.

Load PDMLink 9.0 Workflows and Lifecycles

Solutions: Windchill PDMLink and Windchill ProjectLink

Source Releases: 7.0 and 8.0

Back up the existing Change Management lifecycles and workflows before starting the Upgrade Manager. You must use the Release 9.0 lifecycles and workflows to take advantage of the new features introduced in Release 9.0 like the tracking change item feature. The customization changes made to the 8.0 workflows and lifecycles can be merged into the release 9.0 lifecycles and workflows by updating the respective templates.

Baselines

Solutions: Windchill PDMLink and Windchill ProjectLink

Source Releases: 7.0 and 8.0

In Windchill PDMLink 9.0, baselines cannot be shared to Windchill ProjectLink; therefore, after upgrading to 9.0 release, baselines that may have been shared to ProjectLink prior to 9.0 release will be un-shared.

Windchill Upgrade Manager and Migrator Operation

At 9.0, the default behavior of the Upgrade Manager is to skip all migrators after any migrator has failed. When upgrading the production database, it is recommended to execute the Upgrade Manager in this mode.

When you are executing test runs, you can configure the Upgrade Manager to continue executing migrators after a migrator fails, to find other potential problems. In this mode, a migrator will only be skipped if it depends on a migrator that has failed.

To set the Upgrade Manager to continue executing migrators after a migrator fails, you need to set the following property and propagate using the following command :

```
xconfmanager -t codebase/wt.properties -s  
wt.upgrade.skipAllIusAfterFirstFailure=false -p
```


A

Upgrade Considerations

This appendix describes best practices you should employ when planning the upgrade process.

Upgrading a multi-server, distributed enterprise Web application, such as a Windchill solution, is a significant project that requires detailed planning and management, a migration team, and 6 to 17 weeks of time to execute. Other factors influencing the time to upgrade include:

- Your level of system customization
- The amount and type of data being upgraded
- The number of integrated PTC, and other, data management products
- The resources available to your migration team
- The accuracy and management of your project plan

Creating an Effective Upgrade Team

Your upgrade team should minimally consist of the following roles. It is common during an upgrade for problems to stack up against a particular role, so planning for redundant and cross-trained resources is advisable. Each person on the upgrade team should be very familiar with the Windchill Upgrade and Migration Guide.

- On-site Project Manager to track issues, manages resources, and ensure the project is on track.
- At least one Systems Engineer who is experienced at installing and resolving problems related to Web servers, operating systems, Oracle, Windchill solutions, and other third-party components.

- At least one Windchill Application Developer who should already be familiar with the customizations to your system and possess significant Java and Oracle skills.

The following are additional recommended resources:

- An experienced Oracle DBA who is available for Oracle upgrades and other database issues.
- A test group or malicious user group of experienced Windchill solution users who can assist in the test phases of the upgrade.

Creating an Upgrade Plan

Creating an upgrade plan is critical to the success of the project. An upgrade plan should consist of all the steps, tasks, and timelines needed to accomplish the upgrade from start to finish. Incorporated into the plan are test phases at crucial points during the upgrade, as well as additional time put aside to fix problems that arise during the upgrade. A solid upgrade plan not only sets expectations for the project, but also leads to a smoother overall upgrade experience and reduces the risk of production downtime after upgrading.

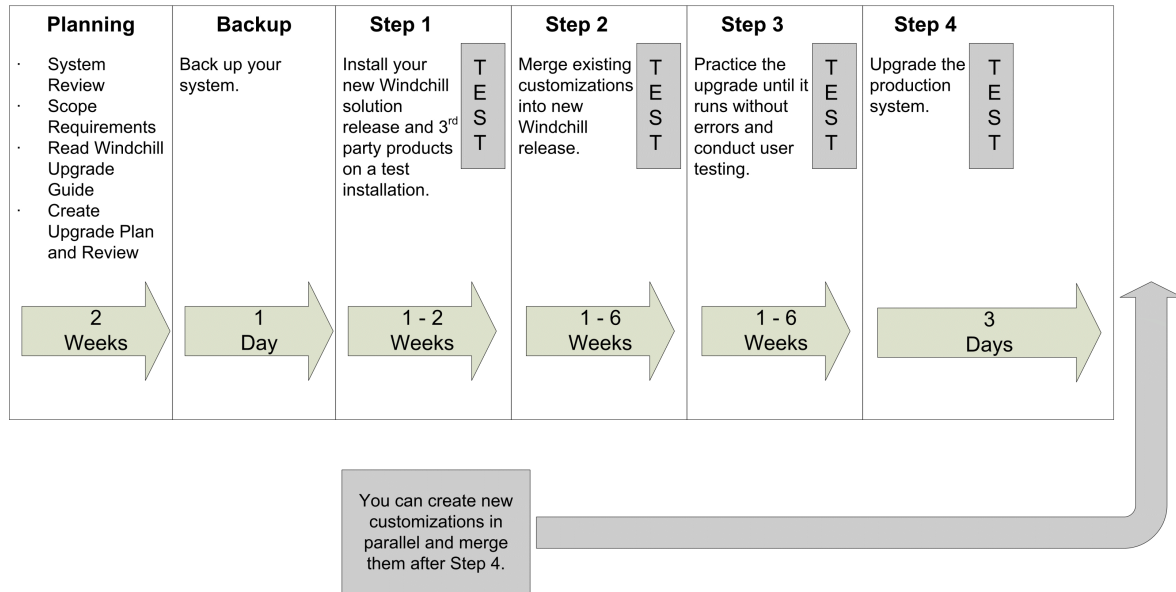
Best Practices for the Upgrade Process

The following items list best practices to follow when planning or implementing an upgrade:

- Keep a log illustrating all changes made to the system (for example, the commands that were executed and the resulting output).
- Stop and address errors before proceeding to the next step in the upgrade process.
- Ensure the test system data closely emulates the production data.
- Ensure that the Windchill source system is backed up and that the database and LDAP backups are done during the same downtime period. Failure to do this results in incompatible data in the database and LDAP backups.
- Practice the upgrade multiple times until there are no errors before attempting the production upgrade.
- Post upgrade user testing (and even malicious user testing) is critical. Many issues are discovered after the test system is upgraded during user testing. Identifying issues prior to a production upgrade increases user acceptance and reduces downtime.
- Incorporate time (many weeks) into your upgrade plan for troubleshooting issues and temp patch delivery
- Do not make any changes to the system during the upgrade (this includes applying Maintenance Only Releases (MORs)).

- Do not change hardware during the upgrade. This introduces additional risk and difficulty in troubleshooting upgrade issues.

The following diagram lists the estimated amount of time it takes for each portion of upgrade:



B

Migrating ProductView Data

This appendix applies to ProductView Lite and ProductView customers. Upgrading to release 9 requires a ProductView viewables migration from ED files to the new ProductView Structure (PVS) file format. The PVS file format reduces the size of the ED files significantly (often reducing files from megabytes to kilobytes in size).



Caution: The ED to PVS migrator changes the data in your Windchill database. Improper use of this tool may corrupt the Windchill database.

Overview

This overview describes the steps you need to take to successfully migrate your ProductView viewables.

1. Review this entire "Migrating ProductView Data" section to understand the options available.
2. Decide the best option for your site based on the time your site has allotted to upgrade, the size and number of viewables to migrate, and any other site considerations.
3. Configure the ED to PVS migrator by editing the ed2pvs.properties file. This must be completed prior to starting the Upgrade Manager.
4. Begin your upgrade.
5. Post-upgrade, if your site opted to migrate a partial amount of viewables, execute the ED to PVS command line utility to complete the migration.
6. Review the UpgradeAdvisories.log to ensure the conversion was successful or review any errors that occurred.

Understanding ED to PVS Migrator Options

The ED to PVS migrator can be configured to work in different ways. Once configured, the ED to PVS migrator takes visualization data and does the following:

1. Extracts the Windchill data from the Windchill database
2. Converts the data
3. Puts the new data in the database

The time to run a conversion is significant for large files. It can more than double the time it takes to complete an upgrade. For this purpose, this migrator can be used in more than one way to mitigate the time to complete your upgrade process.

1. Configure the migrator to migrate all the data at once as part of the upgrade process

This migrates all visualization iterations at one time. Once the migration has completed, the Upgrade Manager will continue the upgrade process. This option takes the longest amount of time, but completes the migration in one step.

2. Configure the migrator to migrate some of the data during the Upgrade Manager process, and use the ED to PVS command line utility to migrate the remaining data post-upgrade

This migrates in one of the following ways:

- a. Migrates only the latest viewables iterations during upgrade. You must use the the ED to PVS command line utility to convert all previous or new iterations post-upgrade.

For example, if you have 500 viewables with three iterations each and migrate using this option, only the latest iteration for each of the 500 viewables is migrated. Post-upgrade, if you need the first two iterations for all of the viewables, you must use the command line utility to migrate the first two iterations for all 500 viewables.

- b. Migrates all viewables iterations for a specified time limit, stops migrating when the time limit is reached, and continues the upgrade using the Upgrade Manager at that point. The remaining unmigrated viewables must be migrated post-upgrade.

For example, if you have 500 viewables with two iterations each and migrate using this option, you can specify to migrate for X hours before continuing the upgrade. The migrator migrates as far as it can through the N^{th} viewable in X hours and stops. Then, the upgrade manager continues and you will have to use the command line utility to finish the migration of the other viewables post-upgrade. In this example, N is assumed to be less than the total number of viewables (500).

3. Configure the migrator to skip the ED to PVS migration step, finish the upgrade, and use the command line utility to convert all the data post-upgrade

This bypasses the ED to PVS migrator completely during the Upgrade Manager process. Your data must be migrated post-upgrade for it to be usable.

Configuring the ED to PVS Migrator

Prior to starting your upgrade, you must change the Ed2pvs.properties file to configure the migrator. This file can be found in your Windchill codebase at:

```
<Windchill>\codebase\com\ptc\wvs\migration\ed2pvs.properties
```

This must be edited before you run the Upgrade Manager. You must uncomment (remove the "#" preceding the property) any property you want the migrator to use. All other properties use the default value.

Note: You must change the time.box property to 0.0 if you want the migration type you select to complete in one attempt. Otherwise, this migrator only operates for the time you specify (six hours, by default) and stop migrating. At that time, the upgrade process continues with other migrators and any unmigrated viewables must be migrated post-upgrade.

Property	Default	Description
ignore.migration	false	Controls whether the Upgrade Manager skips the ED to PVS migrator. A "false" setting executes the migrator and a "true" setting skips it.

Property	Default	Description
migration.type	all	<p>Controls how much data the migrator converts. The options are:</p> <ul style="list-style-type: none"> all - Converts all representables end to end. This is the default. latest - Converts only the latest iterations of each representable. nonlatest - Converts only non-latest iterations. Only use this option if you are certain there have been no new iterations created after the upgrade process finished. <p>If you use "latest" to speed the upgrade process and intend to convert non-latest iterations post-upgrade, it is recommended that you use the "all" option on the command line utility.</p>

Property	Default	Description
time.box	6.0	<p>This property specifies the maximum time, in hours, that this migrator is allowed to run. When this time is reached, the migrator stops and the upgrade process continues on with the next migrator to be executed. Using this property requires you to use the command line utility to convert any unmigrated representations post-upgrade.</p> <p>If no time.box property is specified, then the migrator uses a default time.box value of 6.0 hours.</p> <p>If a time.box value of 0.0 is specified, then no time limit is imposed.</p> <p>To ensure that all viewables are converted at once, this property must be changed to 0.0.</p>
page.size	100	<p>Sets the number of converted representables that are committed to memory before being stored in the database. Setting this too high results in out of memory errors. Works in conjunction with batch size.</p>

Property	Default	Description
batch.size	100	Sets the number of representables taken from memory and put in the database at a given time. Once a representable is in the database, the conversion is permanent.
memory.max.file.size	256	Sets the amount of memory (not physical memory; this is limited by JVM heap size) in kilobytes for in-memory migration. If the ED file being converted is this size, in kilobytes, or smaller, it will be converted in memory. This speeds up conversion significantly.
conversion.dir	C:\PTC\Windchill\temp\	Sets the temporary directory to which converted files are stored before being put in the database. Files that are equal or less than the memory.max.file.size go directly from memory to the database without using this temporary directory. The directory must have full read/write access. Any spaces in the directory name require that the entire directory value be surrounded by double quotes (conversion.dir="conversion.dir=C:\\Windchill\\conversions temp\\").

Using the ED to PVS Command Line Utility

The ED to PVS command line utility can be used to migrate ED to PVS files post-upgrade. You can do this to complete a migration you have started during the Upgrade Manager process or to start the ED to PVS migration post-upgrade.

To execute the utility from the command line, enter the following in a Windchill shell with the appropriate operators appended:

```
windchill
com.ptc.wvs.migration.ProductViewEDToPVSMigrationUtility
```

The following operators can be appended to the launch command:

-h | -help

Displays text-based descriptions of the operators.

-count

Displays a count of the remaining unmigrated representations. Use this operator alone after the launch command.

-representable=<oid of the representable> - dir=<conversion directory>

Performs conversions for all representations associated with the representable for the OID specified. When used, the -dir command line switch can optionally be specified.

-representation=<oid of the representation> - dir=<conversion directory>

Performs conversion for the representation associated with the OID specified. When used, the -dir command line switch can optionally be specified.

-all | latest | nonlatest

These options are identical to the ones described in [migration.type](#).

-dir=<conversion directory>

This option is identical to the [conversion.dir](#).

-timebox=<maximum running time, in hours>

This option is identical to [time.box](#).

Note: If you want the migration to continue until it is complete, you must change this value to 0.0.

-memorymaxfilesize=<maximum file size for in-memory conversions>

This option is identical to [memory.max.file.size](#).

-pagesize=<page size for representables>

This option is identical to [page.size](#).

-batchsize=<batch size of representations>

This option is identical to [batch.size](#).

Using the Command Line Utility Example 1

To count the number of representations that need to be migrated, go to a windchill shell and enter the following on one line:

```
windchill com.ptc.wvs.migration.ProductViewEDToPVSMigrationUtility  
-count
```

Using the Command Line Utility Example 2

To use the representable option, enter the following on one line of a Windchill shell (assuming the OID for this object is "wt.part.WTPart:1978410"):

```
windchill com.ptc.wvs.migration.ProductViewEDToPVSMigrationUtility  
-representable=wt.part.WTPart:1978410
```

The following shows two other examples of using this option:

```
windchill com.ptc.wvs.migration.ProductViewEDToPVSMigrationUtility  
-representable=wt.epm.EPMDocument:8274023
```

```
windchill com.ptc.wvs.migration.ProductViewEDToPVSMigrationUtility  
-representable=wt.doc.WTDocument:8274023
```

Using the Command Line Utility Example 3

If you have already migrated the latest iterations during the Upgrade Manager process and want to migrate the rest of your iterations using the following set of assumptions:

- You want your temporary directory to be changed to "C:\MyPVSMigrations\temp".
- Time box should be set to complete everything that's left to be migrated
- Your JVM heap size can handle a maximum memory file size of one megabyte
- You find the default values for page size and batch size acceptable

Enter the following at the Windchill shell on one line:

```
windchill com.ptc.wvs.migration.ProductViewEDToPVSMigrationUtility  
-all -dir=C:\MyPVSMigrations\temp -timbox=0.0 -  
memorymaxfilesize=1024
```

If you use the same set of assumptions, but use a directory with a space (temp folder), then that would change the command to the following:

```
windchill com.ptc.wvs.migration.ProductViewEDToPVSMigrationUtility  
-all -dir="C:\MyPVSMigrations\temp folder" -timbox=0.0 -  
memorymaxfilesize=1024
```

Accessing the Log for the Migrator and Command Line Utility

The log for the migrator and the ED to PVS command line utility can be found at:

<Windchill>\Upgrade\Upgrade Reports\UpgradeAdvisories.log

After running the Upgrade Manager or the command line utility, this log contains summary-level information on the file size before and after conversion, as well as any errors that may have occurred during conversion.

The logs will generate in MS_logs only when the EDToPVSUtility is executed manually at a command line.

Cleaning Up File Vaults for Pro/INTRALINK

This migration requires an additional step for Pro/INTRALINK administrators. After using the tool, clean up the file vaults using the procedure for deleting orphans described in the Windchill System Administrator's Guide in the chapter titled, "Administering External File Vaults" under the subheading "Maintaining Your Vaults."

C

Part Creation for Migrated Data

This chapter describes how to use the PDMLink part creation tool to selectively create WTParts for objects that have been migrated to PDMLink from Pro/INTRALINK. If you do not want to create WTParts, or create WTParts manually, you can skip this chapter.

For detailed information concerning data migration, refer to the *Pro/INTRALINK Data Migrator Administrator's Guide* on the PTC document reference site at <http://www.ptc.com/appserver/cs/doc/refdoc.jsp>.

Introduction

If you have migrated Pro/INTRALINK data to a PDMLink target system, you can use the PDMLink Part Creation utility to selectively decide which of your migrated CAD Documents should be made into WTParts.

In its default configuration, the part creations tool does not search for CAD documents. The PartCreation.xml file has to be created or changed for every system before the tool is run.

When using the PDMLink Part Creation utility, you can select objects based on the following criteria:

- CAD document authoring application
- Document type
- CAD document name
- CAD document number
- Attribute value
- Release level
- Folder location

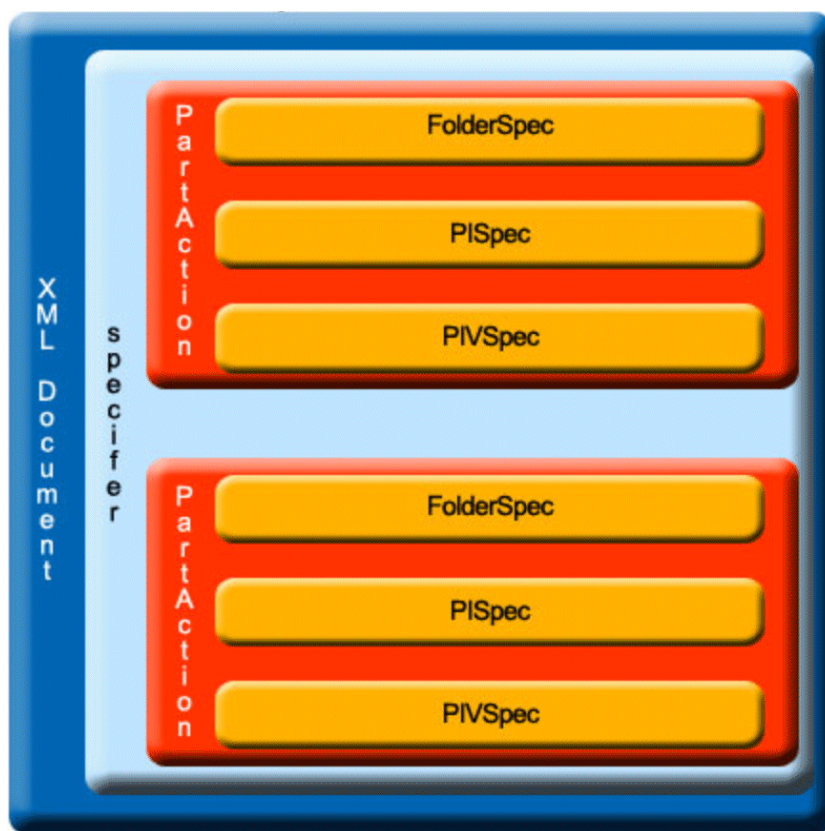
Before You Begin

At its simplest part selection is determined by criteria defined in an XML file which contains one or many PartAction elements. This XML file is used by the part creation tool at runtime and parts are created according to the rules laid out within the PartAction elements.

It is best to think of the PartAction element as a filter that selects the CAD Documents you want and weeds out the ones that you don't want. The PartAction Element contains the Folder Specification (FolderSpec), the Product Item Specification (PISpec) and the Product Item Version Specification (PIVSpec) elements.

The FolderSpec, PISpec and PIVSpec elements allow you to filter CAD Documents by folder location, product item attributes and product item version attributes.

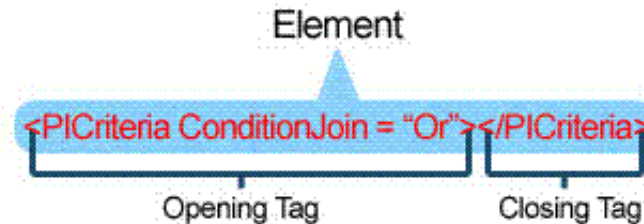
The part selection criteria are comprised of a number of named elements organized into a nested hierarchy. The figure below shows the major parts of that hierarchy and how they fit together.



Syntax

As an XML document, the part specification is comprised of one or more named elements organized into a nested hierarchy. An *element* is an opening tag, some

data and a closing tag. A *tag* is an element name preceded by a less-than symbol (<) and followed by a greater-than (>) symbol. For any given element, the name of the opening tag must match that of the closing tag. A closing tag is identical to an opening tag except the less-than symbol is immediately followed by a forward-slash (</). Tag names are case-sensitive and should use the same case as defined in the DTD file.



Note: Some elements (such as <FolderCondition>, <PICCondition> and <PIVCondition>) contain no data between the opening and closing tags. As such you can end these opening tags with “/>” and leave out the closing tag all together.

For example:

```
<PICCondition Lookup= "name" Operator= "equal" Value="bishop_b.asm">
</PICCondition>
```

Is the same as:

```
<PICCondition Lookup= "name" Operator= "equal" Value=
"bishop_b.asm" />
```

The following section defines each of the XML tags used in the Part Selection Criteria and how they should be used.

Using Elements to Create XML Scripts

Part Selection Elements

This section defines each of the XML tags used in the Part Selection Criteria and how they should be used.

The <specifier> Element

The <specifier> tag is a container for all of the part action elements within the part specification. The <specifier> tag is the very first tag in the part specification definition and the </specifier> is the very last. All other elements in the part selection criteria reside between the two <specifier> tags.

Usage Example

```
<specifier>
  <PartAction>
```

```
      .  
      .  
      </PartAction>  
</specifier>
```

The <PartAction> Element

The <PartAction> element can contain three elements that are used to filter and select your CAD Documents. These elements are the FolderSpec, the PISpec and the PIVSpec. The <PartAction> element must contain at least one of these elements or a combination of several. It is important to note that you cannot use any single element more than once in the <PartAction> element.

The <PartAction> tag defines whether or not the system creates or does not create a part for the CAD documents. Additionally the PartAction specifies the class of WTPart to create from the selected CAD Documents.

Attribute	Definition and Usage
Create	<p>This attribute specifies whether or not the part creation tool creates a WTPart for the CAD Documents selected by the part action.</p> <p>Values: True or False</p> <p>Note: The default value of this attribute is True. The only time you need to specify the Create attribute in the <PartAction> element is when you want to set it to False.</p>
Class	<p>This attribute determines the type of WTPart that the Part Creation tool creates for the CAD Documents selected by the part action. This is a required attribute. This attribute is used with the End Item attribute.</p> <p>Values:</p> <ul style="list-style-type: none">wt.part.WTPart
Generic Type	<p>This attribute specifies the GenericType for a WTPart that the Data Migrator creates for CAD documents. This is a required attribute.</p> <p>Values:</p> <ul style="list-style-type: none">wt.part.Standardwt.part.Variantwt.part.Genericwt.part.ConfigurableGeneric <p>Note: The default value of this attribute is Standard. The only time you need to specify the GenericType attribute in the <PartAction> element is when you want to set it to a different value.</p>

Attribute	Definition and Usage
Default Trace Code	<p>This attribute specifies the DefaultTraceCode for a WTPart that the Data Migrator creates for CAD documents. This is a required attribute.</p> <p>Values:</p> <ul style="list-style-type: none"> • wt.part.NotTraced • wt.part.SerialNumber • wt.part.LotNumber • wt.part.LotSerialNumber <p>Note: The default value of this attribute is NotTraced. The only time you need to specify the DefaultTraceCode attribute in the <PartAction> element is when you want to set it to a different value.</p>
End Item	<p>This attribute specifies whether or not the Data Migrator WTPart for the CAD documents has an EndItem selected by the part action.</p> <p>Values: True or False</p> <p>Note: The default value of this attribute is False. The only time you need to specify the EndItem attribute in the <PartAction> element is when you want to set it to True.</p>

Usage Examples

The following <PartAction> statement specifies that the system should create WTParts of the class “wt.part.WTPart” for any CAD Document selected by the criteria contained within the <PartAction> element.

```

<specifier>
  <PartAction Class="wt.part.WTPart">
    .
    .
  </PartAction>
</specifier>

```

The following <PartAction> statement specifies that the system should not create WTParts for any CAD Document selected by the criteria contained within the <PartAction> element.

```
<specifier>
  <PartAction Create="False">
    .
  </PartAction>
</specifier>
```

Folder Specification Elements

The Folder Specification allows you to select CAD Documents by specific folder locations. The Folder Specification contains three different elements and they are <FolderSpec>, <FolderCriteria> and <FolderCondition>.

The <FolderSpec> Element

The <FolderSpec> element is a container in which one or more <FolderCriteria> elements reside. The <FolderSpec> element allows you to enter criteria for selecting CAD Documents based on one or many folder locations. This element contains both the <FolderCriteria> and the <FolderCondition> tags.

The <FolderSpec> tag uses the following attribute.

Attribute	Definition and Usage
CriteriaJoin	<p>In the event that your <FolderSpec> element should contain multiple <FolderCriteria> statements, this attribute specifies if the system selects CAD Documents that meet all of the criteria or any of the criteria.</p> <p>Values:</p> <ul style="list-style-type: none"> “And”--the system only selects CAD Documents that meet ALL of the criteria specified in the <FolderCriteria> elements. “Or”--the system selects CAD Documents that meet ANY of the conditions specified in the <FolderCriteria> elements.

Usage Example

The following <FolderSpec> statement specifies that the system should select CAD Documents that meet any of the conditions contained within multiple <FolderCriteria> elements.

```
<FolderSpec CriteriaJoin="Or">
  .
  .
</FolderSpec>
```

</FolderSpec>

The <FolderCriteria> Element

The <FolderCriteria> element is a container for all of the individual <FolderCondition> elements in the <FolderSpec>. You can create multiple <FolderCriteria> elements with in the <FolderSpec> element.

Attribute	Definition and Usage
Join	<p>In the event that your <FolderCriteria> element should contain multiple <FolderCondition> statements, this attribute specifies if the system selects CAD Documents that meet all of the criteria or any of the criteria.</p> <p>Values:</p> <ul style="list-style-type: none">• “And”--the system only selects CAD Documents that meet ALL of the criteria specified in the <FolderCondition> elements.• “Or”--the system selects CAD Documents that meet ANY of the conditions specified in the <FolderCondition> elements.

Usage Example

The following <FolderCriteria> statement specifies that the system should select CAD Documents that meet any of the conditions contained with in multiple <FolderCondition> elements.

```
<FolderCriteria ConditionJoin="Or">  
.  
.  
</FolderCriteria>
```

The <FolderCondition> Element

The <FolderCondition> element specifies an individual folder location in which you want to select (or not select) CAD Documents.

Attribute	Definition and Usage
Context	This attribute specifies the product context (including organization) for which the parts have to be created.

Attribute	Definition and Usage
Operator	<p>This attribute specifies an assignment operator that connects the Lookup attribute to the Value attribute.</p> <p>Values:</p> <ul style="list-style-type: none"> • “equal”--indicates that selected CAD Documents must have a location that is equal to the specified value. • “notEqual”--indicates that selected CAD Documents must have a location that is not equal to the specified value.
Value	<p>This attribute specifies the full path to the folder location.</p> <p>Value: “Root Folder/Some_location/”</p>

Usage Example

The following <FolderCondition> statement specifies that the system should select any CAD Document that does not have folder location of “/Default/Design”. Additionally the <FolderCondition> statement specifies that corresponding parts should be created in a product context in the SomeOrg organization.

```
<FolderCondition Operator="notEqual" Value="/Default/Design"
Context="/wt.inf.container.OrgContainer=SomeOrg/
wt.pdmlink.PDMLinkProduct=someProduct" />
```

Product Item Specification Elements

The Product Item Specification allows you to select CAD Documents based on Product Item criteria. The Product Item Specification consists of three different elements and they are <PISpec>, <PICriteria> and <AttrCondition>.

```
<PISpec>
  <PICriteria>
    <AttrCondition>
      .
    </AttrCondition>
  </PICriteria>
</PISpec>
```

The <PISpec> Element

The <PISpec> element is a container in which one or more <PICriteria> elements reside.

The <PISpec> element uses the following attribute.

Attribute	Definition and Usage
CriteriaJoin	<p>In the event that your <PISpec> element should contain multiple <PICriteria> statements, this attribute specifies if the system selects CAD Documents that meet all of the criteria or any of the criteria.</p> <p>Values:</p> <ul style="list-style-type: none">“And”--the system only selects CAD Documents that meet ALL of the criteria specified in the <PICriteria> elements.“Or”--the system selects CAD Documents that meet ANY of the conditions specified in the <PICriteria> elements

Usage Example

The following <PISpec> statement specifies that the system should select CAD Documents that meet any of the conditions contained with in multiple <PICriteria> elements.

```
<PISpec CriteriaJoin= "Or">
  .
  .
</PISpec>
```

The <PICriteria> Element

The <PICriteria> element is a container for all of the individual <PCondition> elements in the <PISpec>. You can create multiple <PICriteria> elements with in the <PISpec> element.

The <PICriteria> element has the following attribute:

Attribute	Definition and Usage
ConditionJoin	<p>In the event that your <PICriteria> element should contain multiple <AttrCondition> statements, this attribute specifies if the system selects CAD Documents that meet all of the condition statements or any of the condition statements.</p> <p>Values:</p> <ul style="list-style-type: none">• “And”--the system only selects CAD Documents that meet ALL of the criteria specified in the <AttrCondition> elements.• “Or”--the system selects CAD Documents that meet ANY of the conditions specified in the <AttrCondition> elements

Usage Example

The following <PICriteria> statement specifies that the system should select CAD Documents that meet any of the conditions contained with in multiple <AttrCondition> elements.

```
<PISpec>
  <PICriteria ConditionJoin= "Or">
    .
    .
  </PICriteria>
</PISpec>
```

The <PICondition> Element

The <PICondition> tag contains the individual conditions under which a particular product item should be selected.

The <PICondition> element has the following attributes:

Attribute	Definition and Usage
Lookup	<p>This attribute indicates whether the <PICondition> element “looks up” an attribute name or a type definition.</p> <p>Values:</p> <ul style="list-style-type: none">“name”--indicates that the focus of the <PICondition> element is an attribute name.“typeahead”--indicates that the focus of the <PICondition> element is a type definition.
Operator	<p>This attribute specifies an assignment operator that connects the Lookup attribute to the Value attribute.</p> <p>Values:</p> <ul style="list-style-type: none">“equal”--indicates that selected CAD Documents must have a name or type definition that is equal to the specified value.“notEqual”--indicates that selected CAD Documents must have a name or type definition that is not equal to the specified value.
Value	<p>If the Lookup attribute is set to “name”, then the expected value is a PI attribute name in quotes.</p> <p>If the Lookup attribute is set to “type_def”, then the expected value is a PI type definition in quotes</p>

Usage Example

The following <PICondition> statement specifies that the system should select PIs with the name of bishop_b.asm.

```
<PICondition Lookup= "name" Operator= "equal"  
Value= "bishop_b.asm"></PICondition>
```

The <NonVersionedAttrCondition> Element

This element allows you to identify non-versioned attribute values as criteria for selecting CAD Documents. This element is highly configurable and has four attributes.

Note: If you are attempting to use a date as the non-versioned attribute condition, you must set the attribute `AttrTypeIsDate`="True".

Attribute	Definition and Usage
AttrName	<p>This attribute specifies the name of a attribute that you want the <AttrCondition> element to search for.</p> <p>Values:</p> <ul style="list-style-type: none">Acceptable values are either an attribute's name or a type definition in quotes.
Operator	<p>This attribute specifies an assignment operator that connects the AttrName attribute to the Value attribute.</p> <p>Values:</p> <ul style="list-style-type: none">"equal"—indicates that selected CAD Documents must have an attribute value that is equal to the specified value."notEqual"—indicates that selected CAD Documents must have an attribute value that is not equal to the specified value."greaterThan"—indicates that selected CAD Documents must have an attribute value that is greater than the specified value."greaterThanOrEqual"—indicates that selected CAD Documents must have an attribute value that is greater than or equal to the specified value."lessThan"—indicates that selected CAD Documents must have an attribute value that is less than the specified value."lessThanOrEqual"—indicates that selected CAD Documents must have an attribute value that is less than or equal to the specified value.
Value	<p>The value of the desired attribute.</p>

Attribute	Definition and Usage
AttrTypeIsDate	<p>If the value is a date, you must set this attribute to “True”. Doing so instructs the system to regard the value as a date rather than a string.</p> <p>Values:</p> <ul style="list-style-type: none"> • “True”—Identifies the attribute value as a date. • “False”—Identifies the attribute value as not being a date.

Usage Example

The following <AttrCondition> statement specifies that the system should select CAD Documents that have a “Some_date” attribute with a value greater than “01/01/1986”.

```
<AttrCondition AttrName="Some_date" Operator="greaterThan"
Value= "01/01/1986" AttrTypeIsDate="True" />
```

Product Item Version Specification Elements

The Product Item Version (PIV) Specification allows you to select CAD Documents based on PIV criteria. The PIV Specification consists of three different elements and they are <PIVSpec>, <PIVCriteria> and <PIVCondition>.

<PIVSpec> Element

The <PIVSpec> element is a container in which one or more <PIVCriteria> elements reside. The <PIVSpec> element contains both the <PIVCriteria> and the <PIVCondition> tags.

The <PIVSpec> tag uses the following attribute.

Attribute	Definition and Usage
CriteriaJoin	<p>In the event that your <PIVSpec> element should contain multiple <PIVCriteria> statements, this attribute specifies if the system selects CAD Documents that meet all of the criteria or any of the criteria.</p> <p>Values:</p> <ul style="list-style-type: none"> • “And” — the system only selects CAD Documents that meet ALL of the criteria specified in the <PIVCriteria> elements. • “Or” — the system selects CAD Documents that meet ANY of the conditions specified in the <PIVCriteria> elements

Usage Example

The following <PIVSpec> statement specifies that the system should select CAD Documents that meet any of the conditions contained with in multiple <PIVCriteria> elements.

```
<PIVSpec CriteriaJoin= "Or">
  .
  .
</PIVSpec>
```

<PIVCriteria> Element

The <PIVCriteria> element is a container for all of the individual <PIVCondition> and <AttrCondition> elements in the <PIVSpec>. You can create multiple <PIVCriteria> elements with in the <PIVSpec> element.

Attribute	Definition and Usage
ConditionJoin	<p>In the event that your <PIVCriteria> element should contain multiple <PIVCondition> or <AttrCondition> statements, this attribute specifies if the system selects CAD Documents that meet all of the condition statements or any of the condition statements.</p> <p>Values:</p> <ul style="list-style-type: none">• “And” — the system only selects CAD Documents that meet ALL of the criteria specified in the <PIVCondition> elements.• “Or” — the system selects CAD Documents that meet ANY of the conditions specified in the <PIVCondition> elements

Usage Example

The following <PIVCriteria> statement specifies that the system should select CAD Documents that meet any of the conditions contained with in multiple <PIVCondition> elements.

```
<PIVSpec>
  <PIVCriteriaConditionJoin= "Or">
    .
    .
  </PIVCriteria>
</PIVSpec>
```

<PIVCondition> Element

The <PIVCondition> tag contains the individual conditions under which a particular product item version should be selected.

Attribute	Definition and Usage
Lookup	<p>This attribute indicates whether the <PIVCondition> element “looks up” an attribute name or a type definition.</p> <p>Values:</p> <ul style="list-style-type: none">• “name”--indicates that the focus of the <PIVCondition> element is an attribute name.• “type_def”--indicates that the focus of the <PIVCondition> element is a type definition.
Version	<p>This attribute specifies whether the <PIVCondition> element selects all versions, the latest version or a specific version of a CAD Document.</p> <p>Values:</p> <ul style="list-style-type: none">• “latest”—indicates that the <PIVCondition> element selects the latest version.• “all”— indicates that the <PIVCondition> element selects all versions of a CAD Document.• “specific”— indicates that the <PIVCondition> element select CAD Documents with a specific version value. <p>Note: If the Version attribute is set to “specific” then you must also provide both the Operator and Value attributes.</p>
Operator	<p>This attribute specifies an assignment operator.</p> <p>Values:</p> <ul style="list-style-type: none">• “equal”—indicates that selected CAD Documents must have criteria that is equal to the specified value.• “notEqual”— indicates that selected CAD Documents must have criteria that is not equal to the specified value.• “greaterThan”— indicates that selected CAD Documents must have criteria that is greater than the specified value.

Attribute	Definition and Usage
Operator (continued)	<p>This attribute specifies an assignment operator.</p> <p>Values:</p> <ul style="list-style-type: none"> • “greaterThanOrEqual”— indicates that selected CAD Documents must have criteria that is greater than or equal to the specified value. • “lessThan”— indicates that selected CAD Documents must have criteria that is less than the specified value. • “lessThanOrEqual”— indicates that selected CAD Documents must have criteria that is less than or equal to the specified value.
Value	<p>Indicates the version value you want to search for.</p> <p>Value: The any valid version is an acceptable value.</p>
Latest	<p>This attribute, when set to “True”, instructs the system to select only the latest PIV. For example, if you should have a PI with multiple versions (A.0, B.0, B.1, C.0, C.1, C.2), if this attribute is set to “True” only the latest PIV (C.2) is selected.</p> <p>Values:</p> <ul style="list-style-type: none"> • “True”—selects CAD Documents having the latest revision, version, or release level. • “False”—selects all PIVs including the latest.
LatestAtRL	<p>This attribute instructs the system to select the latest PIV at a specified release level.</p> <p>Value: Any release level name in quotes is an acceptable value.</p>
LatestOnRev	<p>This attribute instructs the system to select the latest PIV of a specified revision.</p> <p>Value: Any revision name in quotes is an acceptable value.</p>

Attribute	Definition and Usage
LastVerOnAllRevs	<p>This attribute instructs the system to select the latest version on all revisions.</p> <p>Values:</p> <ul style="list-style-type: none"> • “True”—indicates that the system should only select PIVs that are latest version on each revision. • “False”—indicates that they system should not invoke this restriction.

Usage Example

The following <PIVCondition> statement specifies that the system should select the latest PIVs with the release level of “released”.

```
<PIVCondition Lookup="release_level" Operator="equal"
value="released" Latest= "True"/>
```

The <VersionedAttrCondition> Element

The <VersionedAttrCondition> element allows you to use versioned attribute criteria to select CAD Documents.

Attribute	Definition and Usage
AttrName	<p>This attribute specifies the name of a versioned attribute that you want the <VersionedAttrCondition> element to search for.</p> <p>Value: Any versioned attribute’s name in quotes</p>
Operator	<p>This attribute specifies an assignment operator that connects the AttrName attribute to the Value attribute.</p> <p>Values:</p> <ul style="list-style-type: none"> • “equal”—indicates that selected CAD Documents must have an attribute value that is equal to the specified value. • “notEqual”—indicates that selected CAD Documents must have an attribute value that is not equal to the specified value. • “greaterThan”—indicates that selected CAD Documents must have an attribute value that is greater than the specified value.

Attribute	Definition and Usage
Operator (continued)	<p>This attribute specifies an assignment operator that connects the AttrName attribute to the Value attribute.</p> <p>Values:</p> <ul style="list-style-type: none"> • “greaterThanOrEqual”—indicates that selected CAD Documents must have an attribute value that is greater than or equal to the specified value. • “lessThan”—indicates that selected CAD Documents must have an attribute value that is less than the specified value. • “lessThanOrEqual”—indicates that selected CAD Documents must have an attribute value that is less than or equal to the specified value.
Value	<p>This attribute specifies the PIV attribute value that you wish to select.</p> <p>Value: Any value relevant to the attribute is acceptable. If the value is a date it should be entered in the following format:</p> <p>“mm./dd/yyyy:hh24:mi:ss”</p>
AttrTypeIsDate	<p>If the value is a date, you must set this attribute to “True”. Doing so instructs the system to regard the value as a date rather than a string.</p> <p>Values:</p> <ul style="list-style-type: none"> • “True”—Identifies the attribute value as a date. • “False”—Identifies the attribute value as not being a date.

Usage Example

The following <VersionedAttrCondition> statement selects PIVs with the versioned attribute “Vfb_Str” set to “In Use”.

```
<VersionedAttrCondition AttrName= "Vfb_Str" Operator = "equal"
Value = "In Use"/>
```

The <LifeCycleAttrCondition> Element

The <LifeCycleAttrCondition> element allows you to use lifecycle attribute criteria to select CAD Documents.

Attribute	Definition and Usage
AttrName	<p>This attribute specifies the name of the lifecycle attribute for which you want to search.</p> <p>Value: Any lifecycle attribute name in quotes.</p>
Operator	<p>This attribute specifies an assignment operator that connects the AttrName attribute to the Value attribute.</p> <p>Values:</p> <ul style="list-style-type: none">• “equal”—indicates that selected CAD Documents must have an attribute value that is equal to the specified value.• “notEqual”—indicates that selected CAD Documents must have an attribute value that is not equal to the specified value.• “greaterThan”—indicates that selected CAD Documents must have an attribute value that is greater than the specified value.• “greaterThanOrEqual”—indicates that selected CAD Documents must have an attribute value that is greater than or equal to the specified value.• “lessThan”—indicates that selected CAD Documents must have an attribute value that is less than the specified value.• “lessThanOrEqual”—indicates that selected CAD Documents must have an attribute value that is less than or equal to the specified value.
Value	<p>This attribute specifies the lifecycle value that you wish to select.</p> <p>Value: Any value relevant to the lifecycle is acceptable. If the value is a date it should be entered in the following format:</p> <p>“mm/dd/yyyy:hh24:mi:ss”</p>

Attribute	Definition and Usage
AttrTypeIsDate	<p>If the value is a date, you must set this attribute to “True”. Doing so instructs the system to regard the value as a date rather than a string.</p> <p>Values:</p> <ul style="list-style-type: none"> • “True”—Identifies the attribute value as a date. • “False”—Identifies the attribute value as not being a date.

Usage Example

The following <LifecycleAttrCondition> statement specifies that the system should select PIs with the lifecycle attribute “date”. Additionally, the date value has to be greater than 01/01/1986.

```
<LifecycleAttrCondition AttrName="date" Operator="greaterThan"
Value= "01/01/1986" AttrTypeIsDate="True" />
```

Putting it All Together – Applying Structure and Syntax

This section explains how the part selection criteria is structured. You can now start to put the structure and the syntax together into your own part selection criteria.

By default, the Data Migrator part select specification file is set up to create WTParts for each and every Pro/ENGINEER Part and Assembly that the system migrates. The default part selection criteria for creating WTParts is located at:

```
\\ilwcmigration\loadXMLFiles\ilwcmigration\
wt_part_creation_criteria.xml
```

In order to create customized part selection criteria, you must modify this file. This is an XML file and can be edited with a standard text editor. When opened, the part selection criteria should look as follows:

```
<specifier>
  <PartAction Class="wt.part.WTPart">
    <PISpec CriteriaJoin="Or">
      <PICriteria ConditionJoin="Or">
        <PICondition Lookup="type_def"
          Operator="equal" Value="Part" />
        <PICondition Lookup="type_def"
          Operator="equal" Value="Assembly" />
      </PICriteria>
    </PISpec>
  </PartAction>
</specifier>
<?xml version="1.0" encoding="UTF-8"?>
<!--
```

Note: When editing this file, keep in mind that the <PartAction> element can contain the following combinations of elements:

- FolderSpec, PISpec, PivSpec
- FolderSpec, PISpec
- FolderSpec, PIVSpecPISpec, PIVSpec
- FolderSpec
- PISpec
- PIVSpec

Examples of Common Part Selection Criteria

The following section contains examples of specific part selection criteria. Each example contains a table to explain important condition statements in the coding sample.

Example 1: Selecting Singular PIVs with the Following Attributes

Here is an example XML script where the part selection criteria *only selects PIVs with the following attributes*.

- Latest PIV with a release level of “Released”
- In the folder “Root Folder/Ready_to_be_Released”
- With the versioned attribute “Customer” set to “PTC”

```
<Specifier>
  <PartAction Class="wt.part.WTPart">
    <FolderSpec CriteriaJoin="And">
      <FolderCriteria ConditionJoin="And">
        <FolderCondition Lookup= "Fullpath"
          Operator="equal" Value="Root
            Folder/Ready_to_be_released" />
      </FolderCriteria>
    </FolderSpec>
    <PIVSpec CriteriaJoin="Or">
      <PIVCriteria ConditionJoin="And">
        <PIVCondition latestAttrl="Released" />
        <VersionedAttrCondition AttrName="Customer"
          Operator="equal" Value="PTC" />
      </PIVCriteria>
    </PIVSpec>
  </PartAction>
</Specifier>
<?xml version="1.0" encoding="UTF-8"?>
<!--
```

Note: The WTParts to be created in this example will be Standard WTParts. They are not end items and will not be traced.

Where	Indicates
<pre><FolderCondition Lookup= "Fullpath" Operator="equal" Value="Root Folder/Ready_to_be_released" /></pre>	The folder name.
<pre><PIVCondition latestAtRl="Released" /></pre>	Only the latest Pro/INTRALINK PIVs with a release level of Released.
<pre><VersionedAttrCondition AttrName="Customer" Operator="equal" Value="PTC" /></pre>	Versioned attribute “Customer” set to “PTC.”

Example 2: Selecting Any PIVs with One or More of the Following Attributes

Here is an example XML script where the part selection criteria selects *any PIVs with one or more of the following attributes*:

- Parts and Assemblies with a name like “Turbine”.
- Latest Pro/INTRALINK PIVs only.
- In the folder “Root Folder/Thermal_Power_Plant”
- With the life cycle attribute “State” set to “Modified”

```
<Specifier>
  <PartAction Class="wt.part.WTPart">
    <FolderSpec CriteriaJoin="And">
      <FolderCriteria ConditionJoin="And">
        <FolderCondition Lookup= "Fullpath"
          Operator="equal" Value="Root
            Folder/Thermal_Power_Plant" />
      </FolderCriteria>
    </FolderSpec>
    <PISpec CriteriaJoin="Or">
      <PICriteria ConditionJoin="Or">
        <PICondition Lookup="name" Operator="equal"
          Value="Turbine*" />
      </PICriteria>
    </PISpec>
    <PIVSpec CriteriaJoin="Or">
      <PIVCriteria ConditionJoin="And">
        <PIVCondition Latest="True" />
        <LifeCycleAttrCondition AttrName="State"
          Operator="equal" Value="Modified" />
      </PIVCriteria>
    </PIVSpec>
  </PartAction>
</Specifier>
<?xml version="1.0" encoding="UTF-8"?>
<!--
```

Where	Indicates
<FolderCondition Lookup= "Fullpath" Operator="equal" Value="Root" Folder/Thermal_Power_Plant" />	The folder name.
<PCondition Lookup="name" Operator="equal" Value="Turbine*" />	Parts and assemblies with a name that includes the word "turbine."
<PIVCondition Latest="True" />	Only the latest Pro/INTRALINK PIVs.
<LifeCycleAttrCondition AttrName="State" Operator="equal" Value="Modified" /> </PIVCriteria>	Life cycle states set to Modified.

Example 3: Selecting and Deselecting PIVs with the Following Attributes

Here is an example XML script where the part selection criteria selects PIVs with specific criteria and eliminates PIVs with specific criteria.

For this example, a *All PIVs with the following attributes are selected:*

- All PIVs with a **version of "4"** and a **revision of "C"**

For this example, *All PIVs with the following attributes are not selected (eliminated):*

- **PIVs in the folder "Root Folder/Back_Up"**

```

<Specifier>
  <PartAction Class="wt.part.WTPart">
    <PIVSpec CriteriaJoin="Or">
      <PIVCriteria ConditionJoin="And">
        <PCondition Lookup="version"
          Operator="equal" Value="4" />
        <PCondition Lookup="revision"
          Operator="equal" Value="C" />
      </PIVCriteria>
    </PIVSpec>
  </PartAction>
  <PartAction Class="wt.part.WTPart" Create="False">
    <FolderSpec CriteriaJoin="And">
      <FolderCriteria ConditionJoin="And">
        <FolderCondition Lookup= "Fullpath"
          Operator="equal" Value="Root
          Folder/Back_Up" />
      </FolderCriteria>
    </FolderSpec>
  </PartAction>
</Specifier>
<?xml version="1.0" encoding="UTF-8"?>
<!--

```


Where	Indicates
<PIVCondition Lookup="version" Operator="equal" Value="4" />	All Pro/INTRALINK PIVs with a version of 4.
<PIVCondition Lookup="revision" Operator="equal" Value="C" />	All Pro/INTRALINK PIVs with a revision of C.
<PIVCriteria ConditionJoin="And">	The condition for joining PIV criteria is And. In this example, this means that the criteria are all Pro/INTRALINK PIVs with a version of 4 and a revision of C.
<PartAction Class="wt.part.WTPart" Create="False">	The part selection criteria does not select PIVs with the following attributes.
<FolderCondition Lookup= "Fullpath" Operator="equal" Value="Root Folder/Back_Up" />	The folder name.

Examples of Common PartAction Criteria

The following section contains examples of common PartAction criteria. Each example contains a table to explain important condition statements in the coding sample.

Example 1: Creating a WTPart for PIVs with the Following Attributes

For example, enter the following XML script to create a WTPart for all PIVs whose PIs are a Pro/ENGINEER part or Pro/ENGINEER assembly, and those PIVs have the attribute (UDA) “ERP State” whose value is “Released.”

```
<<PartAction Create="True", Class="wt.part.WTPart">
  <PISpec>
    <PISpec CriteriaJoin="And">
      <PICriteria ConditionJoin="And">
        <AttrCondition AttrName="number" Operator="notEqual"
          Value="0-0-0" AttrTypeIsDate = "false" />
      </PICriteria>
    </PISpec>
  </PartAction>
</PartAction>
<?xml version="1.0 encoding="UTF-8"?>
<!--
```

Where	Indicates
<code><PIVCondition Version="specific" Value="C" /></code>	All Pro/INTRALINK PIVs with a version of 4.
<code><PIVCondition Version="specific" Value="C" /></code>	All Pro/INTRALINK PIVs with a revision of C.
<code><PIVCriteria ConditionJoin="And"></code>	The condition for joining PIV criteria is And. In this example, this means that the criteria are all Pro/INTRALINK PIVs with a version of 4 and a revision of C.
<code><PartAction Class="wt.part.WTPart" Create="False"></code>	The part selection criteria does not select PIVs with the following attributes.
<code><FolderCondition Operator="equal" Value="/Default/folder_name" Context="/wt.inf.container.OrgContainer=WCQA/wt.pdmlink.PDMLinkProduct=product_name" /></code>	The folder name.

Using the Part Create Migration Tool to Create XML Scripts

The part creation tool allows the user to build parts and product structure for selected EPM documents and EPM document iterations as part of the Pro/INTRALINK to Windchill PDMLink migration process.

Users can create parts and product structure for all CAD documents, including all versions and iterations representing a Pro/ENGINEER part and assembly file types.

The **ProIntralink to PDMLink Part Create Migration Tool** can perform the following functions:

Function	Definition and Usage
Search for CAD documents to process	Search and identify which existing EPM documents require a corresponding WTPart.
Validate objects and view warnings	Validate and assign case to EPM Documents from the list of EPM documents requiring a corresponding WTPart.
Create new parts	Create new WTParts.

Function	Definition and Usage
Create links to CAD documents	Link EPM Documents to new parts or existing parts.
Build part structures	Build the part structure.
Add parts to baselines	Optionally, add parts to baselines.
Delete a temporary status table	Optionally, delete the temporary status table.

Running the Part Create Migration Tool

The **ProIntralink to PDMLink Part Create Migration Tool** is a command-line driven tool that can be accessed from a Windchill shell. To start the tool do the following:

4. Enter the following command in your Windchill shell:

```
java com.ptc.windchill.pdmlink.proimigration.server.  
WTPartCreator
```

After entering the command, you will be prompted to enter a username and password.

5. Enter a username and password that belongs to an Administrator group.
6. The system starts the **ProIntralink to PDMLink Part Create Migration Tool**. The main window for the part creation tool opens:

```
ProIntralink to PDMLink Part Create Migration Tool  
-----  
  
1. Search for CAD Documents to process.  
2. Validate your objects, and see existing warnings.  
3. Create new parts.  
4. Create links WTPart->EPMDocument.  
5. Build Part Structures.  
6. Add Parts to Baselines.  
7. Delete the temporary status table.  
8. Exit  
  
>>> Choose an option:
```

7. To choose an option, enter the option number and press Enter. The window pertaining to the option opens.

Creating XML Scripts

8. Create an XML script using the part selection elements and tags for the option you selected.

Viewing Reports

9. After the script runs, visit the logs folder <WT_HOME>/logs to view log files produced based on the part creation option and criteria executed.

Some example log files are:

- proisearch.log
- proivaldate.log
- proicreate.log

D

Upgrade Manager Usage

To see the commands available from the Upgrade Manager script, enter either of the following at the command line:

```
UpgradeManager -help
UpgradeManager -h
```

Output is similar to the following (which has been reformatted for presentation in the manual):

Command	Description
-h --help	Display this message
-newiu	Create a new incremental update and places it under <Windchill>/Upgrade/UpgradePhases
-listius	List all incremental updates
-dependencyreport <reportfile> <source-release-IDs> <target-release-IDs>	Produce a report describing the dependencies between all incremental updates in each phase. Source and target release IDs should be comma-delimited lists of one or more release IDs (for example, wnc.7.0.0.67,wpdm.7.0.0.67)
-exportdbhistory <file>	Export the contents of the database's install and upgrade history into the specified file.
-importdbhistory <file>	Read the install and upgrade history from the specified XML file and replace the database's history with it.
-cs	Performs only the Compare Schema step.

Command	Description
-debug	Displays diagnostic information about the internal state of the Upgrade Manager.
-verbose	Prints all log file output to the console.

Sample Install and Upgrade History XML

In this example, the database was installed with release 6.2.6 PDMLink and upgraded to 8.0 M030 PDMLink, Info * Engine, Windchill, and the Windchill Service Pack. It is now been upgraded to 9.0 All products listed were upgraded to the 9.0 release.

```
<?xml version="1.0" encoding="UTF-8"?>
<InstallAndUpgradeHistory>
  <Installation complete="yes" id="1" timestamp="2005.01.18
16:52:42"
    timestampFormat="yyyy.MM.dd HH:mm:ss">
    <Assembly releaseId="plm.6.2.6.00.10"/>
    <Assembly releaseId="wnc.6.2.6.00.32"/>
  </Installation>
  <Installation complete="yes" id="2" timestamp="2006.11.15
15:10:22"
    timestampFormat="yyyy.MM.dd HH:mm:ss">
    <Assembly releaseId="wmcattia4.8.0.20.16"/>
    <Assembly releaseId="wsp.8.0.20.16"/>
    <Assembly releaseId="ie.8.0.20.16"/>
    <Assembly releaseId="vizwvs.8.0.20.15"/>
    <Assembly releaseId="i2w.8.0.20.16"/>
    <Assembly releaseId="infomodeler.8.0.20.16"/>
    <Assembly releaseId="wnc.8.0.20.16"/>
    <Assembly releaseId="vizdocadobe3.8.0.00.72"/>
    <Assembly releaseId="vizpview.8.0.20.15"/>
    <Assembly releaseId="wmcadds.8.0.20.16"/>
    <Assembly releaseId="pdml.8.0.20.16"/>
    <Assembly releaseId="jre.8.0.00.73"/>
    <Assembly releaseId="vizstellent.8.0.20.15"/>
    <UpgradePhase complete="yes" id="1"

phaseType="com.ptc.windchill.upgrade.history.UpgradePhaseType.VERI
FY_PRE_CONDITIONS">
```

```

        <IUApplication name="**PDMLink** Validate Subfolders,
Domains, and Cabinets Preconditions"
        uuid="474447248-1109109186819-6588476-128-
10-253-132"/>
        <IUApplication name="Create New Modeled Types
ID_UPDATE_COUNT_OBJECT and ID_OID_OBJECT"
        uuid="111451677-1092420581219-30533424-115-
8-253-132"/>
        <IUApplication name="**PDMLink** Validate Personal Cabinet
Data Precondition"
        uuid="583340605-1077159082629-31817359-167-
9-253-132"/>
        </UpgradePhase>
        <UpgradePhase complete="yes" id="2"

phaseType="com.ptc.windchill.upgrade.history.UpgradePhaseType.COMP
ARE_SCHEMA"/>
        <UpgradePhase complete="yes" id="3"

phaseType="com.ptc.windchill.upgrade.history.UpgradePhaseType.UPGR
ADE_SCHEMA"/>
        <UpgradePhase complete="yes" id="4"

phaseType="com.ptc.windchill.upgrade.history.UpgradePhaseType.EXEC
UTE_STANDALONE_MIGRATORS">
        <IUApplication name="**PDMLink** Creation of Exchange
container"
        uuid="933381563-1106173952151-31817359-211-
10-253-132"/>
        <IUApplication name="**PDMLink** Move Personal Cabinets to
ExchangeContainer"
        uuid="575431584-1106237765760-31817359-211-
10-253-132"/>
        <IUApplication name="**PDMLink** Upgrade UFID's of Users
and Groups"
        uuid="711263270-1106237772510-31817359-211-
10-253-132"/>
        <IUApplication name="**PDMLink** Migrator for the
Configuring access to users to accomplish the 6.x equivalent of UI
protected access."
        uuid="842862718-1106237778947-31817359-211-
10-253-132"/>
        <IUApplication name="**PDMLink** Migrate Notebooks, and
related objects, lacking a subject link."
        uuid="130666970-1084388779779-14688457-225-
8-253-132"/>
        <IUApplication name="** PDMLink ** Migrate Notebook/Forum
to be DomainAdministered."
        uuid="499727551-1106244153738-31817359-211-
10-253-132"/>
        <IUApplication name="** PDMLink ** Migrate Content from
Notebook to ImportedBookmark"
        uuid="032473000-1106244171442-31817359-211-
10-253-132"/>
        <IUApplication name="Notebook Hotlist" uuid="662165317-
1062791980828-12170552-191-10-253-132"/>

```



```

        <IUApplication name="**PDMLink** Change Lifecycle Template
Migrator"
                                uuid="777199707-1055446780311-1207047-32-8-
253-132"/>
        <IUApplication name="DerivedImage 5.0 to 6.0&#x9;-
Additional"
                                uuid="371628560-1031150055062-4944979-103-
8-253-132"/>
        <IUApplication name="Populate column MarkForDeleteA2 for
classes that are descendents of wt.fc.Persistable"
                                uuid="733104606-1046373739504-5394746-63-11-
253-132"/>
        <IUApplication name="QueueEntries ByteArray Conversion"
                                uuid="188789339-1050318621843-126452-136-
169-21-130"/>
        <IUApplication name="Populate Managed Baselines Semantic
Keys table"
                                uuid="792423912-1053112871730-16795115-156-
8-253-132"/>
        <IUApplication name="ControlBranch column Name changes"
                                uuid="669808434-1084873450633-2569862-72-
185-21-130"/>
        <IUApplication name="**PDMLink ** Creation of Default Org
container"
                                uuid="987336851-1106175343182-31817359-211-
10-253-132"/>
        <IUApplication name="Reparenting Document Reference link
WTDocumentDependencyLink"
                                uuid="719923676-1054159456076-5897553-190-
8-253-132"/>
        <IUApplication name="Assign entry numbers to WtQueueEntries
with null entry numbers."
                                uuid="357684158-1066764440066-7971559-177-
8-253-132"/>
        <IUApplication name="Populate Change Key table"
                                uuid="825530212-1062179244527-14161796-132-
9-253-132"/>
        <IUApplication name="Populating DerivedImage and WtMarkUp"
                                uuid="092988449-1047485683351-5424345-176-
10-253-132"/>
        <IUApplication name="EPMWorkspace checkpoint reference
update for 7.0"
                                uuid="505899940-1051897777779-126452-70-52-
21-130"/>
        <IUApplication name="AclEntrySet migrator"
                                uuid="786179653-1049489147208-4821337-121-
8-253-132"/>
        <IUApplication name="**PDMLink** Migrate PDMLink 6.2.6 team
templates for PDMLink 7.0 containers"
                                uuid="032966818-1057931919880-31564808-167-
9-253-132"/>
        <IUApplication name="**PDMLink** Migrate PDMLink 6.2.6
repositories to PDMLink 7.0 containers"
                                uuid="185178154-1054135185692-27832-112-8-
253-132"/>
        <IUApplication name="**PDMLink** Migrate
WfExecutionObject"

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                                uuid="939092071-1065816658528-23110255-167-
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        <IUApplication name="**PDMLink** Move System Cabinet
contents to ExchangeContainer"
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185-21-130"/>
        <IUApplication name="**PDMLink** Migrate Masters"
                                uuid="026465870-1065631596601-19764978-112-
8-253-132"/>
        <IUApplication name="**PDMLink** Migrate Workflow Templates
and LifeCycleTemplateMasters"
                                uuid="329567934-1067193469610-11508030-167-
9-253-132"/>
        <IUApplication name="** PDMLink ** Migrate Team Template."
                                uuid="418476317-1106237757619-31817359-211-
10-253-132"/>
        <IUApplication name="**PDMLink** Contain Newly Domain
Administered Forum/Bookmark/Notebook/Meeting Objects"
                                uuid="281934196-1073943336332-19480755-225-
8-253-132"/>
        <IUApplication name="**PDMLink** Moving groups from product
and library domains to PDM domain."
                                uuid="423686146-1061374181900-16795115-72-
185-21-130"/>
        <IUApplication name="Migrator for data in personal
cabinets, including checked out objects."
                                uuid="297478396-1055498602383-15628820-72-
185-21-130"/>
        <IUApplication name="**PDMLink** Setting container
reference on EPMWorkspace for PDMLink"
                                uuid="469894236-1054310235481-32079775-70-
52-21-130"/>
        <IUApplication name="**PDMLink** Set Site Container
Reference on Remaining Objects."
                                uuid="298489787-1084822235687-14688457-225-
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        <IUApplication name="**PDMLink** Container Typing"
                                uuid="069255197-1086103155962-2569862-167-
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Float datatype"
                                uuid="843977752-1046195804671-4898828-172-
9-253-132"/>
        <IUApplication name="Migration of IBA Ratio datatype to IBA
Float datatype, Part II"
                                uuid="068694239-1122067435625-11508030-152-
10-253-132"/>
        <IUApplication name="Migrate Folder and
SubFolderLinkConstraints"
                                uuid="881700694-1062670156529-15735326-211-
185-21-130"/>
        <IUApplication name="EPMWorkspace column change 7.0"
                                uuid="786725024-1051024439394-1760304-122-
52-21-130"/>
        <IUApplication name="**PDMLink** Migrates groups from the
system domain to the unaffiliated domain"

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                                uuid="501286422-1106241964881-31817359-211-
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        <IUApplication name="Templateable Migrator"
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8-253-132"/>
        <IUApplication name="Handle the unintended columns (3). "
                                uuid="217194799-1068654420505-21514757-191-
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        <IUApplication name="Migrate Type Definitions"
                                uuid="618634545-1039728093781-6478569-172-
9-253-132"/>
        <IUApplication name="Changing status of EXECUTING queue
entries"
                                uuid="518233291-1078239816609-22293109-155-
9-253-132"/>
        <IUApplication name="Removes unnecessary CheckoutLink
objects."
                                uuid="145600967-1049934713873-7970805-156-
8-253-132"/>
        <IUApplication name="Apply Organization Reference for
Organization Owned"
                                uuid="231667453-1067537300177-10044878-145-
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        <IUApplication name="Migrator to exclude the orignial
migrator for &#xA;&#x9;&#x9;Creating/Updating AccessPolicyRule and
PolicyAcl for Site Object"
                                uuid="565471196-1065626263623-11383252-176-
10-253-132"/>
        <IUApplication name="AnnotationSet column change - 7.0"
                                uuid="519737772-1054644446031-396617-105-9-
253-132"/>
        <IUApplication name="EPMDocumentMaster OccurrenceTable
column name change - 7.0"
                                uuid="439434760-1050419945695-1760304-122-
52-21-130"/>
        <IUApplication name="ECAD Migrator for 7.0"
                                uuid="894814080-1052236395877-1760304-122-
52-21-130"/>
        <IUApplication
name="WTPartAlternateLink/WTPartSubstituteLink Update"
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253-132"/>
        <IUApplication name="Update for StreamId sequence"
                                uuid="306579657-1080692912687-15964986-248-
97-253-132"/>
        <IUApplication name="WTDocumentUsageLink Migrator"
                                uuid="747985152-1047585968405-7652266-112-
8-253-132"/>
        <IUApplication name="Set Rounting flag to LifeCycle
template master."
                                uuid="876991926-1051802691040-9489155-191-
10-253-132"/>
        <IUApplication name="Handle the unintended columns (2). "
                                uuid="180246195-1054838997871-15628820-191-
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        <IUApplication name="Move Specific Report Templates to
SiteContainer"

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                                uuid="790487878-1059732565394-15628820-72-
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schema changes"
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        <IUApplication name="Remove duplicate preferences."
                                uuid="998581179-1066210885127-24499883-72-
185-21-130"/>
        <IUApplication name="StructuredAnnotationSet column change
- 7.0"
                                uuid="124235112-1054651145175-5897553-105-
9-253-132"/>
        <IUApplication name="Set default missingDependents and
placeholder flags for EPMDocument"
                                uuid="693648285-1048781474702-3376105-70-52-
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        <IUApplication name="Migrate RolePrincipalMap"
                                uuid="585751939-1048535893369-12170552-191-
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        <IUApplication name="Handle the unintended columns (1)."
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        <IUApplication name="EffChangeAudit Reference OID
Initialization"
                                uuid="061381370-1048798043458-5897553-132-
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        <IUApplication name="ObjectSubscription column changes -
7.0"
                                uuid="848808965-1057941380531-16795115-167-
8-253-132"/>
        <IUApplication name="Clean up orphaned ControlBranch
objects when migrating to X-05"
                                uuid="680076802-1103296430905-31817359-130-
10-253-132"/>
        <IUApplication name="Bulk Items Migrator"
                                uuid="313980888-1084862668703-22730182-205-
184-21-130"/>
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content to ImportedBookmark"
                                uuid="227757146-1092244837305-22266741-182-
8-253-132"/>
        <IUApplication name="Migrate WfBookmark Columns"
                                uuid="764015648-1093371762262-5924809-125-
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        <IUApplication name="Delete Notebooks with No Subject"
                                uuid="212306141-1093443655638-30931963-182-
8-253-132"/>
        <IUApplication name="NotebookFolder Uniqueness Constraint"
                                uuid="599272371-1092761075767-30931963-182-
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        <IUApplication name="Migration for unfolding WfProcess
object."
                                uuid="835935414-1091746787609-828528-202-11-
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        <IUApplication name="Create CAD Parameter Name to IBA
mappings for Pro/E authored EPMDocument, EPMMemberLink and
EPMReferenceLink."
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185-21-130"/>
        <IUApplication name="EPMDependencyLink Component Id update
- R8.0"
                                uuid="295034874-1107455242635-14688457-76-
81-253-132"/>
        <IUApplication name="EPMDocumentMaster cadName update for
8.0"
                                uuid="849208333-1089733541472-7987972-67-81-
253-132"/>
        <IUApplication name="EPMDocument Primary and Secondary
Content Migrator for 8.0"
                                uuid="480124952-1089829108388-7987972-101-
1-168-192"/>
        <IUApplication name="Uppercase EPMDocument number 8.0"
                                uuid="915560047-1094846878755-27334345-105-
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        <IUApplication name="Create EPMUpdateCounter X05"
                                uuid="746204813-1083784015001-6393126-67-81-
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        <IUApplication name="EPMContainedIn Link Remover for
ProIntralinkGateway - R8.0"
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81-253-132"/>
        <IUApplication name="Migrate LifeCycle transition (1)."
                                uuid="597199756-1085590718908-3346521-129-
8-253-132"/>
        <IUApplication name="Copy data from old column replication
to a new column wtreplication for REPLICATEDITEM table."
                                uuid="140591898-1089731945460-5924809-188-
8-253-132"/>
        <IUApplication name="Migrate DiscussionPosting Columns"
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8-253-132"/>
        <IUApplication name="Merge and Delete Forums"
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8-253-132"/>
        <IUApplication name="Deletes all SemanticKey entries in
preparation for IU 346981183-1086113274778-33320514-81-8-253-132."
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253-132"/>
        <IUApplication name="Executing Types" uuid="835900569-
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        <IUApplication name="ECAD ContainedIn Link Remover -
R8.0.20.0"
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82-253-132"/>
        <IUApplication name="Container Reference Fix for Notebook
and Forum Objects"
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        <IUApplication name="Fix RolePrincipalMap Oids 6.2.6 to
8.0"

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                                uuid="136343656-1098449383109-9818046-217-
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adHocStringIdentifier, oneOffVersionId, sessionOwner,&#xA;
versionId, viewId, and wipState attributes."
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8-253-132"/>
        <IUApplication name="Basic LifeCycleTemplate Migrator"
                                uuid="556502243-1092260585080-22266741-200-
10-253-132"/>
        <IUApplication name="EPMDocument BoxExtents column change
- 6.2 to 8.0"
                                uuid="617640897-1118403949117-12245160-105-
1-168-192"/>
        <IUApplication name="Migrate historical iteration columns
to match latest iteration."
                                uuid="458135864-1103651010278-31817359-130-
10-253-132"/>
        <IUApplication name="IBA flag for EPMDependencyLinks -
R8.0"
                                uuid="135290258-1105555138090-14688457-76-
81-253-132"/>
        <IUApplication name="Populate Subject Reference for
ImportedBookmark and DiscussionPosting"
                                uuid="113282919-1092700910110-15091334-163-
8-253-132"/>
        <IUApplication name="Container Teams RefreshGroups Migrator
- 8.0"
                                uuid="003057337-1094155605241-24763620-170-
8-253-132"/>
        <IUApplication name="DiscussionTopic Uniqueness
Constraint"
                                uuid="666957529-1092761065517-30931963-182-
8-253-132"/>
        <IUApplication name="Fix cabinet table's classnameA2A2
entries."
                                uuid="903160839-1105397803491-3794357-163-
8-253-132"/>
        <IUApplication name="Delete duplicated PhaseSuccession"
                                uuid="919566811-1100205860642-14721926-129-
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        <IUApplication name="ApplicationData streamId field
population."
                                uuid="313495381-1095366212260-15091334-199-
8-253-132"/>
        <IUApplication name="EPM Modeled Types Migrator"
                                uuid="122438517-1137165404174-23886295-179-
41-253-132"/>
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phaseType="com.ptc.windchill.upgrade.history.UpgradePhaseType.VALI
DATION_CHECKPOINT_1">
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        <IUApplication name="Migrator verifying all objects
contained"
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phaseType="com.ptc.windchill.upgrade.history.UpgradePhaseType.ADD_
CONSTRAINTS"/>
        <UpgradePhase complete="yes" id="7"

phaseType="com.ptc.windchill.upgrade.history.UpgradePhaseType.EXEC
UTE_SERVER_MIGRATORS_1">
        <IUApplication name="Creation of all containers (Apply LDAP
Updates) "
                                uuid="721259460-1046251076222-12960684-72-
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        <IUApplication name="**PDMLink** Migrate Reference Document
Type Definition"
                                uuid="923767213-1073412067180-7726332-167-
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        <IUApplication name="**PDMLink** Templateable Migrator for
PDMLink"
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        <IUApplication name="**PDMLink** MigrateTypeBasedRules"
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        <IUApplication name="**PDMLink** Migrate LifeCycle and Team
Templates"
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        <IUApplication name="**PDMLink** Migrate Groups in LDAP"
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        <IUApplication name="I2W 6.2 -7.0 Migration"
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96-253-132"/>
        <IUApplication name="SoftType EPM Objects"
                                uuid="643280662-1082010641469-7122710-205-
184-21-130"/>
        <IUApplication name="Migrate LifeCycle transition (2).".
                                uuid="219886318-1086281459993-15081425-129-
8-253-132"/>
        <IUApplication name="Migrate Series column for Mastered
objects"
                                uuid="117097229-1089988409090-15091334-156-
10-253-132"/>
        <IUApplication name="Basic LifeCycleTemplate Migrator"
                                uuid="823441338-1088449427173-22730182-221-
8-253-132"/>
        <IUApplication name="Sets each SemanticKey's reference to
the UniquelyIdentified object it represents."
                                uuid="346981183-1086113274778-33320514-81-
8-253-132"/>
        <IUApplication name="**PDMLink** Migrate Container Teams"

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                                uuid="235078679-1062978843728-19621457-167-
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Reports."
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        <IUApplication name="Migrator for Promotion Request"
                                uuid="974612960-1107987583215-18725445-137-
8-253-132"/>
        <IUApplication name="EPM Family Table Model Upgrade from R7
to R8"
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68-253-132"/>
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7.0 data"
                                uuid="705901729-1065820974387-11918020-162-
10-253-132"/>
        <IUApplication name="**PDMLink** Container Templates for
PDMLink R7.0."
                                uuid="181073816-1058345548875-2654289-72-
185-21-130"/>
        <IUApplication name="***PDMLink*** 8.0 Incremental Data
Loader"
                                uuid="417582880-1097682710987-26542488-168-
9-253-132"/>
        <IUApplication name="Load access rules from
ProjectLink.xml"
                                uuid="030636206-1059598387303-2654289-191-
10-253-132"/>
        <IUApplication name="7.0.0 Preference Entry"
                                uuid="828844587-1050317960486-7206987-211-
185-21-130"/>
        <IUApplication name="Loading Notebook Permissions for 6.0
and above..."
                                uuid="723695932-1091208144458-14688457-211-
10-253-132"/>
        <IUApplication name="Foundation TypeBasedRules at Site
level"
                                uuid="063086906-1056388485818-2654289-112-
8-253-132"/>
        <IUApplication name="Load PrefEntrys and AccessRules for
R8.0"
                                uuid="585821606-1097678718168-30533424-156-
10-253-132"/>
        <IUApplication name="8.0 Load Data for Custom Modeled
Support"
                                uuid="006520755-1112825244573-12929374-173-
8-253-132"/>

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        <IUApplication name="Loading CriterionDef/RelationshipDef
Objects 8.0 and above..."
                                uuid="781190189-1106918246468-14688457-45-
169-21-130"/>
        <IUApplication name="Load OOTB authoring app versions for
R8.0"
                                uuid="415691535-1095262539366-2569862-75-81-
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phaseType="com.ptc.windchill.upgrade.history.UpgradePhaseType.EXEC
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files to the new TypeInstance format"
                                uuid="477533040-1042739320825-3896421-105-
9-253-132"/>
        <IUApplication name="System and User domain comparison"
                                uuid="516569918-1073080953137-7866553-48-8-
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        <IUApplication name="FederatedLink migrator"
                                uuid="271998937-1043267923522-4781816-126-
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        <IUApplication name="Finalize organization access"
                                uuid="019361117-1069265330840-9734221-48-8-
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        <IUApplication name="**PDMLink**
MigrateContainerTemplateContent"
                                uuid="732470675-1077657876325-30931963-167-
9-253-132"/>
        <IUApplication name="**PDMLink**
MigrateAccessControlRules"
                                uuid="361881020-1072895880122-7726332-167-
9-253-132"/>
        <IUApplication name="Load product templates"
                                uuid="134993670-1108490099449-18064701-129-
8-253-132"/>
        <IUApplication name="Container Manager Ad-Hoc Acl Migrator"
                                uuid="556781729-1091732037091-5924809-21-0-
0-10"/>
        <IUApplication name="Dynamic Due Date OOTB Workflow
Template Migrator"
                                uuid="707236517-1123249127727-4171180-160-
10-253-132"/>
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</Installation>
<Installation complete="yes" id="7" timestamp="2007.08.15
17:23:30"
    timestampFormat="yyyy.MM.dd HH:mm:ss">
    <Assembly releaseId="wsp.8.0.30.14"/>
    <Assembly releaseId="ie.8.0.30.14"/>
    <Assembly releaseId="pdml.8.0.30.14"/>
    <Assembly releaseId="infomodeler.8.0.30.14"/>
    <Assembly releaseId="wnc.8.0.30.14"/>
</Installation>
<Installation complete="yes" id="8" timestamp="2007.08.15
20:16:26"
    timestampFormat="yyyy.MM.dd HH:mm:ss">
    <Assembly releaseId="ie.9.0.00.113"/>
    <Assembly releaseId="suma.9.0.00.113"/>
    <Assembly releaseId="pdml.9.0.00.113"/>
    <Assembly releaseId="infomodeler.9.0.00.113"/>
    <Assembly releaseId="wnc.9.0.00.113"/>
    <UpgradePhase complete="yes" id="14"

phaseType="com.ptc.windchill.upgrade.history.UpgradePhaseType.VERI
FY_PRE_CONDITIONS">
    <IUApplication name="Verify All Container Templates are in
Checked-In State"
        uuid="183461018-1180645089225-7802158-21-11-
253-132"/>
    <IUApplication name="Verify whether the target
configuration is pointing to the right source LDAP"
        uuid="548466726-1180970929571-18581223-137-
10-253-132"/>
    <IUApplication name="Validate Family Table Checkin State
and check For Orphaned Family Table Precondition."
        uuid="110305561-1161275773505-8304354-200-
40-253-132"/>
    <IUApplication name="Verify Pro/Intralink Migration has
completed"

```

```

                                uuid="446751951-1184684790450-28349544-31-
11-253-132"/>
        <IUApplication name="Verify Object's in Recycle Bin"
                                uuid="321552632-1180551607111-18581223-137-
10-253-132"/>
        <IUApplication name="SQLServer Index Validator Incremental
Update"
                                uuid="399537193-1153251795672-3273383-100-
11-253-132"/>
        <IUApplication name="Verify Upgrade Option Property for
Collaboration Template Migrator value is set"
                                uuid="183491418-1180645089225-7802158-21-11-
253-132"/>
        </UpgradePhase>
        <UpgradePhase complete="yes" id="15"

phaseType="com.ptc.windchill.upgrade.history.UpgradePhaseType.COMP
ARE_SCHEMA"/>
        <UpgradePhase complete="yes" id="16"

phaseType="com.ptc.windchill.upgrade.history.UpgradePhaseType.VERI
FY_TABLESPACE"/>
        <UpgradePhase complete="yes" id="17"

phaseType="com.ptc.windchill.upgrade.history.UpgradePhaseType.UPGR
ADE_SCHEMA"/>
        <UpgradePhase complete="yes" id="18"

phaseType="com.ptc.windchill.upgrade.history.UpgradePhaseType.EXEC
UTE_STANDALONE_MIGRATORS">
        <IUApplication name="MigrateCollectionCriteria"
                                uuid="076035612-1141638016796-28637909-251-
184-21-130"/>
        <IUApplication name="Migrate Project's with Apostrophe in
the project name"
                                uuid="300281565-1168468031747-25252664-207-
10-253-132"/>
        <IUApplication name="Migrate Internal Groups to Database
for X-10."
                                uuid="218541261-1148048971760-23690087-207-
10-253-132"/>
        <IUApplication name="Create
SavedQueryPrincipleLinks,delete group rows in savedquery"
                                uuid="256048012-1173696638258-32233307-1-
183-21-130"/>
        <IUApplication
name="CopyCreatorInformationForDataMaintRecordSubTypes"
                                uuid="152668014-1178282543005-32233307-1-
183-21-130"/>
        <IUApplication name="Autopopulate creators group"
                                uuid="099550486-1170352982643-16496587-131-
9-253-132"/>
        <IUApplication name="MigrateCriterionDefs"
                                uuid="552002187-1141728889609-7841785-251-
184-21-130"/>
        <IUApplication name="Moves value of changeClassname into
wtKey."

```

```

            uuid="538214736-1162573757591-14900151-81-
8-253-132"/>
        <IUApplication name="Merge and Delete Forums"
            uuid="896652724-1180684244490-1623405-96-
183-21-130"/>
        <IUApplication name="Migrate Content to Notebook"
            uuid="516192650-1172498754445-21202114-145-
182-21-130"/>
        <IUApplication name="Migrate RecentUpdate Table Duplicates"
            uuid="733612260-1163545550250-9031454-141-
11-253-132"/>
        <IUApplication name="EPMDocument Primary Content Category
Migrator"
            uuid="463152174-1165256982778-17444196-29-
81-253-132"/>
        <IUApplication name="SecheduleItem Migration from R8.0 to
R9.0"
            uuid="580226940-1160378330174-20698484-20-
185-21-130"/>
        <IUApplication name="Migrate ReportedAgainst"
            uuid="171797274-1150377067889-1537969-223-
8-253-132"/>
        <IUApplication name="Part consolidation" uuid="377131949-
1137103145174-3556929-81-8-253-132"/>
        <IUApplication name="MigrateInputValues"
            uuid="470285038-1141638029625-28637909-251-
184-21-130"/>
        <IUApplication name="Remove the entire application
container and container team structure including all the internal
groups from LDAP."
            uuid="620989781-1163706460232-13640204-207-
10-253-132"/>
        <IUApplication name="SubFolderLinkConstraint migrator for
SQL Server Indexing"
            uuid="524946218-1174890504678-12774933-1-0-
0-10"/>
        <IUApplication name="EPMBuildHistory/EPMBuildLinksRule
migrator X10"
            uuid="635194286-1136370523809-25292276-188-
184-21-130"/>
        <IUApplication name="Updates references to
WTPProduct/WTSerialNumberedPart to WTPart and
WTPProductMaster/WTSerialNumberedPartMaster to WTPartMaster"
            uuid="252566851-1152647177526-16749745-81-
8-253-132"/>
        <IUApplication name="Populate new columns in the change
item tables in 9.0"
            uuid="026317595-1133460249795-17010151-191-
10-253-132"/>
        <IUApplication name="AutoCAD CAD Document upgrade for 9.0"
            uuid="252227530-1146063925161-21101238-122-
83-253-132"/>
        <IUApplication name="EPMReferenceLink ReferenceType update
for 9.0"
            uuid="108142868-1141330681778-8452719-212-
40-253-132"/>
        <IUApplication name="Drawing Migrator for 9.0"

```

```

                                uuid="132937735-1143489500452-23505432-122-
83-253-132"/>
        <IUApplication name="EPMCadNameSpace Upgrade R9"
                                uuid="729013438-1165520331757-17444196-29-
81-253-132"/>
        <IUApplication name="EPMAuthoringApp Version for 9.0"
                                uuid="938593886-1139253062491-28652556-122-
83-253-132"/>
        <IUApplication name="DerivedFrom Column Migrator"
                                uuid="989910709-1141939987538-18581223-175-
10-253-132"/>
        <IUApplication name="Remove duplicate
IteratedFolderMemberLinks."
                                uuid="480894862-1172599039619-11918020-220-
8-253-132"/>
        <IUApplication name="Package Content Migrator for Third
Party WGMs authored CAD Document and Family Table"
                                uuid="310869426-1179771055281-5912867-81-88-
253-132"/>
        <IUApplication name="Migrate remoteobjectid values from
RemoteObjectInfo table into the new table RemoteOBjectId"
                                uuid="179094453-1156975111126-18403721-207-
10-253-132"/>
        <IUApplication name="Change AccessPolicyRule and WTAclEntry
references from ObjectSubscription to NotificationSubscription."
                                uuid="306525110-1174942426540-19948346-119-
9-253-132"/>
        <IUApplication name="Delete Notebooks with No Subject"
                                uuid="954171618-1180938030952-1623405-96-
183-21-130"/>
        <IUApplication name="Preference Migrator"
                                uuid="810957849-1141162718119-26174005-156-
8-253-132"/>
        <IUApplication name="Default ConfigSpec View Preference
Value Migrator"
                                uuid="353798020-1155767641744-10822310-157-
9-253-132"/>
        <IUApplication name="Migrate application container's team
references for shared teams project."
                                uuid="131220604-1160590169654-31427481-231-
8-253-132"/>
        <IUApplication name="EPMDocument content tagging syntax"
                                uuid="174189639-1168026191355-16437003-29-
40-253-132"/>
        <IUApplication name="Arbortext OwnerApplication Migrator
R9"
                                uuid="009573684-1180446618162-10365435-184-
40-253-132"/>
        <IUApplication name="pseudoType default value update"
                                uuid="301410363-1146084889140-18306724-216-
8-253-132"/>
        <IUApplication name="Migrate ManagedBaseline for X-10"
                                uuid="776460703-1141678831454-4899350-132-
9-253-132"/>
        <IUApplication name="Change Notice Complexity Standalone
Migrator"

```

```

            uuid="015785974-1133977448217-23376028-165-
8-253-132"/>
        <IUApplication name="Migration of EPMDocument for
Templateable EPMDocument and EPMWorkspace for transparent
EPMWorkspace"
            uuid="349060817-1164026012190-17103608-23-
182-21-130"/>
        <IUApplication name="EPMDocument Derived and EPMMemberLink
Annotated Migrator"
            uuid="186838357-1150970736523-27475272-199-
184-21-130"/>
        <IUApplication name="Populate Parent Folder on Foldered
Objects"
            uuid="586399150-1169102163706-9031454-160-
8-253-132"/>
        <IUApplication name="Unshare WTPProductConfiguration,
WTPProductInstance2 and ManagedBaseline objects."
            uuid="949573410-1179168124979-20003078-219-
10-253-132"/>
        <IUApplication name="Family Table Migration R8.0 to R9.0 -
First step"
            uuid="014032129-1140193017767-32961174-184-
40-253-132"/>
        <IUApplication name="Set new Adhoc permissions values."
            uuid="706369578-1142321549756-29992592-180-
184-21-130"/>
        <IUApplication name="ECAD Schematic Upgrade R9"
            uuid="716112943-1163544587482-10580099-222-
40-253-132"/>
        <IUApplication name="New Access Permission Migrator"
            uuid="115370798-1142433542939-19475750-158-
10-253-132"/>
        <IUApplication name="UIACCESS Table's ISRENDER Column
Migrator"
            uuid="311563247-1143651189208-21866740-139-
10-253-132"/>
        <IUApplication name="ControlBranch sessionOwner/viewId
migrator"
            uuid="593625454-1176844952198-9690924-81-8-
253-132"/>
        <IUApplication name="Migrate rule table to support WTPart
and WTPProduct consolidation functionality"
            uuid="599955561-1144798770908-13725633-213-
8-253-132"/>
        <IUApplication name="DerivedImage migrator"
            uuid="412605403-1147206822427-19509473-166-
9-253-132"/>
        <IUApplication name="Update the links of change items in
9.0"
            uuid="067126857-1179238613951-18615648-106-
11-253-132"/>
        <IUApplication name="Upgrade UWGM IBA Parameter Mapping
9.0"
            uuid="554502941-1180002239818-25582376-23-
182-21-130"/>
        <IUApplication name="Populate column genericType for
classes that are descendents of wt.part.WTPartMaster"

```

```

                                uuid="365243835-1131121217535-22949069-180-
88-253-132"/>
        <IUApplication name="CreateCollectionOpUsesRelMapLinks"
                                uuid="802640768-1169642052086-33208902-113-
184-21-130"/>
        <IUApplication name="Properties to Preference Migrator"
                                uuid="024964912-1155671019311-26117441-157-
9-253-132"/>
        <IUApplication name="Remove CLEANUPACCESSEENTRY_TRIGGER
from database"
                                uuid="862338932-1156968890707-24595355-147-
8-253-132"/>
        <IUApplication name="Migrate ObjectSubscription table to
NotificationSubscription table"
                                uuid="377850602-1152550814079-9472129-172-
11-253-132"/>
        <IUApplication name="ControlBranch cyclical self
predecessor cleanser."
                                uuid="110663171-1162398193292-17131806-81-
8-253-132"/>
        <IUApplication name="Cleanup groups that are assigned
invalid domains."
                                uuid="074734911-1168531806321-25252664-207-
10-253-132"/>
        </UpgradePhase>
        <UpgradePhase complete="yes" id="19"

phaseType="com.ptc.windchill.upgrade.history.UpgradePhaseType.VALI
DATION_CHECKPOINT_1"/>
        <UpgradePhase complete="yes" id="20"

phaseType="com.ptc.windchill.upgrade.history.UpgradePhaseType.ADD_
CONSTRAINTS"/>
        <UpgradePhase complete="yes" id="21"

phaseType="com.ptc.windchill.upgrade.history.UpgradePhaseType.EXEC
UTE_SERVER_MIGRATORS_1">
        <IUApplication name="Add RoleSetup permissions to the
workflow templates"
                                uuid="984507360-1172553312264-10044878-7-
182-21-130"/>
        <IUApplication name="Migrate Wf Execution Object
permissions"
                                uuid="197388418-1145636839398-29992592-180-
184-21-130"/>
        <IUApplication name="Upgrade Parameter Mapping 8.0"
                                uuid="263269920-1171004572984-30832493-23-
182-21-130"/>
        <IUApplication name="WTPProduct/WTSerialNumberedPart type
consolidator."
                                uuid="722589195-1176385990081-1744155-81-8-
253-132"/>
        <IUApplication name="Family Table Migration R8.0 to R9.0 -
Step 2"
                                uuid="817138073-1141832908204-23505432-122-
83-253-132"/>
        <IUApplication name="SeriesSortValue table populator."

```



```

            uuid="054281248-1158175994299-17975110-81-
8-253-132"/>
        <IUApplication name="Prepare For Rename (CADName) Migrator"
            uuid="704361645-1174582521033-6586390-79-83-
253-132"/>
        <IUApplication name="CATIA V5 Family Table Migration"
            uuid="924498988-1147805033994-21101238-100-
40-253-132"/>
        <IUApplication name="Family Table Secondary Content
Migrator"
            uuid="102750798-1168458792996-19543842-6-81-
253-132"/>
        <IUApplication name="External Reference AsStoredChildName
Migrator R9"
            uuid="457109284-1181853376286-10365435-117-
40-253-132"/>
        <IUApplication name="Populate column componentId for
classes that are descendents of wt.part.WTPartUsageLink"
            uuid="969522627-1158005138650-14779369-180-
88-253-132"/>
        <IUApplication name="Load Cognos Report objects for
Windchill Foundation"
            uuid="635610444-1178218402193-31335791-61-
11-253-132"/>
        <IUApplication name="Control Branch Revision Cleanser"
            uuid="545304443-1176229330578-3434740-167-
10-253-132"/>
        <IUApplication name="Table View Upgrade from Release 8.0 to
9.0"
            uuid="222830919-1170867795084-29525730-146-
89-253-132"/>
        <IUApplication name="Global Tab Hide Conversion to Profiles
Migrator"
            uuid="678819815-1161175671268-26953436-149-
9-253-132"/>
        <IUApplication name="Add instance extensions migrator"
            uuid="823978623-1176820011998-1397168-50-40-
253-132"/>
        <IUApplication name="Upgrade references to
WTProduct/WTSerialNumberedPart for the rules table"
            uuid="664572699-1184766954579-12366398-119-
9-253-132"/>
        <IUApplication name="Change Notice Complexity Server
&#34;A&#34; Migrator"
            uuid="063788269-1133897038764-23376028-165-
8-253-132"/>
        <IUApplication name="Migrate Process Overview Image"
            uuid="348654999-1181197643377-9182681-145-
182-21-130"/>
        <IUApplication name="ProductView ED to PVS Migrator"
            uuid="898047493-1152727005895-3273383-39-11-
253-132"/>
        <IUApplication name="Update Workitem for Change Objects to
be versioned"
            uuid="945435074-1178142156697-6867819-195-
9-253-132"/>
        <IUApplication name="View sortId populator."

```

```

                                uuid="052492507-1161286183248-25068634-81-
8-253-132"/>
        <IUApplication name="Create add hoc acl rule that grants
READ permission for the teamMembers Group."
                                uuid="601781033-1163379165379-13640204-207-
10-253-132"/>
        <IUApplication name="Load Data for Part Structure View
Hierarchy"
                                uuid="851328849-1171044683660-31614731-216-
8-253-132"/>
        <IUApplication name="Remove ad hoc acl rules added to
working copies"
                                uuid="798493673-1181150231352-21048949-103-
8-253-132"/>
        <IUApplication name="Upgrade references to
WTPProduct/WTSerialNumberedPart for access, index, and notification
policy rules"
                                uuid="581922741-1182376016405-12366398-119-
9-253-132"/>
        <IUApplication name="Migrate typebasedrule table to support
UI override Rules functionality"
                                uuid="795490722-1162403768347-6146452-87-11-
253-132"/>
        <IUApplication name="Converts IteratedPartialBaselines to
&#34;regular&#34; baselines by replacing the delta storage
mechanism with duplicated links."
                                uuid="798362804-1166655680342-18818021-81-
8-253-132"/>
        <IUApplication name="Upgrade For Saved Searches"
                                uuid="165830938-1147844251485-22700073-96-
184-21-130"/>
        <IUApplication name="Reference Designator Dashes Migrator"
                                uuid="741730507-1158006634847-162178-39-11-
253-132"/>
        <IUApplication name="Migrator to create Note SoftType"
                                uuid="208530843-1165472955476-20634710-75-
182-21-130"/>
        <IUApplication name="Load Cognos Report objects for
Windchill PDMLink"
                                uuid="813781616-1178219035474-31335791-61-
11-253-132"/>
        <IUApplication name="Add Object Init rule for
com.ptc.wpcfg.doc.VariantSpec object."
                                uuid="565521264-1160421568894-26953436-180-
88-253-132"/>
        <IUApplication name="CreateControlBranchesForIBAs"
                                uuid="012129232-1173803605357-5761618-213-
10-253-132"/>
        <IUApplication name="CreateCriterionDefs"
                                uuid="626906968-1141638036062-28637909-251-
184-21-130"/>
        </UpgradePhase>
        <UpgradePhase complete="yes" id="22"

phaseType="com.ptc.windchill.upgrade.history.UpgradePhaseType.VALI
DATION_CHECKPOINT_2"/>
        <UpgradePhase complete="yes" id="23"

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```

phaseType="com.ptc.windchill.upgrade.history.UpgradePhaseType.LOAD
_DATA">
  <IUApplication name="Load PDMLink 9.0 Workflows and
  Lifecycles"
                                uuid="066770778-1183135717522-20371928-195-
9-253-132"/>
    <IUApplication name="PDMLink Load Change Management Reports
9.0"
                                uuid="912358617-1176238675653-11536733-106-
11-253-132"/>
      <IUApplication name="**PDMLink** Load additional Access
Control Rules for 9.0"
                                uuid="795504006-1177016423438-7802158-126-
8-253-132"/>
        <IUApplication name="Load workflow authors"
                                uuid="949255884-1183103186190-21375057-133-
184-21-130"/>
          <IUApplication name="PDMLink Load Data for WTVariance 9.0"
                                uuid="239757691-1176222497387-11536733-106-
11-253-132"/>
            <IUApplication name="Part Management 9.0 Multi Level BOM
Report using WBR"
                                uuid="948028808-1179171823407-9688764-84-11-
253-132"/>
              <IUApplication name="DataFormat Migrator&#x9;from 8.0 to
9.0"
                                uuid="900784553-1164363234612-19736127-20-
185-21-130"/>
                <IUApplication name="Load OOTB authoring app versions for
R8.0 to R9.0"
                                uuid="419938855-1141425303539-26530674-242-
40-253-132"/>
                  <IUApplication name="Loading permissions for Report objects
(new in 9.0)"
                                uuid="362986705-1176231725797-1583057-112-
9-253-132"/>
                    <IUApplication name="Load additional Access Control Rules
for 9.0"
                                uuid="036030678-1177533953389-7802158-126-
8-253-132"/>
                      <IUApplication name="9.0 Load Data for the Preference
Service"
                                uuid="169108403-1165252369292-14800362-123-
8-253-132"/>
                        <IUApplication name="**PDMLink** Load Data for the
Preference Service 9.0"
                                uuid="790024726-1165337228434-14800362-123-
8-253-132"/>
                          <IUApplication name="Options and Variants Preferences Load"
                                uuid="051994447-1179339208058-23994289-92-
69-253-132"/>
                            <IUApplication name="Load Default Shared Team Template"
                                uuid="467149347-1184010312155-23994289-231-
8-253-132"/>
                              <IUApplication name="Load Taskform Templates"

```

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                                uuid="295032346-1173097596031-5122060-145-
182-21-130"/>
        <IUApplication name="Object Initialization Rules for
EPMFamilyTable R9"
                                uuid="810853884-1184004723128-10365435-79-
83-253-132"/>
        <IUApplication name="Load Replication Managers"
                                uuid="631088744-1180093140037-28606871-113-
182-21-130"/>
        <IUApplication name="Load OOTB Role Based UI Profiles"
                                uuid="021518812-1181668505934-28814882-80-
8-253-132"/>
        </UpgradePhase>
        <UpgradePhase complete="yes" id="24"

phaseType="com.ptc.windchill.upgrade.history.UpgradePhaseType.UPDA
TE_TEMPLATES"/>
        <UpgradePhase complete="yes" id="25"

phaseType="com.ptc.windchill.upgrade.history.UpgradePhaseType.VALI
DATION_CHECKPOINT_3"/>
        <UpgradePhase complete="yes" id="26"

phaseType="com.ptc.windchill.upgrade.history.UpgradePhaseType.EXEC
UTE_SERVER_MIGRATORS_2">
        <IUApplication name="Migrate &#34;userLimit&#34;
preference to &#34;searchTableLimit&#34; preference"
                                uuid="077445183-1175080401474-2478770-251-
184-21-130"/>
        <IUApplication name="ReplicationMigrator"
                                uuid="210294256-1145859659171-28349544-192-
187-21-130"/>
        <IUApplication name="Update Annotation XML to reflect
WTProduct and WTSerIALIZEDPart Consolidation"
                                uuid="088485525-1167840254098-22885256-105-
11-253-132"/>
        </UpgradePhase>
        <UpgradePhase complete="yes" id="27"

phaseType="com.ptc.windchill.upgrade.history.UpgradePhaseType.VALI
DATION_CHECKPOINT_4"/>
        <UpgradePhase complete="yes" id="28"

phaseType="com.ptc.windchill.upgrade.history.UpgradePhaseType.QUEO
"/>
        </Installation>
</InstallAndUpgradeHistory>

```

Purging Audit Log Data

In 9.0 there is a new user interface for generating audit reports, and a new auditing table. Because there is a significant difference between the old and new audit table definition, there is no migration support for moving the pre-9.0 audit table data forward to the 9.0 audit table. Due to the redesign of the auditing feature, PTC does not support searching for pre-9.0 data with the new user interface. To see pre-9.0 data, the pre-9.0 user interface can be made available by adding a property to the wt.properties file. The property name is "wt.audit.EnableLegacyAuditUI." It is not listed in the properties.html file because it should only be used by sites that need access to their old audit records.

When the 9.0 audit feature is turned on, the pre-9.0 audit table will not be used. PTC recommends that sites back-up and purge the pre-9.0 audit table data to provide the best system performance. The Audit Log Purge Utility can purge outdated rows from the audit tables. This script will not create a backup of any kind, so PTC recommends that sites back up the data before running these scripts. The scripts are date-based and will simply remove all of the rows in the database that were created on or before the date passed in to the script.

Use the following steps to purge the audit logs:

1. Enter SQL*Plus for your Windchill instance.
2. Execute the following script:

```
<Windchill>\db\sql\PreAuditPurge.sql
```

When prompted, enter a date in the format MM/DD/YYYY. The script identifies the audit log entries prior to the date entered. These are the entries that will be deleted in the following step.

3. Run the following script:

```
<Windchill>\db\sql\AuditPurge.sql
```

When prompted, enter a date in the format MM/DD/YYYY. The audit log entries prior to that date are deleted. (Note: The script does not include a commit, allowing you to rollback in case an incorrect date was entered.)

G

Troubleshooting

This appendix describes issues that can arise during upgrade. It provides both information on the issue and how to resolve the problem.

Database Performance Issues Post-Upgrade

Windchill database upgrades are done in place rather than by importing source system data into a new database. Because the upgrade process has the potential to modify a large portion of the database to upgrade it to be compatible with the latest release, sites with large databases should be on the alert for performance degradation due to unoptimized data files (For example, row chaining, fragmentation). Such sites should consider scheduling a maintenance period shortly after a Windchill product upgrade to reorganize their database and improve performance.

Failure in Post-Upgrade for Creating Documents.

In all releases prior to 9.0, the security mechanism used for content transfers and content replication is hardware dependent. After upgrading a Windchill solution or moving the existing installation to new hardware, perform the following procedure:

1. Back up the SiteSecurity table:

For example, on Oracle enter the command :

```
exp userid=<userName>/<password>@<dbName> file=<outputFile>  
tables=(SiteSecurity)
```

2. Stop the Windchill solution.
3. If any non-out-of-the-box Windchill services are enabled, disable them. After this procedure is complete, they can be re-enabled.
4. Run the following commands in the Windchill database instance:

```
delete from sitesecurity;
update site set CLASSNAMEKEYA5=null;
update site set IDA3A5=0;
commit;
```

5. Restart the Windchill solution.
6. Generate the content replication security keys from the Site Administration dialog, as described in the Windchill's Administrators Guide.
7. If the Windchill setup includes replica sites, the newly generated key should be propagated to all of them.

Max Schedule Queues Exception

Problem

After the upgrade of the Windchill Solution, the MethodServer fails to startup and complaining "wt.queue.QueueException: Max ScheduleQueues Exceeded".

Also, while running the Upgrade Manager, some phases of the upgrade require the method server to be running. An error like the following displays in the Upgrade Manager:

```
java.io.IOException: MethodServer is not running, please check the MethodServer.log file
to find out what is the error and correct it
    at com.ptc.windchill.upgrade.util.MethodServerStarter.attemptToStartMethodServer(MethodServerStarter.java:283)
    at com.ptc.windchill.upgrade.tool.UpdateTemplatesState.attemptToStartMethodServerIfNeeded(UpdateTemplatesState.java:141)
    at com.ptc.windchill.upgrade.tool.UpdateTemplatesState.runThreadedWork(UpdateTemplatesState.java:141)
    at com.ptc.windchill.upgrade.tool.AbstractStateWithThreadedWork$1.run(AbstractStateWithThreadedWork.java:113)
```

Locate the MethodServer.log file in the <Windchill>/logs directory. The MethodServer.log file includes the following:

```
wt.util.WTException: wt.queue.QueueException: Max ScheduleQueues Exceeded
Nested exception is: wt.queue.QueueException: Max ScheduleQueues Exceeded
    at wt.queue.StandardQueueService.createQueueCheck(StandardQueueService.java:1264)
ERROR : wt.method.server.startup.services - Failure to start manager wt.notify.StandardNotificationManager
wt.services.ManagerException: Couldn't initialize Notification manager.
```

Solution

1. Using the xconfmanager, add the following property to site.xconf:

```
<Property name="wt.queue.max.scheduleQueues" overridable="true"
targetFile="codebase/wt.properties" value="50"/>
```

2. Save the site.xconf file.
3. Propagate using the following command from a windchill shell:

```
Xconfmanager -p from %WT_HOME%/bin
```


This property increases the number of schedule queues allowed on the system. It resolves the issue of max schedule queues exceeded. This is a property that resides in wt.properties.

IBA.Properties

The iba.properties file must be copied from the source system to the target system before starting the upgrade process for the current release. The MethodServerA migrators Upgrade Parameter Mapping 8.0 (IU 263269920) and Upgrade Parameter Mapping 7.0 (IU 524301738) fail during the upgrade and display a FileNotFoundException exception if the iba.properties file is not copied onto the target system. If you forget to copy the file before starting the upgrade, and the migrator fails during the upgrade with iba.properties FileNotFoundException exception, you can copy the iba.properties from the source system to the target and restart the Upgrade Manager.

CompareSchema UpgradeSchema Starts Over

The Compare Schema, Upgrade Schema and Add Constraints phases of the Upgrade Manager are responsible for upgrading the source database schema so that it is compatible with the target system. The Upgrade Manager (UM) does not mark these phases as complete until all the three phases have run successfully making appropriate schema changes and the modifications to the source database.

If the Upgrade Schema step fails, UM re-runs the Compare Schema step. If the Add Constraints step fails, UM re-runs the Compare Schema and the Upgrade Schema step, skipping the other phases before the Add Constraints.

Oracle Recycled Table Issue

Oracle 10g has a new feature called Recycle bin (like in Windows) so when objects are deleted, they exist in the database with a name BIN\$*<some characters>*, that oracle (or users) can reclaim that object in the same way you do on Windows.

Usually, during installation, this feature is disabled when the database is created. The upgrade can fail if there are objects in the recycle bin. If the migrator fails for IU 321552632, purge the recycle bin as described.

Use sqlplus as sysdba (log in as system user to the database) .

Execute the following sql commands:

- alter system set recyclebin=off;
- purge dba_recyclebin;
- purge recyclebin;

Pro/INTRALINK Gateway Migration

Pro/INTRALINK Gateway doesn't exist for the current release. If you have an EPMDocument owned by Pro/INTRALINK Gateway, the Pro/INTRALINK 3.x to PDMLink 8.0 data migrator tool should be installed on the 8.0 source and executed standalone before starting the upgrade process to 9.0. Pro/INTRALINK Data Migrator tool is used to move your Pro/INTRALINK 3.3 MOR 2 (or later) data to either Pro/INTRALINK 8.0 or PDMLink 8.0.

If the Verify Pro/INTRALINK Migration fails (IU 446751951), refer to Pro/INTRALINK 8.0 Data Migrator Administrator's Guide to run the Pro/INTRALINK Data Migrator tool on the source system and restart the upgrade process.

Properties

The following properties are used for controlling inactivity and overall timeout of the SQL*Plus sessions in the UpgradeSchema phase and in the AddConstraints phase.

Note: These property values need to be increased if the defaults do not work.

Properties for UpgradeSchema phase:

- wt.upgrade.upgradeSchema.inactivityTimeOut
- wt.upgrade.upgradeSchema.overallTimeOut

Properties for AddConstraints phase:

- wt.upgrade.addConstraints.inactivityTimeOut
- wt.upgrade.addConstraints.overallTimeOut

Note: All units are milliseconds and these properties need to be set in db.properties using xconfmanager.

The overall timeout defaults for both phases are 10 minutes (600000 milliseconds). Inactivity timeout defaults are 1 minute (60000 milliseconds).

Saved Search Queries in Upgraded System Report "Incorrect Where Clause Syntax"

Migrated search queries must have attributes with logical identifiers. This can be done from the attribute manager. This occurs when a saved search query contained a soft attribute without a logical identifier before the upgrade.

A "PartialResultException" Occurred When Executing BackgroundBlobRewriter

The value of the property `wt.pom.paging.snapshotQueryLimit` should be -1 during the upgrade. The value "-1" means no limit.

The Following Exception Is Displayed In The Upgrade-BackgroundBlobRewriter.log: "(wt.pom.pomResource/0) wt.pom.PersistenceException: A persistence error occurred."

The Following Exception Is Displayed In The Upgrade-BackgroundBlobRewriter.log:

```
(wt.pom.pomResource/0) wt.pom.PersistenceException: A persistence error occurred.
```

A system message follows:

```
Nested exception is: (wt.fc.fcResource/32)
wt.fc.ObjectNoLongerExistsException: Cannot restore
"wt.fc.PagingSession.359749866" because it no longer exists.
```

To resolve this issue, increase the value of the property `"wt.pom.paging.sessionCleanupTime"` in the `db.properties` file.

The UpdateContainerTemplates.html Report Displays a Warning

The following warning is displayed in the HTML report:

```
The Template with Name: templateName and Location:
wt.inf.container.ExchangeContainer:1 and Type:
wt.inf.container.OrgContainer has Null XML. This template will
not be updated.
```

This warning indicates that this particular template does not have any data - it is a blank template. Since it is blank, the upgrade cannot update this template. It will remain blank after the upgrade is complete. Some customers might create templates to be blank on purpose and others may want to go and update the template. This can be done after the upgrade is complete.

This warning is just informational; no action is required from the customer.

Setting the wt.inf.container.AddSharedTeamPolicyRulesToOrg Property

This property controls how the `OrgContainerAccessMigrator` behaves. If the property is set to false, then this migrator does nothing. If it is set to true, the following applies.

Description: This is a required property that can be set to "true" or "false", anything else will result in an exception. This controls whether or not access policy rules are created to allow shared team functionality. The rules include:

Application Container Creators (for example, Project Creator) READ permission for ContainerTeams in the organization's \system domain.

- This permission allows Container Creators to select shared teams when creating an application container. This will also allow the creators to view existing container teams in the org.

Shared Team Creator READ, DELETE permission for WTGroup in the organization's \system domain

- The read permission allows Shared Team Creators to view the membership of shared teams created by another user. The delete permission is necessary for deleting a shared team, specifically to delete many of the system groups related to the team.

Shared Team Creator READ, MODIFY, CREATE, DELETE permission for ContainerTeams in the organization's \system domain

- The create permission is required for creating new shared teams. The rest of the permissions are required to complete each of the respective tasks when the shared team was created by another user.

Loading Access Control Rules for UUID 036030678-1177533953389-7802158-126-8-253-132 Caused Failure

When upgrading your Windchill solution, a set of Access Control Rules is added to the Site-level domains. These rules are required for typical uses of Windchill.

If a site's existing Windchill installation already contains an Access Control Rule whose Domain, Type, Lifecycle State, and Principal match any of those loaded during upgrade, then the upgrade will fail. In this case, the easiest solution is for the user to remove the conflicting rule from the system, then continue the Upgrade process.

Access Control Rules may be viewed from the **Site>Utilities>Policy Manager** tool. Select the **Site** view, and navigate to the following domains. If any rules for the listed combinations of Domain, Type, State, and Principal are found, they should be deleted:

Domain Combination	Value
Domain Type State Principal	Root ("/") wt.notify.NotificationSubscription ALL Administrators
Domain Type State Principal	Root ("/") wt.notify.NotificationSubscription ALL OWNER
Domain Type State Principal	Root ("/") wt.notify.NotificationSubscription ALL ALL
Domain Type State Principal	Root ("/") wt.team.Team ALL OWNER
Domain Type State Principal	System ("/System") wt.rule.TypeBasedRule ALL ALL

Problems With wnc-wsp.sql Script

If you are applying a maintenance release to your target system, do not execute wnc-wsp.sql on the source database.

Glossary

Source Database

The database and LDAP instances that were used by your source installation.

Source Installation

Term referring to the Windchill solution installation to differentiate "installation" from the data stores prior to the upgrade. It differentiates the installed program from the configuration file. For example, you will upgrade from your source installation to your target installation.

Source LDAP Instance

See Source Database.

Source Release

See Source Installation.

Source System

See Source Installation.

Target Installation

Term referring to the Windchill solution installation to which you are upgrading. For example, you will upgrade from your source installation to your target installation.

Target Release

See Target Installation.

Target System

See Target Installation.

Test System

A single machine that contains a source installation and a target installation of all Windchill solutions a given site plans to upgrade.

