



Windchill Info*Engine® Installation and Configuration Guide

Windchill® 7.0

December 2003

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Change Record

This section details major changes applied to this book.

Table 1 Changes for Windchill 7.0

Change	Description
Section dividers	Added section dividers to separate information groups. For example, the Aphelion section is composed of multiple chapters and this group of chapters is preceded by an Aphelion section page.
Wireless	Wireless is not support for Windchill 7.0, the text was commented out using the Wireless conditional text.
Replaced PTC.Setup installation procedures with InstallAnywhere.	InstallAnywhere replaces PTC.Setup as the installation utility for the Windchill products.
Updated all Windchill property file edits to use xconfmanager utility.	xconfmanager is the new utility to manage the Windchill property files.

About This Guide

The *Windchill Info*Engine Installation and Configuration Guide* provides the instructions to the install Web browsers, Web servers, servlet engines, the Aphelion Directory, and Info*Engine.

This document assumes you have the following knowledge and skills:

- Knowledge of the existing system data structures at your site
- Knowledge of the Web architecture used at your site
- Knowledge of Java Server Page (JSP) capabilities
- Knowledge of World Wide Web browser operation
- UNIX system administration skills (if you are installing on a UNIX system)
- Windows system administration skills (if you are installing on a Windows system)

Read This First

The Read This First Windchill 7.0 provides information related to known problems, documentation omissions, and notes and cautions. A printed copy of the RTF is shipped with your product or, for your convenience, a version with the most up-to-date information is available online at:

<http://www.ptc.com/cs/doc/index.html>

This URL directs you to the PTC Online Support Web page for reference documents. For your document search criteria, select your product from the product drop-down list.

Related Documentation

After your installation is complete, read the following documents to learn more about Info*Engine:

*Windchill Info*Engine Administration and Implementation Guide*

*Info*Engine User's Guide*

You can install these guides on your system when you install Info*Engine or you can copy it from the Info*Engine CD.

Technical Support

Contact PTC Technical Support via the PTC Web site, phone, fax, or e-mail if you encounter problems using Windchill.

For complete details, refer to Contacting Technical Support in the *PTC Customer Service Guide* enclosed with your shipment. This guide can also be found under the Support Bulletins section of the PTC Web site at:

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

The PTC Web site also provides a search facility that allows you to locate Technical Support technical documentation of particular interest. To access this page, use the following link:

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You must have a Service Contract Number (SCN) before you can receive technical support. If you do not have an SCN, contact PTC License Management using the instructions found in your *PTC Customer Service Guide* under Contacting License Management.

Documentation for PTC Products

PTC provides documentation in the following forms:

- Help topics
- PDF books

To view and print PDF books, you must have the Adobe Acrobat Reader installed.

The Windchill installation documentation is included on the CD in the Docs directory. In addition, books updated after release (for example, to support a hardware platform certification) are available from the Reference Documents section of the PTC Web site at the following URL:

<http://www.ptc.com/cs/doc/reference/>

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`documentation@ptc.com`

Please include the name of the application and its release number with your comments. For online books, provide the book title.

Documentation Conventions

Info*Engine documentation uses the following conventions:

Convention	Item	Example
Bold	Names of elements in the user interface such as buttons, menu paths, and dialog box titles. Required elements and keywords or characters in syntax formats.	Click OK . Select File > Save . License File dialog box -outputFile <i><file_name></i>
<i>Italic</i>	Variable and user-defined elements in syntax formats. Angle brackets (< and >) enclose individual elements when <> does not conflict with the code.	create_<tablename>.sql <i>instance:dbuser:passwd</i>
Monospace	Examples Messages	http://localhost/Windchill/... Processing completed.
"Quotation marks"	Strings	"\codebase\infoengine\jsp"
<Product>	Represents a product installation directory (loadpoint). <i>Product</i> is replaced with the actual product name.	<Info*Engine> For additional clarification, a where clause may be included: Where <Info*Engine> is the directory where Info*Engine is installed.
	The CAUTION symbol indicates potentially unsafe situations which may result in minor injury, machine damage or downtime, or corruption or loss of software or data.	If your operating system is IRIX, you must install the Netscape Navigator 4.7 or 6.2 software that is included on the IRIX CD-ROM to avoid problems

Third-Party Products

Examples in this guide referencing third-party products are intended for demonstration purposes only. For additional information about third-party products, contact individual product vendors.

Code Examples

Some code examples in this guide have been reformatted for presentation purposes and, therefore, may contain hidden editing characters (such as tabs and end-of-line characters) and extraneous spaces. If you cut and paste code from this manual, check for these characters and remove them before attempting to use the example in your application.

I

General Information About Installing Info*Engine Section

1

Architectural Overview

This chapter provides an overview of the Info*Engine architecture.

Topic	Page
Identifying the Info*Engine Components	1-2
Identifying Basic Configurations	1-2
Interacting with Info*Engine.....	1-3
Managing the Execution of Info*Engine Tasks	1-8
Starting and Locating Info*Engine Components	1-13
Setting Up Connections Through Adapters.....	1-14

Identifying the Info*Engine Components

The following components make up the Info*Engine architecture:

- The *Info*Engine Servlet* provides an interface between the Web server and Info*Engine.
- The *Info*Engine Server* provides a mechanism for retrieving and manipulating the data that users or custom applications want to view or receive.
- The *Naming Service* is the software that supports the operation of Info*Engine components. In the Info*Engine Naming Service, you can identify the LDAP directory servers where entries for the network addresses of Info*Engine components and entries for configuration properties reside.
- The *Info*Engine Service Access Kit (SAK)* is an application program interface (API) that facilitates the development of Java applications, including JSP pages, that directly utilize the functions and features of Info*Engine. For example, high-level Info*Engine components such as the Info*Engine Servlet, the Info*Engine server, and the E-Mail Broker use the SAK to invoke tasks and individual webjects.
- The *native adapters* provide a direct interface between Info*Engine and information systems.
- The *non-native adapters* provide an indirect interface between Info*Engine and information systems. These adapters use a different protocol from the protocol used by Info*Engine and therefore cannot connect directly to Info*Engine.
- *Gateways* provide an interface between Info*Engine and non-native adapters.
- The *Info*Engine SOAP RPC Servlet* catches and processes Info*Engine SOAP requests that are made over the Web. SOAP (Simple Object Access Protocol) is a lightweight protocol that can be used by non-Java applications. By using this protocol, non-Java applications can send requests to execute Info*Engine code and return the output that is generated.
- The *E-Mail Broker* provides a process by which users can e-mail Info*Engine requests to a mailbox. Using the SAK, the messages in the mailbox are then passed on to the Info*Engine server for processing.

The remainder of the chapter describes the relationships among the components.

Identifying Basic Configurations

Info*Engine components can be used in many different software and hardware configurations to meet your business requirements for accessing, managing, and presenting data from many different information systems.

Setting up your Info*Engine environment can be accomplished by:

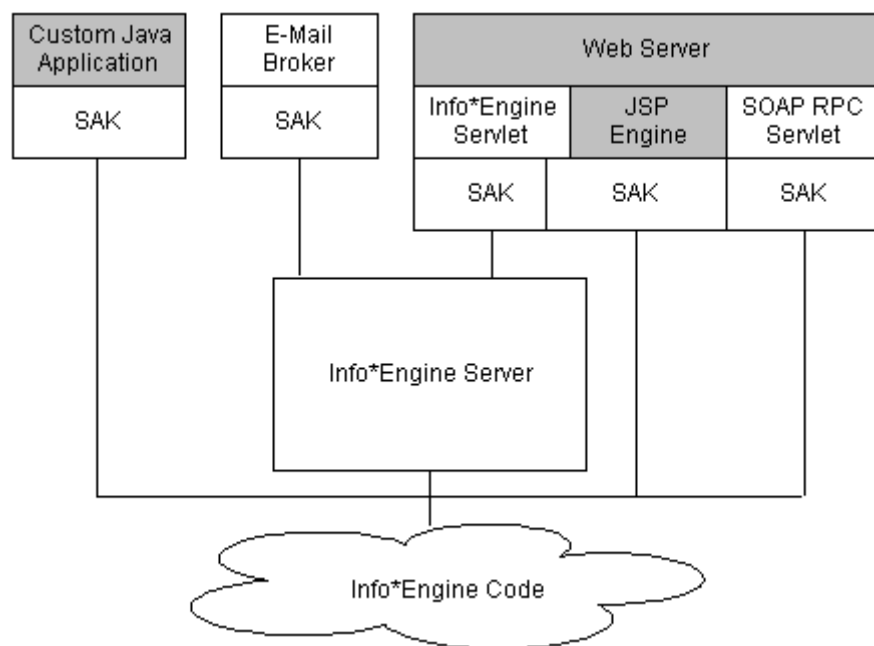
- Establishing interactions with Info*Engine.
- Managing the execution of Info*Engine tasks.
- Starting and managing Info*Engine components.
- Managing connections to the information systems where the data of interest resides.

Interacting with Info*Engine

Initiating an interaction with Info*Engine can be accomplished by using one or more of the following:

- Custom Java applications, including JavaServer Pages (JSP).
- Web servers that process Info*Engine requests. The requests can come from applications or Web browsers.
- E-mail requests that contain formatted messages sent to a predefined Info*Engine mailbox.
- Java Message Service (JMS) events and messages that queue Info*Engine tasks for execution.
- Custom non-Java applications that make requests to execute Info*Engine tasks. These applications use the Info*Engine SOAP RPC servlet.

The following diagram shows how Info*Engine components and other customer software components can interact to execute Info*Engine code.



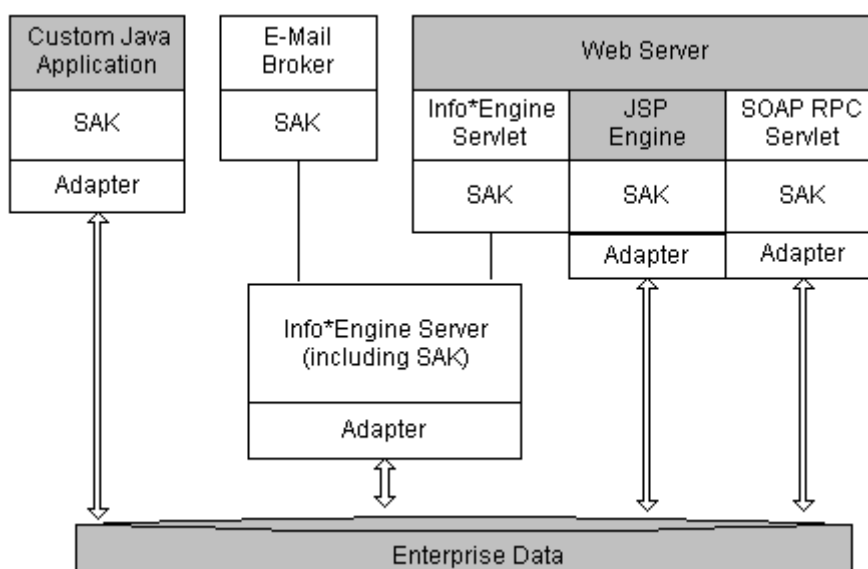
Info*Engine code consists of Java classes that are accessed through the Info*Engine API. The API is available through the SAK and externalizes predefined functions called webjects and tasks. The webjects and tasks can be easily instantiated and invoked as Java objects from a Java application or in a text file. Info*Engine text files can be accessed using requests or code within an application.

The following sections provide more detail about how to use the Info*Engine components with your software.

Using a Custom Java Application

By coding a custom application in Java, you can have quick and easy access to Info*Engine without the added complexity of a Web server. By using the API defined in the SAK, you can execute Info*Engine webjects, tasks, and other Info*Engine code in the Java Virtual Machine (JVM) where the application resides.

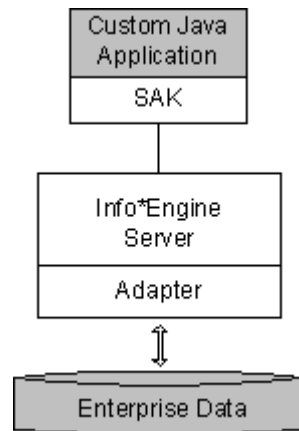
The following diagram shows the SAK and adapter classes being used in the application to access data in a remote database.



Within a Java application, you also have the flexibility of executing Info*Engine tasks that are maintained outside of the application. An Info*Engine task consists of a set of webjects and surrounding code that supports the processing of the webjects. These tasks can then be processed either in the JVM of any Info*Engine server or in the JVM of the application.

The following diagram shows the Info*Engine components that are used when an application executes a task in an Info*Engine server. In this case the application

requests that a task be executed in the server that accesses data in a remote database.



Using a Web Server to Process Info*Engine Requests

The installation process guides you through a procedure that deploys Info*Engine as a Web application. Going through the installation process sets up your Web server and its servlet engine to identify Info*Engine requests and pass those requests on to Info*Engine components for processing. After the installation is complete, your Info*Engine environment is set up so that Info*Engine requests to execute JSP and HTML pages coming from Web browsers are processed correctly.

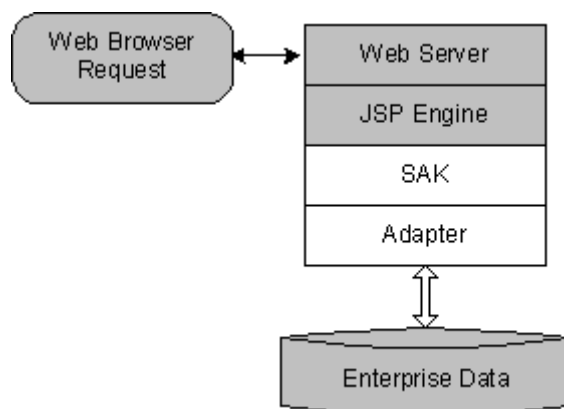
By doing some additional Info*Engine configuration steps, you can set up your Info*Engine environment to process requests from the following additional sources:

- If you configure the Info*Engine SOAP RPC servlet, Info*Engine SOAP requests can come from non-Java applications.

The steps required to configure Info*Engine so that it processes requests from these additional sources are described in the Configuration chapter of this guide.

Processing Web Browser Requests

The following diagram shows the relationships among the components that process Web browser requests for JSP pages.



This diagram shows the components that are used when the request specifies that Info*Engine execute a JSP page. By default, Info*Engine and Web server configuration specifies that JSP pages are processed in the JSP engine of the servlet engine installed on your Web server. The JSP engine creates an instance of the SAK, which is then used to execute the Info*Engine-specific code on the page. For example, if a user clicks a link or uses a URL in a browser window that serves as a JSP request for information from Info*Engine, the JSP engine and the SAK work together to manage the request.

The SAK processes the request and, as needed, connects to specialized Info*Engine adapters that communicate with external applications such as Oracle databases, PDM systems, various legacy systems, and ERP systems. After the requested information is obtained from the external applications, the process reverses itself and ultimately displays information in the user's browser window.

Web Browser Request Example

Assume that a user needs to compare the manufacturing bill of materials (MBOM) for an assembly with the engineering bill of materials (EBOM) for the same assembly. However, the as-designed EBOM exists on a Product Data Management (PDM) system and the as-built MBOM exists on an Enterprise Resource Planning (ERP) system.

Through Info*Engine, the information from these two disparate systems can be combined and displayed to the user at the same time. The first step is to author a JSP page that uses Info*Engine to request this information and then display the requested items in side-by-side frames within a browser window. Usually, this JSP page resides in the directory assigned to Info*Engine JSP pages. To display

the page, the user includes the assigned Info*Engine application URL prefix in the URL. For example, assume the following:

- The Web page is named bill_of_materials.jsp.
- The Web server is named Wsvr1.
- The Info*Engine URL prefix that identifies where JSP pages reside is Windchill.

To initiate the request for the bill_of_materials JSP page, a user sends the following URL using HTTP:

`http://Wsvr1/Windchill/bill_of_materials.jsp`

Because the URL contains the Windchill URL prefix, the Web server passes the URL on to the JSP engine. The JSP engine then finds and processes the JSP page. In this example, the JSP page contains standard JSP and HTML tags that format the page to display the bill of material data in side-by-side frames.

In addition to the standard tags, the JSP page contains custom Info*Engine tags that identify requests for the data that will fill out the bills of material. The custom tags also provide the information that formats the data that is returned from the requests. When the JSP engine encounters the custom tags, it passes these tags off to the SAK for processing.

When the SAK processes the custom tags on the JSP page, it performs the following tasks:

- Locates the information needed to access any requested applications (for example, the PDM or ERP system).
- Obtains any additional information that is required to retrieve, manipulate, and display the requested data.
- Identifies any authentication requirements (who can or cannot access the information requested) if you set up custom tags to do so.

To obtain the data, the SAK sends requests through the Info*Engine protocol to the appropriate Info*Engine adapters.

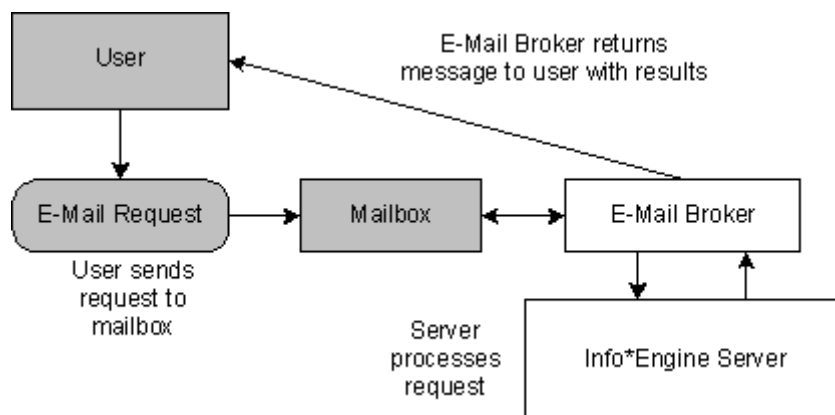
After the appropriate PDM and ERP applications are located, the requested EBOM and MBOM data is retrieved and returned to the SAK. The SAK maintains the data as two separate groups in an internal, virtual database (VDB).

Using Info*Engine custom tags that the author has included in the JSP page, the data returned in these two groups is manipulated and formatted into standard HTML-encoded text. Then, the SAK returns the encoded text to the JSP engine. The JSP engine passes the text back to the Web server, which passes it back to the user's browser to be displayed. As described earlier in this example, the display shows the data in the side-by-side frames that were set up for the EBOM and MBOM comparison originally requested by the user.

Making E-Mail Requests to Info*Engine

The E-Mail Broker allows users to make Info*Engine requests by e-mail.

The E-Mail Broker provides a process that monitors a mailbox for requests to execute Info*Engine templates and tasks. When a request arrives in the mailbox, the E-Mail Broker connects to the Server and passes the request to the Info*Engine server for processing. It also captures output from the processed template or task, and returns the output in an e-mail message to the address specified in the From or Reply-To heading of the original request.



Managing the Execution of Info*Engine Tasks

Info*Engine tasks control the retrieval and manipulation of data. Tasks consist of the following:

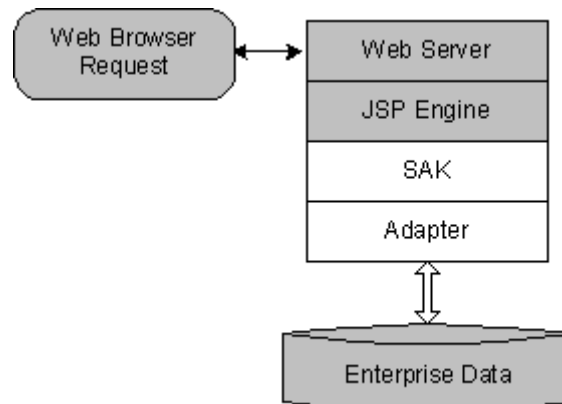
- Info*Engine webjects that retrieve and manipulate data.
- Surrounding Info*Engine custom tags that manage the execution of the webjects.

There are two basic ways to execute tasks:

- Incorporate tasks directly into any Java application, including JSP pages, using Info*Engine custom tags.
- Put the tasks in individual text-based documents, specify which tasks to execute in the Info*Engine custom tags within a Java application (or JSP page).

The decisions about how and where to execute Info*Engine tasks depend on your system requirements. For example, if you have a dedicated environment where one system contains both your Info*Engine application and all of the required software components, and the tasks to execute do not require any complex processing, you may choose to execute your tasks from within JSP pages that are

also used to display the results. In this case, the environment used could be similar to the following:



The JSP engine depicted in the diagram instantiates an instance of the SAK within the JVM of the JSP engine. The SAK is then used to process the Info*Engine custom tags. Some of the Info*Engine tags can execute webobjects that extract data from enterprise systems through an adapter, while others can display the data. In this example, all of the webobjects are contained in the same JSP page.

In a more complex environment where you have a large Java application that executes complex tasks, you can manage the tasks more efficiently by separating them into individual documents, rather than coding them directly in the application. When a task is contained in its own document, it is called a standalone task. For a standalone task, the following processing options are available:

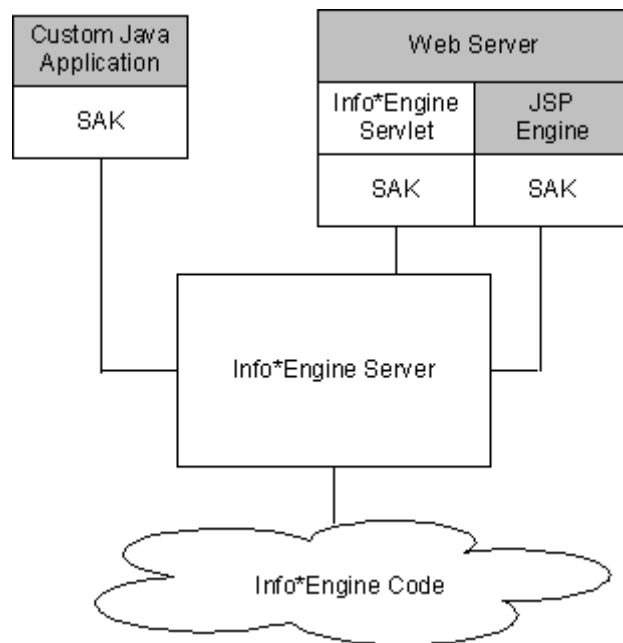
- You can specify where you want a standalone task to execute, whether it is in the same JVM as the application or in the JVM of any Info*Engine server that is part of your environment.
- You can specify how you want to execute standalone tasks that do not execute in the same JVM as the application. There are three ways to execute these standalone tasks:
 - Requesting, through a TCP/IP connection, that the task executes in a specific Info*Engine server. Each Info*Engine server listens for task requests and executes them upon arrival.
 - Implementing a specific event that executes tasks. Establishing events through an Info*Engine Web Event Service allows you to execute tasks based on specific actions that can occur in your environment.
 - Queuing a task for execution. After you queue a task, you can disconnect from your application. Any results are queued for later retrieval either by you or others. By queuing a task, you can also guarantee that the task will be completed, even if it is interrupted due to a system problem.

By performing the basic Info*Engine installation, the Info*Engine server is set up to receive task requests. To use either queues or events for executing tasks, you must install and configure additional Message-Oriented Middleware (MOM) software and then update your Info*Engine configuration.

The following sections describe the architecture of the components used in executing standalone tasks.

Requesting Task Execution Through a TCP/IP Connection

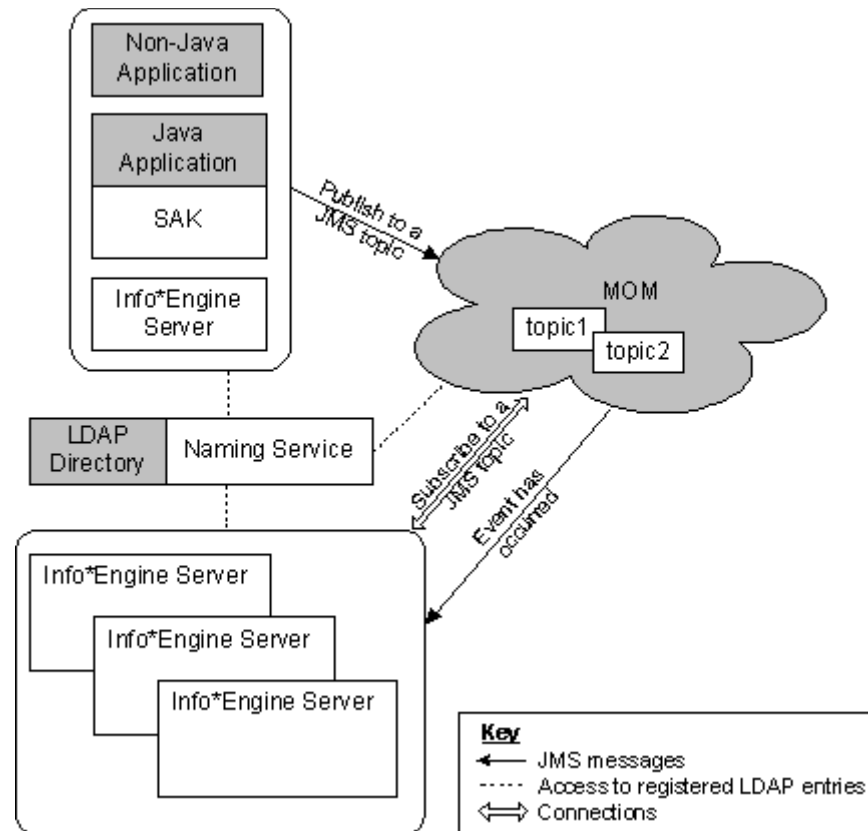
The following diagram show the components used to request the execution of a task through a TCP/IP connection:



All of these components can be configured through the basic Info*Engine installation. As shown in the diagram, requests to execute standalone tasks can come from both custom Java applications and JSP pages. In addition, requests can come from mail messages funneled through the Info*Engine E-Mail Broker, or from SOAP requests that come from non-Java applications through the Info*Engine SOAP RPC servlet.

Implementing Events that Execute Tasks

The following diagram show the components that can be used to implement executing tasks through Info*Engine events:



You can think of events as internet newsgroups, and subscribing to an event is like signing up for a newsgroup, where the name of the event is the name of the newsgroup. When a message is posted to a newsgroup, those who signed up receive the message. In a similar manner, when an event occurs those subscribed to the topic associated with the event receive a message indicating that the event has occurred.

To implement executing tasks through Info*Engine events, you must install a Message-Oriented Middleware (MOM) software product such as IBM MQSeries, and you must create the required topics and a topic connection factory. You must also use the MOM utility to create managed object entries in your Naming Service LDAP directory so Info*Engine can locate the topics.

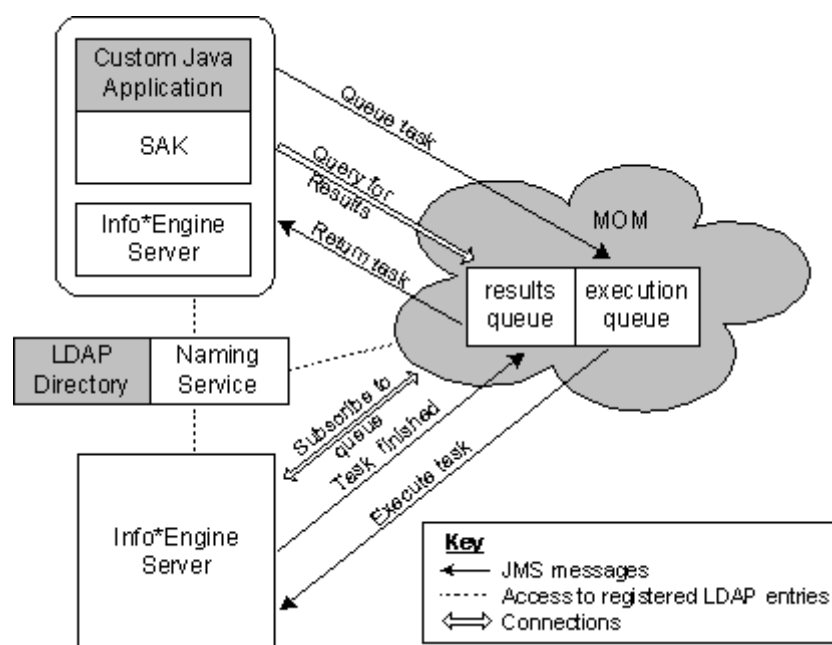
After topics and a topic connection factory have been created and registered, you can use an Info*Engine Web Event Service (WES) webject to subscribe Info*Engine servers to events. On a webject parameter, you name the task to execute when the event occurs. In the subscription process, Info*Engine builds a connection with the MOM. The MOM manages the topics and returns a message

to all subscribed Info*Engine servers when the event occurs. The previous diagram shows three Info*Engine servers subscribed to a topic. Each server executes a task when the event occurs.

Info*Engine also provides a WES webject that you can use to make an event occur. The webject creates a message that adheres to the Java Message Service (JMS) specification and sends the message to a specific JMS topic, indicating that the event has occurred. You can also use any other messaging tool in your environment that can publish to the JMS topic to make the event occur. The previous diagram shows events coming from three different sources: a non-Java application, a Java application, and a task executed from an Info*Engine server.

Queuing Tasks for Execution

The following diagram shows one possible set of components that can be used to queue tasks for execution:



This diagram shows two components (an application and an Info*Engine server) queuing tasks and one component (an Info*Engine server) executing tasks. The components used in queuing and executing tasks can easily be expanded to include multiple custom applications, Info*Engine servers, and MOMs, allowing you to scale your environment to accommodate a large number of users or tasks originating from varied locations.

To set up the queues required for queuing Info*Engine tasks, you must install a Message-Oriented Middleware (MOM) software product such as IBM MQSeries and configure the required queues and a queue connection factory. In addition,

you must use the MOM utility to create managed object entries in your Naming Service LDAP directory so that Info*Engine can locate the queues.

After the queues and queue connection factory are set up and registered, you can use Info*Engine messaging (MSG) webjects to queue tasks to execute and to query for the results. When Info*Engine processes a webject that queues a task, it builds a message that adheres to the Java Message Service (JMS) specification and sends the message to the specified execution queue in the MOM.

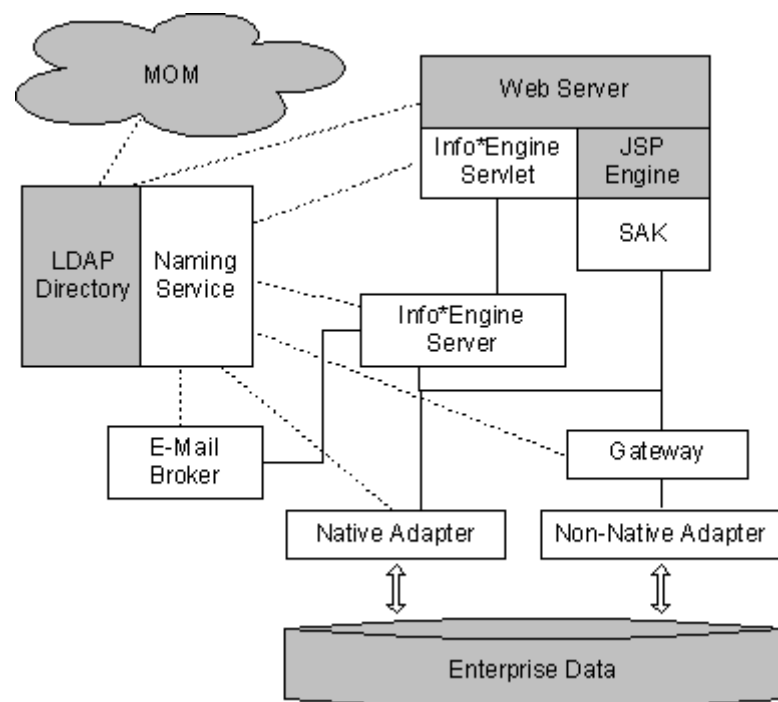
The MOM manages the queues and therefore can identify any Info*Engine server that has subscribed to the queue in order to execute tasks named in messages that are sent to the queue. If multiple Info*Engine servers have subscribed, the MOM determines which server executes the task.

After a task completes, the Info*Engine server sends a message to the results queue in the MOM. At any time, you can browse the messages in the results queue and retrieve results for tasks that have completed.

Starting and Locating Info*Engine Components

The Naming Service uses an LDAP directory to provide the Info*Engine Servlet, the Info*Engine server, the native adapters, and the Info*Engine gateways with a means of locating each other, acting as a traffic director of sorts.

In the following diagram, dashed lines represent the communication between the Naming Service, Info*Engine components, and third party software that could be installed.



Additionally, there is an Info*Engine SOAP RPC servlet entry in the Naming Service.

The Naming Service can be used to automatically start Info*Engine components residing on the same hardware system. By default, the Naming Service is set up during the installation to start the Info*Engine server and the E-Mail Broker. Depending on where you install adapters and gateways, you may want to configure the Naming Service to start them as well.

Setting Up Connections Through Adapters

Adapters provide a connection between the Info*Engine server and information systems. One side of the adapter communicates with the Info*Engine server and the other side communicates with the information system. The adapter translates Info*Engine server requests into information system requests.

Info*Engine provides two types of adapters:

- *Native adapters* are implemented in the Java language and conform to the formal Info*Engine interface specification. For example, the JDBC and JNDI adapters are native adapters.
- *Non-native adapters* are implemented in a non-Java language or do not conform to the formal Info*Engine interface specification. Because the implementation is different from Info*Engine, you must also define a gateway for each non-native adapter you install. Gateways translate Info*Engine requests so the adapters can process them. After an adapter receives a request, the adapter sends it to the associated database or data repository. The adapter also returns any information obtained from the data repository to the gateway where it is translated and passed back to the Info*Engine server. For example, the Metaphase and Oracle adapters are non-native adapters.

The adapters you use are determined by the information systems from which you want to retrieve information. Info*Engine provides a unique adapter for each information system. For example, to retrieve information from a Metaphase database, you must install and configure the Metaphase adapter and, because this adapter is a non-native adapter, you must also configure a gateway for the adapter.

Native adapters can be installed as follows:

- Residing in the same Java Virtual Machine as the Info*Engine webject that accesses the adapter (known as the in-process adapter).
- Distributed in their own Java Virtual Machine on the same hardware system or on remote hardware systems (known as out-of-process adapters).

How to install native adapters is determined by your site.

Gateways usually reside in the same Java Virtual Machine as the calling webject since the code for gateways is installed as part of Info*Engine.

Non-native adapters are always distributed in their own environment and are run as out-of-process adapters.

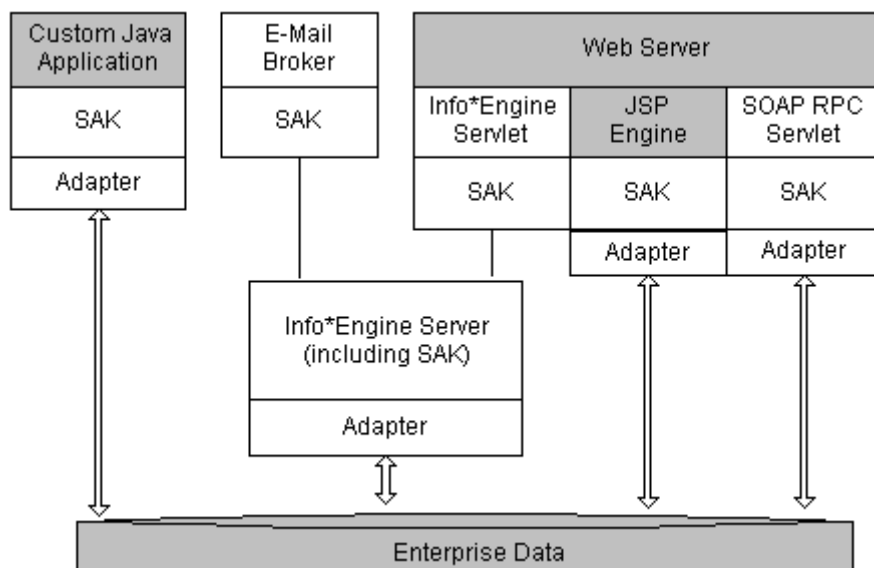
The following sections expand upon the installation options.

Using In-Process Adapters and Gateways

In-process adapters and gateways are installed and run in the same Java Virtual Machine as the calling webject. Only native adapters and gateways can be configured to run in the same JVM as the calling webject. The SAK determines which classes are required when processing webjects for an in-process adapter or gateway, and instantiates the classes in the JVM. Therefore, the communication between the webject and the adapter or gateway is very efficient.

Configuring in-process adapters and gateways minimizes communication delays and resource usage; however, the total resource usage of the machine hosting the Info*Engine code may be increased because of the additional load of running the adapter or gateway.

When an adapter is configured to be an in-process adapter, the adapter classes can be instantiated by any SAK that executes adapter webobjects. The following diagram shows adapter classes residing in the JVM of a custom Java application, the Web server, and the Info*Engine server:



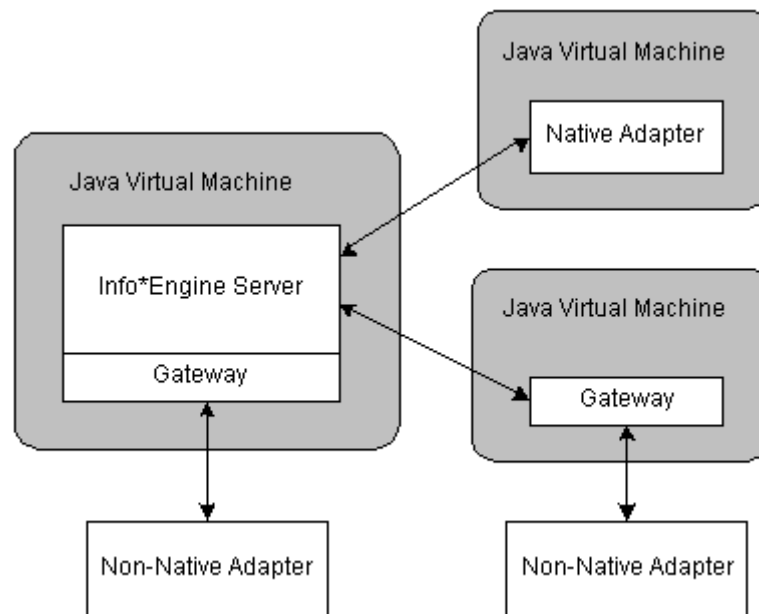
As shown in the diagram, no external communication is needed between the SAK and the adapter when the adapter is in the same process.

Running in-process native adapters and gateways is generally the preferred configuration if the resource usage on a single system is not excessive.

Using Out-of-Process Adapters and Gateways

Distributing adapters across multiple hardware systems reduces the overall resource usage on the machine hosting the Info*Engine code; however, it does introduce some delay and resource usage associated with using a TCP/IP connection for communicating between Info*Engine components and each adapter.

The following diagram shows the communication lines that are used when three adapters and one gateway are distributed.



Distributed native adapters and gateways are installed and run in their own Java Virtual Machine. These virtual machines can be on the same hardware system as the Info*Engine server or on a different hardware system. Non-native adapters can only be configured as out-of-process adapters, and they always run as separate processes. Although gateways for non-native adapters are typically configured as in-process gateways to minimize the communication delays, they do not need to be in the same process.

The deployment of distributed adapters at your site may be determined by a company policy that requires the adapter to be located near the application it accesses, or it may be based on administrative reasons. One reason for running a native adapter in its own Java Virtual Machine could be to better manage the resource usage of the virtual machine.

2

Installation Planning Requirements

This chapter contains information that can help you as you plan your installation or that can be used as reference material during the installation.

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Language Matrices	2-3
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Hardware Requirements

The following hardware configuration is the minimum recommendation for a single-user test system to support either a standalone installation of Info*Engine or a Windchill installation. This configuration can be used to install and initially test Info*Engine or Windchill. For hardware support aside from testing, contact your hardware vendor for their recommendations and consider your site-specific needs to adjust the specifications listed below.

Single-User Test System Hardware Configuration for Standalone Info*Engine

- Architecture that supports the Windows and UNIX systems supported with Windchill 7.0. See the software matrices for detailed information. A link to the matrix is provided in the [Software Matrices](#) section in this chapter.
- 512 MB memory if Info*Engine, Tomcat, Apache, and Aphelion are running on the same machine. This is the minimum memory needed to run Info*Engine.
- Hard drive space recommended overall:
 - 4-GB disk for Info*Engine. This is the recommended size if you are buying new hardware.

Single-User Test System Hardware Configuration for Windchill

- Architecture that supports the Windows and UNIX systems supported with Windchill 7.0. See the software matrices for detailed information. A link to the matrix is provided in the [Software Matrices](#) section in this chapter.
- 128 MB memory for the database server (minimum); 512 MB if Windchill method servers, Tomcat, Apache, Aphelion, RetrievalWare, and Oracle are running on the same machine. This is the minimum memory needed to bring up Windchill. Customer data may require more memory to be configured.
- 64 MB memory for client usage.
- 128 MB memory for developing client GUI.
- Hard drive space recommended overall:
 - 4-GB disk for the database server (Windchill files do not require this much space. This is the recommended size if you are buying new hardware.).
 - 2-GB disk for developer client usage (Windchill files do not require this much space. This is the recommended size if you are buying new hardware.).

Software Matrices

The software matrix lists the combinations of platforms, operating systems, and third-party products that are certified for use with this release on Windows and UNIX operating systems.

To obtain a copy of the software matrix, use the following URL. This URL will direct you to the PTC Online Support Web page for reference documents. For your document search criteria, select your product from the product drop-down list. Select the **Software Matrix** for this release from the returned document list.

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

Product and version matrix information is updated periodically to adjust to environment changes. See the PTC Web site (previously listed) for the latest copy of the software matrices.

Language Matrices

The language matrix lists the languages supported with Windchill 7.0.

To obtain a copy of the language matrix, use the following URL. This URL will direct you to the PTC Online Support Web page for reference documents. For your document search criteria, select your product from the product drop-down list. Select the **Language Matrix** for this release from the returned document list.

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

The language information maybe updated periodically to adjust to environment changes. See the PTC Web site (previously listed) for the latest copy of the language matrices.

The language files for most of the Windchill products are delivered on the Windchill MultiLanguage Pack CD in conjunction with the Windchill release. In some cases, however, a Windchill product will deliver their language files on the product installation CD.

Note: The language content for some of the Windchill products is not available until after the initial Windchill release. Additionally, the documentation that is translated is delivered through the maintenance cycle.

Windchill Installation Documentation

The following is a quick reference list of the Windchill 7.0 products and their associated installation guides:

- An overview of the Windchill 7.0 product suite— Windchill Installation Overview
- Windchill Info*Engine — Info*Engine Installation and Configuration Guide

- Windchill Foundation and Windchill solutions — Windchill Installation and Configuration Guide - Windchill
- Windchill Visualization Services — Windchill Installation and Configuration Guide - Visualization Services
- Windchill Information Modeler — Windchill Installation and Configuration Guide - Information Modeler
- Windchill RetrievalWare Components — Windchill Installation and Configuration Guide - RetrievalWare
- Windchill Classification Tools — Windchill Classification Tools Installation Guide.
- Windchill CounterPart — Windchill CounterPart Installation Guide
- Windchill Enterprise Systems Integration — Windchill Enterprise Systems Integration Installation Configuration Guide
- Optegra Gateway — Optegra Gateway Installation and Configuration Guide
- Pro/INTRALINK — Pro/INTRALINK Gateway Installation and Configuration Guide
- Workgroup Manager for AutoCAD — Workgroup Manager for AutoCAD Installation and Configuration Guide
- Workgroup Manager for AutoDesk — Workgroup Manager for AutoDesk Installation and Configuration Guide
- Workgroup Manager for CADDs — Workgroup Manager for CADDs Installation and Configuration Guide
- Workgroup Manager for Cadence — Workgroup Manager for Cadence Installation and Configuration Guide
- Workgroup Manager for CATIA V4 — Workgroup Manager for CATIA V4 Installation and Configuration Guide
- Workgroup Manager for CATIA V5— Workgroup Manager for CATIA V5 Installation and Configuration Guide
- Workgroup Manager for I-DEAS — Workgroup Manager for I-DEAS Installation and Configuration Guide
- Workgroup Manager for Mentor Graphics Board Station— Workgroup Manager for Mentor Graphics Board Station Installation and Configuration Guide
- Workgroup Manager for Pro/ENGINEER — Workgroup Manager for Pro/ENGINEER Installation and Configuration Guide
- Workgroup Manager for SolidWorks — Workgroup Manager for SolidWorks Installation and Configuration Guide

- Workgroup Manager for Unigraphics — Workgroup Manager for Unigraphics Installation and Configuration Guide

3

About Installing Windchill Products

This chapter provides information about installing Windchill products, the InstallAnywhere installation utility, and loading and mounting a CD-ROM on UNIX systems.

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Overview of an Install Session

The following sections provide an introduction to the InstallAnywhere installation utility.

Choosing the Installer Language

When the installer is launched, the language specified by your system is now the default install language. The installers assume, therefore, your system is set to the locale of your preference (the locale must be a supported Windchill locale) prior to initiating an installation. Once the language environment variable has been set, any messages issued by the installer are issued in that language. For information about the languages supported with this release, use the following URL. This URL will direct you to the PTC Online Support Web page for reference documents. Select the **Language Matrix** for this release from the returned document list:

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

The following instructions are provided to assist you in verifying (or to set) the language environment variable on your system before you start the installation process:

Windows

To review (or set) the language environment variables, select **Start > Settings > Control Panel > Regional Options**. In the **Regional Options** dialog box select the **General** tab. From the drop down list, choose the appropriate language variable.

Note: Alternatively, you can set (or change) the locale for your system using a command. At the command prompt enter:

```
set LANG=<language>
```

Where *<language>* is the language specification for your platform.

UNIX

You can use the **locale -a** command to determine the correct values for the locale. For Latin-1 languages, ISO88591 option should be used if available.

At the shell prompt enter:

```
setenv LANG <language>
setenv LC_ALL <language>
export LANG LC_ALL
```

Where *<language>* is the language specification for your platform.

When the current locale for the system is set to an Asian language, InstallAnywhere allows you to choose only that Asian locale or English from the

locale drop-down list. When the current locale for the system is a non-Asian language, all of the non-Asian languages in the drop-down list, including English, will appear.

Navigation and Cancelling

Installers operate in a standard wizard paradigm using **Next** and **Previous** to move forward or backward through the steps of the installation. A navigation bar on the side of the installer window gives a course-grained view of where you are in the overall installation process. Be aware, that on busy systems and with complex installers there can occasionally be a delay in moving between steps. Avoid pressing **Next** or **Previous** a second time while you are waiting for the switch as this could cause the wizard to skip past the appropriate panel.

The basic interaction of each installer is to first collect information from you, then offer you a chance to review the most critical settings before actually beginning the modification of files on your system. At this point, the label on the **Next** button is changed to **Install** to signal that if you proceed that files on your system will be changed.

Pressing **Cancel** also shown in the installer window may stop an installation. If you cancel **after** you have pressed **Install**, be aware that your file system has already been modified and the installers cannot undo what they have changed. Should you accidentally press **Cancel**, you are prompted to confirm that you really do want to cancel or you may resume the installation. Unless specifically noted, the installers in the Windchill product suite do not have an uninstall capability.

Installation Type

Some installers offer specialized, installation type, execution modes and custom options. The most common installation types for the Windchill product suite installers are Typical and Custom. These offerings are analogous to what you see from some desktop products that offer you to do installations such as Typical, Minimal, Compact, Custom, and so on. Typical would be the most common course of prompts and options. Custom allows you to get to options that may not be available by Typical or allow you to skip portions that Typical would require you to perform. Some installers offer additional installation types that allow for specialized processing.

Choosing Installation Directory

All installers require you to choose where the software will be installed. Some products may be installed in any location, whereas others must be installed into the same installation directory as another product. If the product has no restrictions on where it is installed, you could also enter a new directory path and the installer will create it.

If the product you are installing must be installed into the same location as another product, the panel will indicate the name of the prerequisite product or products. It then shows a list of one or more directories that it believes meet the prerequisites (*). You can then choose one or browse to another directory if the one you want is not shown. After the directory is selected, the installer will then perform a more in-depth validation of the chosen directory. If it does not meet the requirements, you will be told and given the chance to choose another location.

(*)This list is taken from a central registry that the installers maintain on your system. If a previous installation has been deleted, a directory may be shown which no longer exists.

Terminology

Installer — The program that you interact with to perform the installation, for example, setup or setup.exe, is referred to as the installer. The term installer is not intended to refer to the person doing the work.

Installation Directory — The directory where you choose to place the product you are installing.

Java Runtime Environment

To run InstallAnywhere, you will need a Java Runtime Environment (JRE). For installations that take place on the Windchill server system, you can use the Software Development Kit (SDK). By installing the SDK on the server you will provide InstallAnywhere with the JRE features that it needs to function. Similarly, Windchill requires the SDK to function. For installations that take place on the Windchill client system you can use the IJRE.

Tip: PTC recommends installing the SDK on the Windchill server system to support both Windchill and InstallAnywhere. The instructions to install an SDK are located in the Installing Java 2 Software Development Kit chapter in the *Windchill Info*Engine Installation and Configuration Guide*. Use the information provided in that chapter to perform the SDK installation.

The JRE is a subset of the files included in the SDK. It does not include the compiler, the debugger or related tools. Instead, it provides the minimum runtime for Java technology-enabled applications (for example, the JVM, JFC, JIT and supporting files). For installations that take place on the Windchill client system, you will only need the JRE.

On many systems, there can be multiple JREs installed. The installer will choose the first JRE it finds in the user's PATH. On Windows, if a JRE is not in the PATH it will also search the Windows registry, moreover, InstallAnywhere will ignore any Java VM that exists in the <system root>\WINNT\system32 directory. The JRE used by the installer is noted in the *.PtcInstall.log file that is created by the installer. You can also verify the JRE used by the installer by setting the LAX_DEBUG environment variable:

```
LAX_DEBUG=1
```

When the installer executes, it will issue diagnostic messages indicating which JRE was used.

The Windchill software matrix lists the versions of the SDK and JRE that are supported for this release. When selecting the product to download, be sure that it provides support for the language that you need. You can obtain a JRE for download at the following URLs:

Windows and Solaris

<http://java.sun.com/j2se/downloads.html>

AIX

<http://www.ibm.com/developerworks/java/jdk>

HP-UX

<http://www.hp.com/products1/unix/java>

The Docs Directory

For some CD images, a directory named *Docs* is present on the root of the CD image. This directory contains one or more *.pdf files of manuals for the product(s) being installed from that CD. It is common for there to be a copy of the installation guide in that directory, plus possibly other manuals of an administrative nature. These books, along with others that are embedded elsewhere in the installation image, are copied onto your system by the installer.

Disk Space Check Process

The installation of some products takes a considerable amount of disk space. The **Review Settings** panel of each installer gives an indication of the estimated disk space requirements to complete the installation based upon the options you have chosen. Once you press the **Install** button from the **Review Settings** panel, the installer will check your system for the required disk space. If it does not believe there is enough space, the installer will present a dialog telling you this and will wait for the space to be freed up. You may also choose to go back and select a different installation directory.

The disk space check can be disabled completely by setting the environment variable `CHECK_DISK_SPACE` to a value `OFF` (note all caps) prior to launching the installer.

Launching the Installer

Automatic and manual execution on Windows

To manually run the setup program, navigate to the Windows directory and double click the **setup.exe** program.

UNIX Setup Script

The installer script name is **setup**. It is located directly under the CD image root, or in a sub-directory if the install image contains multiple installers. The script will automatically launch the program for the operating system on which the installation is taking place.

Before you install, check the `DISPLAY` environment variable setting to ensure that the installation windows will display on the machine. The `DISPLAY` value on the machine that runs the setup program should be set to `<machine>:0.0`, where `<machine>` is the name of the system where the setup program is installed.

If the `DISPLAY` variable is not set correctly, the installation program exits with the following error:

```
Configuring the installer for this system's environment...

Invocation of this Java Application has caused an
InvocationTargetException. This application will now exit. (LAX)
```

Multiple Installers on One CD

In some cases, there are multiple Windchill products on one CD, such is the case of the Windchill Third Party Software CD. The installer does not automatically launch when a CD contains multiple products. The separate installers are located in the appropriately named subdirectory of the CD.

To run the installation, navigate the CD-ROM directory to locate the directory of the software to install, open the directory, select the directory for your operating system, and locate the setup program within this directory. Run the setup program as follows:

- On Windows — Run `setup.exe`
- On UNIX — Run setup script

Loading and Mounting the CD-ROM on UNIX

Most UNIX systems automatically mount the CD-ROM after it is loaded into the CD-ROM drive. For users whose machines do not mount automatically, the following instructions explain how to load and mount the CD-ROM locally and remotely.

Note: Sun Solaris 2.x has automatic CD mounting. For more specific information on how to mount CDs on Sun hardware, visit <http://docs.sun.com/>.

Determining the SCSI ID of the CD-ROM Drive

You specify the SCSI identification number of your CD-ROM drive when you mount the CD-ROM file system to your UNIX workstation.

If you already know the SCSI ID of your CD-ROM drive, proceed to the next step.

If you do not already know the SCSI ID of your CD-ROM drive:

- For external CD-ROM drives, the SCSI ID can be found on the back of your CD-ROM drive. Look for a single-digit switch. The displayed number is the SCSI ID number.
- For internal CD-ROM drives, use the following table to find the command(s) you need to enter to determine the SCSI ID (the bold # is the ID).

Commands Used to Find the SCSI ID of the CD Device

System	Command and Output	SCSI ID
HP-UX	<ol style="list-style-type: none">1. Insert the CD-ROM into the drive and use the command.2. Become root user.3. For each file in the /dev/rdisk directory, type the following at the command line: <code>/etc/diskinfo /dev/rdisk/<device></code> For the device file identified as type:CD-ROM, the SCSI ID is to the right of the letter t in this example of a device file name: <code>c0t3d0</code> Note: The identified device file name is the same file name that is used in the command to mount the CD-ROM.	
SUN	Automatically mounts the CD-ROM.	

AIX	lsdev -C -c cdrom -H cd0 Available 00-08-00-40 CD-ROM Drive	4 (in the string 00-08-00-#0)
-----	--	-------------------------------------

<device> should be replaced with each item in the /dev/dsk directory.

Note: The inclusion of a system in this table does not indicate support for that system; this information is only included to help you determine the SCSI ID for CD-ROM drives that are remotely mounted to your workstation. See the software platform matrix (<http://www.ptc.com/cs/doc/index.htm>) for information on supported systems and platforms.

Loading and Mounting the CD-ROM Locally

1. Turn on the CD-ROM drive and insert the CD-ROM.
2. If the /cdrom directory does not already exist, create it by using the following command:

```
mkdir /cdrom
```

3. To mount the CD-ROM drive, enter the command appropriate for your UNIX workstation system.

For Sun, the command is:

```
mount -F hsfs -o ro /dev/dsk/c0t#d0s0 /cdrom
```

In the command line, replace the # symbol with the SCSI ID of the drive.

For AIX, the command is:

```
/usr/sbin/mount -v cdrfs -f /dev/cd0 /cdrom
```

For Hewlett-Packard, the procedure is:

- a. Add the following line to the /etc/pfs_fstab file. The first entry is the CD-ROM device file, the second is the mount point. The third entry indicates that the CD-ROM to be mounted is in ISO9660 format with Rockridge extension:

```
<device_file> <mount_point> <filesystem_type>  
<translation_method>
```

Example:

```
/dev/dsk/c5t2do /cdrom pfs -rrip xlat=unix 0 0
```

- b. Perform this step (and steps c through e) as the root user. Run the following file:

```
# nohup /usr/sbin/pfs_mountd &
```

- c. Run the following file:

```
# nohup /usr/sbin/pfsd &
```

- d. Run the following command to mount the CD-ROM:

```
# /usr/sbin/pfs_mount /cdrom
```

- e. Exit the root user account:

```
# exit
```

- f. Change directories to /cdrom, where you can see a lowercase listing of the directories and files on the CD-ROM. The mounted CD-ROM should appear as another read-only file system.

Loading and Mounting the CD-ROM Remotely

The CD-ROM drive should be mounted using NFS version 2. On machines that support NFS 3, an extra argument needs to be added to the mount command to force the use of NFS 2.

1. Load and mount the CD-ROM on the remote UNIX system to which the CD-ROM drive is connected. Use the procedure outlined in the section, Loading and Mounting the CD-ROM Locally.
2. The CD-ROM file system must be exported before a remote UNIX system can allow access to the CD-ROM from your local UNIX workstation. To accomplish this, a line must be added to a file on your local UNIX workstation and, in some cases, a command needs to be executed.
3. Use the following table to look up the system of the remote UNIX system. Select your system from the System column, and add the text line in the **Line to Add** column to the file in the **File to Edit** column. You must have correct write permissions to edit these files.
4. If necessary after you have made the changes, execute the command listed in the **Command** column.

Exporting the CD File System

System	File to Edit	Line to Add	Command
HP-UX	/etc/exports	/cdrom -ro	exportfs /cdrom
AIX	/etc/exports	/cdrom	/usr/sbin/exportfs /cdrom
Sun	/etc/dfs/dfstab	share -F nfs -o ro /cdrom	shareall

5. If the /cdrom directory does not already exist on your local UNIX workstation, create it using the following command:

```
mkdir /cdrom
```

6. The CD-ROM directory must be mounted from the remote UNIX system to your local workstation. Use the following table to identify your local UNIX workstation type and execute the corresponding command. In the command, specify values as follows:
 - *<node>* is the name of the remote UNIX system to which the CD-ROM drive is connected.
 - *<cdmount>* is the CD-ROM mount directory used on the remote UNIX system.

CD Device Remote Mounting Commands

System	Remote Mounting Command
HP-UX	<code>/etc/mount -o ro,hard <node>:<cdmount> /cdrom</code>
AIX	<code>/usr/sbin/mount -o ro,hard <node>:<cdmount> /cdrom</code>
SUN ¹	<code>mount -o ro,hard <node>:<cdmount> /cdrom</code>

1. If problems occur while using InstallAnywhere from a remote-mounted CD-ROM, you can try remounting the remote CD-ROM using one of the following commands:

For Sun systems:

```
mount -o ro,hard,vers=2 <node>:<cdmount> /cdrom
```

For IBM RS/6000 systems:

```
/usr/sbin/mount -o ro,hard,vers=2 <node>:<cdmount> /cdrom.
```

7. If your system does not automatically mount the CD-ROM, enter the required command. For example, for Hewlett Packard systems:

```
/etc/mount -F cdfs -o ro /dev/dsk/c?t#d0 /cdrom
```

In the preceding example, the number sign (#) represents the SCSI ID of the CD-ROM drive.

8. The CD-ROM file system must be exported before a remote UNIX system will allow access to the CD-ROM from your local UNIX workstation. To accomplish this, you must add a line to a file on your local UNIX workstation, and, in some cases, execute a command.
9. Use the following table, to identify your remote system; add the text in the **Line to Add** column to the file listed in the **File to Edit** column. You must have the correct write permissions to edit the files. If necessary, execute the command listed in the Command column. For additional information, see your hardware-specific documentation.

Exporting the CD-ROM File System

System	File to Edit	Line to Add	Command
HP-UX	/etc/exports	/cdrom -ro	exportfs /cdrom
Sun	/etc/dfs/dfstab	share -F nfs -o ro /cdrom	shareall

If problems occur while using InstallAnywhere from a remote-mounted CD-ROM on Sun Solaris systems, try remounting the remote CD-ROM using the following command:

```
mount -o ro,hard,vers=2 <node>:<cdmount> /cdrom
```

Installation Log Files

During the installation, information is written to various log files. The log files are located in the *<installation directory>/installer/logs* directory. There are generally two log files written per installation session:

- *<installer short name>_InstallLog.xml*
- *<installer short name>_PtcInstall.log*

When multiple executions of the same installer are performed to the same installation directory, these log files are backed up and the file names are changed to include a sequence number. The sequence numbers begin with 000. For example, the log files for the first execution of the installer would be named as follows:

- *<installer short name>_InstallLog.000.xml*. For example, WNC_InstallLog.000.xml
- *<installer short name>_PtcInstall.000.log*. For example, WNC_PtcInstall.000.log

Up until the point where you have actually pressed **Install** on the **Review Settings** panel, the log files are written to the temporary directory controlled by the operating system environment variable TMP. On Windows, this variable typically defaults to Local Settings\Temp directory of the current users in the User Profile directory. For example, d:\User Profiles\<userid.domain>\Local Settings\Temp.

When the installer is executed in a language other than English, messages in the *<installer short name>_PtcInstall.log* files are written in both English and the translated form. Not all messages have a translated form.

If problems should occur during the installation, write down the location of the log files and be prepared to send them to PTC Technical Support for analysis. If an installer should fail before the install has actually started, the files are located in the directory identified by the operating system environment variable TMP as noted previously.

Troubleshooting

Reading through the following common problem descriptions may help you in troubleshooting your installation problems.

Problem:

When an installation fails, the installer logs are not written to the standard output directory of *<installation directory>/installer/logs*. In this case, the installer will display the location of the installation log files that it has produced. Write down the location specified by the installer.

Action:

The location of the log files depends upon when during the installation the installation fails. Refer to the section on Installation Log Files for details.

Problem:

On UNIX, the installer terminates unexpectedly.

Action:

PTC has encountered situations where a core dump is caused by corrupt font files. This problem is known to have occurred in 1.3.x and 1.4.x JVMs. If you are running a 32-bit JVM, then set the environment variable LAX_DEBUG=1 in the shell where the intaller was launched, and restart the installer. Navigate through the installer until the installer fails. This should result in output being written to the console window. Browse the console output for the following message:

```
Assertion failed: offset <fFileSize, file
../../../../src/share/natvie/sun/awt/font/fontmanager/fontobjects/fon
tObject.cpp, line XXX
Abort - core dumped
```

The solution is to identify the problematic fonts per the Evaluation sections in the following Java Bug Parade reports provided by Sun:

<http://developer.java.sun.com/developer/bugParade/bugs/4838130.html>

<http://developer.java.sun.com/developer/bugParade/bugs/4838130.html>

Problem:

The installer crashes on AIX and will not launch. This can happen when the JRE used for the installer is for a 64-bit JRE. If a 64-bit JVM is found, this is noted in the *_PtcInstall.log file.

Action:

Change the operating system PATH for the command shell which is used to launch the installer to ensure a 32-bit JRE is in the path before the 64-bit one. This should allow the installer to execute.

Problem:

Technical Support asks you to provide additional diagnostic information about how the installer launches and what JRE is used to execute the installer.

Action:

There are two ways to obtain additional diagnostics:

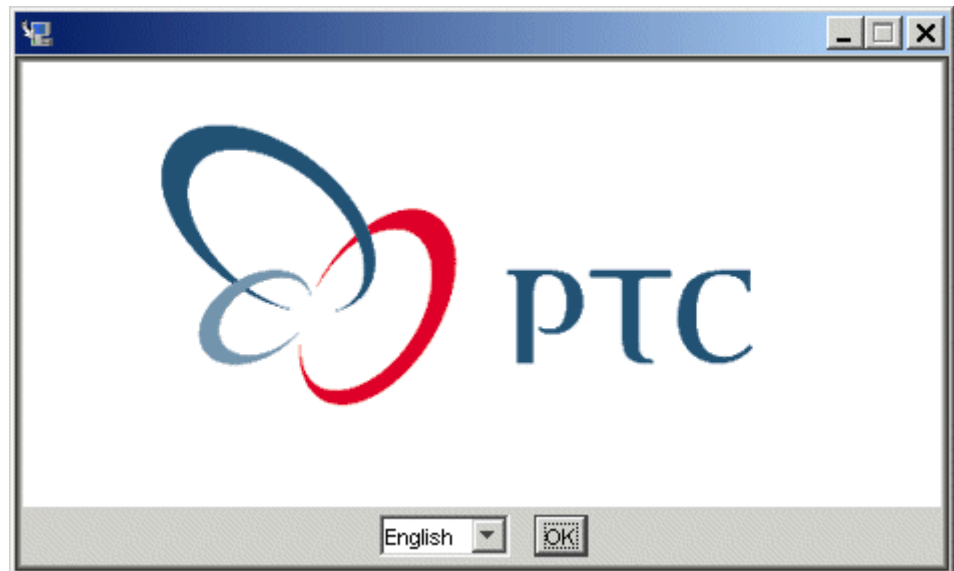
- On some Windows versions, you can press the control key when you double-click on the setup.exe program. This will bring up a command shell window with diagnostic information. This info can be copy and pasted into a file to send to Technical Support.
- On Unix and Windows, you can set the environment variable LAX_DEBUG to 1. Then execute the setup program for the installer. The diagnostics will be shown in the same command window (UNIX) or in a popup window (Windows).

Problem:

Clicking the close button when selecting a language, but the installer does nothing.

Action:

The first window that opens when the installer is launched is the PTC logo window.



On this window, the cancel button (X) located in the upper right corner has no effect. The cancel button will not close the window.

To cancel the installation, click the **OK** button, then click the **Cancel** button in the next window that opens. A message confirmation window will open, from which you can cancel the installation, click **Quit**.

This issue has been filed as a bug with the software vendor ZeroG.

Problem:

Sometimes the installer appears to skip over a step.

Action:

The installers behave in a wizard-like fashion with **Next** and **Previous** buttons. In a system where the response is slow, the wizard may not advance to the next or previous step as quickly as expected and you may click the **Next** or **Previous** button again (repeatedly). This mouse click event is queued up and will be acted upon when the system responds. This may advance the windows beyond the expected window.

Once the **Next** or **Previous** button has been clicked, wait for the installer to respond and advance to the intended window.

Under normal system conditions, the installer will move forward and backward through the windows with little noticeable delay.

This issue has been filed as a bug with the software vendor ZeroG.

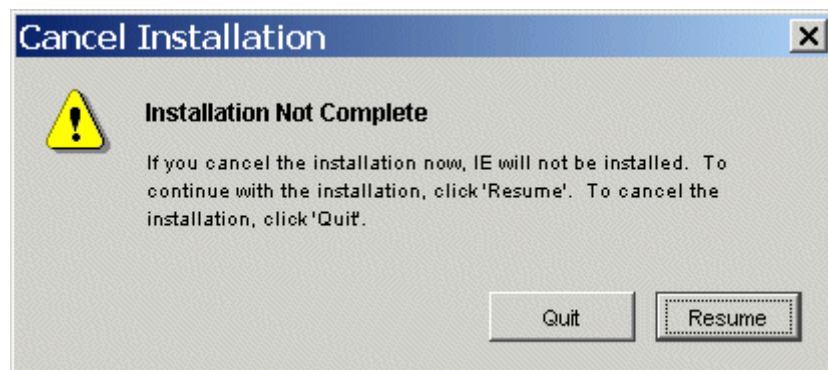
Problem:

On Windows, the installer **Cancel Installation** popup window demands the user interface focus.

Action:

When you try to cancel the installer through the **Cancel Installation** popup window, the window monopolizes the window focus on the desktop.

To release the focus, click either the cancel (X) or **Resume** button.



Gathering Information for a Support Call

Prior to contacting Technical Support for assistance with your installation problem, gather the log files for your particular installer from the *<installation directory>/installer/logs* directory.

In some cases, the files are quite large. You may want to ZIP or TAR them before sending them to Technical Support.

If you are reporting an issue for a product installed into the Windchill installation directory, also provide the information generated by the Windchill version command. This information can be obtained by executing the following command in a command prompt window:

```
windchill version
```

The following report is generated:

Support Date Code	Support Release Number	Release Id	Installer Sequence	Display Label
--	-----	-----	-----	-----
M050	7.0	wmp.7.0.05.01	01	Windchill Maintenance Pack 7.0.5
% M020	7.0	ie.7.0.02.56	01	Info*Engine 7.0.2
%! M020	7.0	wlp.7.0.02.04	02	Windchill Language Pack 7.0.2
! M050	7.0	wnc.7.0.05.56	03	Windchill Services 7.0.5
Legend				
% The installation or updating of this assembly is not complete.				
! The installed version of this assembly has regressed or is out-of-date compared to other assemblies in this installation directory.				
There are no temp patches installed.				
Non-Default Locale Support.				
Code Name				

de				
fr				

Provide the information in this report when submitting your information to Technical Support.

II

Installing Web Applications Section

4

Installing Web Browsers and Java Plug-in

This chapter describes the supported Web browsers and Java plug-in.

Select a version of the Web browser and Java plug-in supported with this release. For more information about the products supported with this release, see the [Software Matrices](#) section.

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About Web Browsers	4-2
Installing Netscape Navigator	4-2
Installing Microsoft Internet Explorer (Windows Only).....	4-2
Installing Mozilla	4-2
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About Web Browsers

Installing Netscape Navigator

If you use Netscape Navigator, PTC recommends using the versions listed in the software compatibility matrix. Although Windchill has certified earlier versions of Netscape Navigator, users have encountered problems while using them. By upgrading to one of the recommended versions, problems can be avoided.

Netscape Navigator is available free for downloading.

You can install Netscape Navigator from either the stand-alone browser or from the Navigator client suite. In either case, a typical installation is adequate for use with Info*Engine and other Windchill software products.

Note: If you are using Netscape Navigator in a UNIX environment, MOZILLA_HOME must be set in order for Netscape to find the boot.jar file.

Netscape Navigator Browser Updates

If you are using a version of Netscape Navigator recommended with this release then no SDK patches are required. However, if you are using an older version, and that version does not support Java 1.1.x, then, a patch is required. Open the Navigator Java Console to display the Java version information. If Navigator does not include a reference to Java 1.1.x, a patch is required. Links to obtain any required patches for Netscape Navigator are available from the Netscape Web site. Apply the recommended SDK Navigator support patches for your site.

Installing Microsoft Internet Explorer (Windows Only)

You can install Internet Explorer from either the stand-alone browser or the full product suite package. In either case, a typical installation is adequate for use with Info*Engine and other Windchill software products. If you choose to install from the stand-alone browser, do not enable Active Desktop. When Active Desktop is selected, Internet Explorer replaces the system level process named Explorer in Windows. Hence, you cannot stop and restart your Web browser to affect environment changes without restarting the entire system.

Microsoft Internet Explorer is available free for downloading.

Installing Mozilla

Mozilla is available for download at the following URL:

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

Follow the vendors instructions to install and configure Mozilla for your environment.

Verifying Java Plug-in

Windchill uses the Sun Java 2 Plug-in instead of the default virtual machine provided by the browser. The Java 2 Plug-in supports Microsoft Internet Explorer and Netscape Navigator. Verify the Java plug-in version installed with your browser conforms to the versions supported with this release.

When the plug-in is installed for the first time, you are directed to the plug-in site and you must follow the links and directions (see the readme document) provided by Sun to download and install the plug-in. Thereafter, the upgrade is done automatically for you.

For additional information about the Sun Java Plug-in product and installation instructions, see the following URL:

<http://java.sun.com/products/plugin/index.html>

Note: Sun has reported known install issues for the plug-in. See the Sun bug report at the following URL:

<http://developer.java.sun.com/developer/bugParade/bugs/>

Note: To avoid plug-in conflict problems when more than one JRE is installed on the client, uninstall all JRE versions except one.

5

Installing and Configuring a Web Server and Servlet Engine

This chapter provides you with the information to install and configure Apache and Tomcat, and directions for the other PTC supported Web servers and servlet engines.

Select a combination and version of the Web server and servlet engine that are supported with this release. For more information about the products supported with this release, see the [Software Matrices](#) section.

Tomcat and Apache are installed using the InstallAnywhere utility. For information about using InstallAnywhere, see the [About Installing Windchill Products](#) chapter.

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Before You Begin

FrameMaker supports the following Web server and servlet engine combinations with this release:

- Apache with Tomcat
- Sun ONE with its embedded servlet engine

This chapter describes how to install and configure Apache and Tomcat. For all other Web servers and servlet engines, the manual configuration instructions are located in the Configuring Other Web Servers and Servlet Engines section. Configurations for some of these combinations require that Info*Engine be installed first, therefore, you will perform the configurations for the other Web server and servlet engines following the installation of Info*Engine. Instructions are provided in the Info*Engine chapter to direct you when these configurations should be performed.

The Apache installer can configure Apache for Tomcat for you, which is the recommended configuration method. Tomcat does not have to be installed prior to running the Apache installer, as long as you can provide the host name of the machine you intend to install Tomcat on and the port number you will assign to Tomcat. The preferred install order is to install Tomcat and then Apache. The instructions in this chapter assume you will install Tomcat first and then Apache.

PTC only supports the Tomcat delivered on the CDs by PTC with this release. While PTC highly recommends using the Apache delivered by PTC with this release, you can use other versions of Apache as long as it meets the criteria described in the Windchill software matrices. The PTC installers will only configure Apache installations that have had the PTC configuration scripts added to them. If you elect to not use the PTC-provided Apache, you have two options:

- Apache meets Windchill software matrix requirement scenario— Convert Apache to make it compatible with Windchill. Conversion instructions are located in the [Configuring a Non-PTC Apache \(manual install\)](#) section in the Advanced Apache and Tomcat Options chapter. If, after the conversion, Apache fails the PTC installer evaluation, then you can:
 - Use Apache provided by PTC.
 - Continue to use this Apache by configuring it so that it functions with Windchill. PTC, however, does not provide the instructions for, or supports this configuration.
- Apache does not meet Windchill software matrix requirement scenario — Use the Apache that you have by configuring it so that it functions with Windchill. PTC, however, does not provide the instructions for, or supports this configuration.

Installing Tomcat

PTC only supports a configuration where Tomcat and Info*Engine are installed on the same machine.

Before you begin to install Tomcat, you must have:

- Consulted the Windchill software matrices for products and versions supported with this release:

<http://www.ptc.com/cs/doc/index>

- Installed Java Software Development Kit (SDK).

To complete the installation, the installer will prompt you for the following information.

- The directory where you installed the SDK.
- A port number to assign to Tomcat
 - Default is 8009.

The Tomcat servlet engine is bundled with Windchill and it is located on the Windchill Third Party Software CD. This CD includes other Windchill products for this release. Always install Tomcat from the Windchill CD; do not use other versions of Tomcat.

An installation executable is available for each platform and it is distinguished as <platform> in the file path.

When performing the installation, the install user should be:

- On Windows — The same user that will run the application.
- On UNIX — A non-root user.

1. Insert the CD and run the setup executable:

- On Windows: <CD-ROM>\Tomcat\<platform>\setup.exe
- On UNIX: <CD-ROM>/Tomcat/setup.sh

2. When the installer begins, the first window that opens is **Before You Begin**. This section summarizes the preinstallation requirements, provides a link to the software matrices, and a reference to this book, *Windchill Info*Engine Installation and Configuration Guide*.

When you are ready to proceed with the installation, click **Next**.

3. In the **Select Directory** panel, enter the location where Tomcat should be installed, or select a preexisting installation of Tomcat that the installer found.

Tomcat can be installed in any directory; there are no preexisting directory requirements. In the case of a new installation, accept the default directory, or browse to create or select a different path.

Windows default install directory: C:\ptc\tomcat

UNIX default install directory: /opt/ptc/tomcat

4. In the **Select Java Software Development Kit Directory** panel, enter the location where the SDK is installed or select one of the directories the installer found.
5. In the **Configure Port** panel, enter a port number that Tomcat will listen on for requests from a Web server. The default port number is 8009.
6. The **Review Settings** panel lists the selections you specified for the installation. Verify the information is correct, and then click Install.
7. The **Installing** panel displays the installer progress as files are copied to the system and configurations are performed.
8. When the installation completes successfully, the **Installation Complete** panel displays the directory where Tomcat was installed. The installation log files are located in the <Windchill>/installer/logs directory. The log files for the installation are named:
 - Tomcat_InstallLog.xml
 - Tomcat_PtcInstall.log

If the installation fails, a panel is displayed that contains error messages and the name of the log files. Document the location and name of the log files. The log files can be helpful in assisting you in determining the cause of the failure. Be sure to include them when filing an installation support request. See the Installation Log Files section in the [About Installing Windchill Products](#) for more information.

Starting and Stopping Tomcat

After you have installed Tomcat, it is not necessary to start it. In fact, PTC recommends that you complete the installation of as many Windchill applications as possible before starting Tomcat because Tomcat cannot be running during an installation in situations where there is an application and Tomcat interface. At a minimum however, Tomcat must be running when the Windchill database is loaded. When it is necessary, you will be given the instruction to start Tomcat.

Throughout the guide, you will occasionally be given an instruction to start Tomcat, in which case, you will be redirected to this section to perform these instructions to start and stop Tomcat.

Tomcat Startup Files

The user that runs Tomcat should be the same user that installed Tomcat. PTC provides the following Tomcat startup files:

- wttomcat_start.bat for Windows
- wttomcat_start file for UNIX

These files are located in the bin directory where Tomcat is installed. The startup file sets the required environment variables CATALINA_HOME, JAVA_HOME, and JAVA_OPTS, and initiates the Tomcat start command.

Alternatively, you can configure Tomcat as an Windows service. Those instructions are provided in the Running Tomcat and Apache as Windows Services in the Configuring Apache and Tomcat with Other Options chapter. These instructions should be performed after the installation of the Windchill applications are complete as previously recommended.

Setting Heap Size

The Tomcat installer provides initial minimum and maximum memory heap sizes, however, these are simply initial defaults that may not be sufficient for a given installation. You can adjust these settings by editing the value assigned to JAVA_OPTS in the start file. For example, on Windows the JAVA_OPTS variable can be adjusted as follows:

```
setenv JAVA_OPTS "-server -Xms64m -Xmx128m"
```

Modifying wttomcat_start for HP-UX 11 Systems

Info*Engine can hang on HP-UX 11 systems when the Java Virtual Machine uses standard JNDI interfaces to access an LDAP directory. To fix this problem, set the HP-UX Java option -XdoCloseWithReadPending in your servlet engine and in the Info*Engine server start file, startserver.sh.

In the Tomcat start file, you can set this option by adding it to the JAVA_OPTS variable as follows:

```
setenv JAVA_OPTS "- server -Xms64m -Xmx128m  
-XdoCloseWithReadPending"
```

Tomcat Shutdown Files

Tomcat provides the following shutdown files:

- shutdown.bat for Windows
- shutdown.sh file for UNIX

These files are located in the bin directory where Tomcat is installed.

Use one of these files to shutdown Tomcat.

Tomcat Log Files

The Tomcat log files can be helpful when troubleshooting your configuration. The log files are located in the `<Tomcat>/logs` directory.

Install Apache

PTC supports configurations where Apache is installed on the same machine as Info*Engine (local) or on a different machine (remote). A typical configuration is to install Apache and Info*Engine on the same machine. The instructions provided in this chapter support a typical installation scenario. If you choose to install Apache on a machine other than the Info*Engine machine, then additional steps are needed to interface a remote configuration of Info*Engine and Apache. The tools to complete the configuration are delivered with Info*Engine, therefore, you will perform the interface instructions following the installation of Info*Engine in that case.

Before you begin to install Apache, you must have:

- Consulted the Windchill software matrices for products and versions supported with this release:

<http://www.ptc.com/cs/doc/index>

- The Tomcat host name and port number for the Apache and Tomcat configuration.

The PTC installer does not support an HP-UX Apache installation, because HP-UX is delivered as a depot file and it is installed using a different tool. Separate instructions are provided to install Apache for HP-UX and Apache for the other platforms. To complete the installation, the InstallAnywhere will prompt you for the following information.

- The DNS registered host name of the machine where Apache will be installed.
- The HTTP (default 80) and HTTPS (default 443) port numbers. Values are required for both properties. HTTPS is not effective out-of-the-box and it requires manual configurations to implement.
- The e-mail address of the Web server administrator. This person will receive messages generated by Apache.
- The host name where Tomcat is installed.
- The port number Tomcat listens on.

Caution: Warning for Windows users. An installation of Apache on or under a Windows drive letter obtained by using the Windows Map Network Drive utility (for example, Windows Explorer > Tools) is not supported. Apache does not operate reliably when located on a mapped drive. Instead, select a local drive such as C or D for installation.

Apache for Non HP-UX Platforms

The Apache Web server is bundled with Windchill and it is located on the Windchill Third Party Software CD. The Third Party Software CD includes other Windchill products for this release.

An installation executable is available for each platform and it is distinguished as *<platform>* in the file path. You can install Apache on the same machine as Info*Engine (local) or on another machine of choice (remote).

When performing the installation, the install user should be:

- On Windows — The same user that will run the application.
- On UNIX — A non-root user.

1. Insert the CD and run the setup executable:

- On Windows: *<CD-ROM>\Apache\<platform>\setup.exe*
- On UNIX: *<CD-ROM>/Apache/setup.sh*

2. When the installer begins, the first window that opens is **Before You Begin**. This section summarizes the preinstallation requirements, provides a link to the software matrices, and a reference to this book, *Windchill Info*Engine Installation and Configuration Guide*.

When you are ready to proceed with the installation, click **Next**.

3. In the **Select Directory** panel, enter the location where Apache should be installed, or select a preexisting installation of Apache (Windchill 7.0 version provided by PTC) that the installer found.

In the case of a new installation, Apache can be installed in any directory; there are no preexisting directory requirements. Accept the default directory, or browse to create or select a different path.

- Windows default install directory: *C:\ptc\apache*
- UNIX default install directory: */opt/ptc/apache*

Select Directory

If you select...	Then	The next step is...
A new install directory	Apache will be installed in the directory you specify.	Go to Step 5.
An existing install directory	The Preserve or Overwrite Configuration Files window opens.	Go to Step 4.

4. The **Preserve or Overwrite Configuration Files** panel gives you the option to specify whether the existing Apache configuration files should be

overwritten, or retained and applied to a new version of the software. The configuration information that is retained includes the machine name for Apache, the Apache HTTP and HTTPS port numbers, the administrator's e-mail address, the Tomcat host name and port number, and configurations performed by other PTC product installers that occur after Apache is installed.

Preserve or Overwrite Configuration Files

If you select...	Then	The next step is...
Preserve Existing Configuration Files	The installer will install a new copy of the Apache application and retain the existing Apache configuration files. No configuration steps are performed.	Go to Step 8.
Overwrite Existing Configuration Files	The installer will install a new copy of the Apache application and replace the configuration files with the configuration data provided during this installation.	Go to Step 5.

5. The **Configure Host and Ports** panel, allows you to specify information about Apache that is needed for the Apache configuration files.

Configure Host and Ports

For this property...	Enter a value that meets this description...
DNS Registered Host Name	Defines a fully qualified host name of the machine on which Apache is being installed.
HTTP Port	Defines a port number to listen for HTTP requests - required. Accept the default of 80 or specify another value.
HTTPS Port	Defines a port number to listen for HTTPS requests - required. Accept the default of 443 or specify another value.

6. The **Configure Web Server Administration E-mail** panel allows you to specify an e-mail address of the Web server administrator to whom Apache will send notices.

Configure Web Server Administration E-mail

For this property...	Enter a value that meets this description...
Web Server Administrator E-mail	The e-mail address of the administrator to whom messages will be sent by Apache when Apache detects an error.

7. The **Configure Apache for Tomcat** panel allows you to specify the Tomcat variables needed to complete the Tomcat configuration.

Configure Apache for Tomcat

For this property...	Enter a value that meets this description...
Tomcat Host Name	Defines the machine name where Tomcat is installed. Default is localhost. When Apache and Tomcat are installed on the same machine, localhost is acceptable, and, in this case, a fully qualified DNS name is not required.
Tomcat Port	Defines the port number Tomcat listens for requests from the Web server.

8. The **Review Settings** panel lists the selections you specified for the installation. Verify the information is correct, and then click Install.
9. The **Installing** panel displays the installer progress as files are copied to the system and configurations are performed.
10. When the installation completes successfully, the **Installation Complete** panel displays the directory where Apache was installed. The installation log files are located in the <Windchill>/installer/logs directory. The log files for the installation are named:
 - Apache_InstallLog.xml
 - Apache_PtcInstall.log

If the installation fails, a panel is displayed that contains error messages and the name of the log files. Document the location and name of the log files. The log files can be helpful in assisting you in determining the cause of the failure. Be sure to include them when filing an installation support request. See the Installation Log Files section in the [About Installing Windchill Products](#) for more information.

Apache for HP-UX

The HP-UX Apache depot file is bundled on the Windchill Third Party Software CD. To install the HP-UX version of Apache, you will copy the depot file from the CD, install the depot file using the swinstall tool, and configure Apache. The depot file includes Apache, Tomcat, Webmin. The install process requires you to install all three products, which you should do. You will use the mod_jk.so file installed with the Tomcat installer, however, you will not use the full version of Tomcat installed with the installer, instead you will use the Tomcat supplied with PTC. The PTC supplied Tomcat is used because the Apache module that supports the communications with Tomcat is currently installed only by the depot when Tomcat is selected. Also, these instructions assume, you have already installed Tomcat.

Apache for HP-UX is a depot file that is installed using the HP-UX software install tool, swinstall. The tool installs Apache to the default /opt/hpws/apache directory. To perform the installation, you will execute swinstall as the root user. Following the installation, the file permissions will be set appropriately for the Windchill operating environment.

Apache is located on the Windchill Third Party Software CD. This CD includes other Windchill products for this release.

When performing the installation, the install user should be a non-root user.

1. Insert the Windchill Third Party Software CD.
2. Navigate to the HP-UX directory and open the directory.
3. There are two files in this directory. Copy these files to a directory on your system:
 - hpApacheOverlay.tar.gz
 - HP-UXWSATW-A100801-1100PA.depot
4. Change user to root.
5. Execute the swinstall tool by typing swinstall at the command prompt.

6. In the **Specify Source** panel, specify the install options. Click **OK**, when your entries are complete.

Specify Source

Select these options...	Specify these values...
Source Depot Type	Local Directory
Source Depot Path...	The fully qualified path to the depot file. For example: /mnt/disk1/install/temp/capps/Apache/HPUX/HPUXWSATW-A100801-100PA.depot.

7. In the **SD Install-Software Selection** panel, specify the products to install.
 - Mark Apache, Tomcat, and Webmin for install.

SD Install-Software Selection

Product Name	Marked
hpuxwsApache	Yes
hpuxwsTomcat	Yes
hpuxwsWebmin	Yes

8. The **Select Actions** panel presents a summary of the install options. Click **OK** to begin the installation.
9. In some cases, the following error message is displayed. You can ignore this message and continue with the installation by clicking **OK**.

Could not save session in the file "<file name>": The directory you specified does not exist or the file you specified is a directory.
10. The **Install Window** panel displays a summary of the installation process and status. Click **Done** to exit the installer.

The installation of Apache, Tomcat and Webmin is complete. The next set of instructions configure Apache for use with Windchill.

Configuring Apache

1. Gunzip and untar the hpApacheOverlay.tar.gz file into the directory where you installed Apache.

In Step 3 (previous set of Apache instructions), this file was copied from the HPUX directory on the Windchill Third Party Software CD to your system.

2. Open the `<Apache>/conf/http.conf` file in a text editor.
3. Navigate to the end of the file and add the following line entry:

```
Include conf/additions.conf
```

4. Save your changes and close the `http.conf` file.
5. Configure Apache for Tomcat.

To enable Apache to recognize Tomcat, the settings in the Apache `workers.properties` file must include the correct information for the Tomcat host name and port number. For your information, the default Tomcat host is `localhost` and the port number is `8009`.

- Modify the `<Apache>/conf/workers.properties` file to include the correct host name and port number for Tomcat.
6. By default, the swinstaller configures Apache to use port number 80. If port number 80 is not your convention, then you must modify Apache to use a different port number.
 - Edit the `<Apache>/conf/httpd.conf` file to reflect your port number. The port number is referenced in the following entries:
 - `ServerName <domain>:##`, where `##` is the port number.
 - `Listen ##`, where `##` is the port number.
 - Save your changes and close the file.

Starting and Stopping Apache

After you have installed Apache, it is not necessary to start it. In fact, PTC recommends that you complete the installation of as many Windchill applications as possible before starting Apache because Apache cannot be running during an installation in situations where there is an application and Apache interface. When it necessary, you will be given the instruction to start Apache.

Throughout the guide, you will occasionally be given an instruction to start Apache, in which case, you will be redirected to this section to perform these instructions to start and stop Apache.

Apache Start and Stop Files

The user that runs Apache on Windows should be the same user that installed Apache. On UNIX, the user can be the same as the install user, however, this user must have access permission to use port numbers that are less than 1024, if necessary.

To start Apache on Windows:

- Use the Apache shortcut.

This shortcut is created by the Info*Engine installer. You can optionally elect to create the start file shortcut during the Info*Engine installation.

- Run `<Apache>/bin/Apache.exe`.

To stop Apache on Windows:

- In the Apache console window, enter Ctrl/C.
- If Apache is configured as a Windows service, then stop the `<Apache>/bin/ApacheMonitor.exe` service by using the Windows Services control panel.

To start Apache on UNIX:

- From a command prompt, enter:

```
apachectl start
```

To stop Apache on UNIX:

- From a command prompt, enter:

```
apachectl stop
```

Alternatively, Apache can be configured as a Windows service or for HTTPS. Those instructions are provided in the Configuring Apache and Tomcat with Other Options chapter. These instructions, however, should be performed after the installation of the Windchill applications are complete as previously recommended.

Apache Log Files

The Apache log files can be helpful when troubleshooting your configuration. The log files are located in the `<Apache>/logs` directory.

Installation Summary

Tomcat and Apache are installed and configured, however, they are not running at this time. The installers do not start the servers and they must be started manually. It is not necessary to start the servers at this time, because in subsequent installations of the Windchill products additional configurations will occur and the servers must be stopped to enable the configurations to take effect. Rather than instructing you to stop and start the servers repeatedly, you will be given an instruction to start the servers at the time when they must be started.

6

Installing Java 2 Software Development Kit

Info*Engine supports Java 2 Software Development Kit (SDK). SDK should also include the Java JIT compiler.

Note: You cannot use Info*Engine with just the JRE; you must install the SDK.

Select a version of the SDK supported with this release. For more information about the products supported with this release, see the [Software Matrices](#) section.

Topic	Page
Installing Software Development Kit (SDK)	6-2

Installing Software Development Kit (SDK)

Perform the installation that is appropriate for your platform.

Windows and Solaris

To download a copy of SDK, use the following URL:

<http://www.javasoft.com>

Note: Sun may require additional operating system patches. Read the Sun documentation to determine if any patches are required and follow the instructions provided by Sun to apply the patches (available from the Web).

AIX

To download a copy of SDK, use the following URL:

<http://www.ibm.com/developerworks/java/jdk>

HP-UX

To download a copy of SDK, use the following URL:

<http://www.hp.com/products1/unix/java>

III

Aphelion Directory Section

7

Managing Aphelion Installation

This chapter describes the processes and lists the steps to install Aphelion 2002 Directory for use with this release. These Syntegra products are provided by PTC for your use with Info*Engine.

Topic	Page
Before You Begin.....	7-2
Managing Aphelion Installation.....	7-4

Before You Begin

PTC supports the Aphelion 2002 version released with Info*Engine 7.0. If you have legacy Aphelion data from prior releases that you would like to retain, that data can be imported into the Aphelion Directory.

- Installing Aphelion 2002:
 - Supports Aphelion 2002
 - Legacy Aphelion data or a new database

Before you begin to install Aphelion 2002, you must have:

- Consulted the Windchill software matrices for products and versions supported with this release:
<http://www.ptc.com/cs/doc/index.htm>
- Installed a Web browser.
- Installed a Web server - Aphelion only supports the Apache Web server. The Aphelion Administration Tools are Web-based. If you choose to use these tools, Apache must be installed. On Windows, the Apache configuration is performed during the installation, however, on UNIX, the configuration is manual.

Note: Apache is bundled on the same CD as Aphelion.

- Applied all vendor required operating system patches and other suggested installations. In particular, verify the HP-UX kernel configuration parameters are set correctly. For additional information, contact your hardware vendor for their recommendations.
- The licensing software for Aphelion 2002, FLEXlm, requires write access to the C: partition — specifically C:/flexlm. Verify the C: partition permissions are set to write access for the user installing Aphelion. Also, configuring the C: partition as VFAT prevents Aphelion from running.

Note: The Aphelion licensing does not conflict with other applications using FLEXlm.

- Verified adequate space is available to support an installation of Aphelion.

On Windows, the disk space required during installation and execution is approximately 250 megabytes. This does not include space required for a large Aphelion database or large log files.

On UNIX, reviewed the disk space requirements for a temporary directory. For additional information, see the [Check Disk Space Required for Installing and Running Aphelion on UNIX](#) section.

Other Important Information

- *Aphelion Directory 2002 Administration Guide*

A PDF version of this document is included as AphelionAdminGuide.pdf in the Docs directory on the CD_ROM.

- Information about the InstallAnywhere utility is available in the [About Installing Windchill Products](#) chapter.

Provides information about running InstallAnywhere on a Windows and UNIX system, how to launch the setup executable, and general behavior and characteristics of the installer.

- Troubleshooting

During the installation, log files are created and written to the Aphelion installlogs directory. The log files contain important information about the installation and can be useful when diagnosing an installation that fails. Consult these log files for clues into what could have caused the installation failure. If you file a support call, include these files in your report.

Check Disk Space Required for Installing and Running Aphelion on UNIX

Ensure that you have at least 550000 blocks of free space in the temporary directory defined on your system.

The installation program attempts to use the temporary directory when it installs Aphelion. If this directory does not have enough space, the program attempts to use the directory where the installation program resides. If you are installing from the CD, a message displays that indicates that directory does not exist or you do not have permission to write to the CD. If you are installing from another file system, the message indicates that the temporary directory on that system does not exist or you do not have permission to write to it. The message also requests that you set the IATEMPDIR environment variable as follows:

To set the variable enter one of the following commands at the UNIX command line prompt before running this installer again:

- for Bourne shell (sh), ksh, bash and zsh:

```
$ IATEMPDIR=/your/temp/space/directory
$ export IATEMPDIR
```

- for C shell (csh) and tcsh:

```
$ setenv IATEMPDIR /your/temp/space/directory
```

Note: You may need to be the root user to accomplish these tasks.

If you know that there is not enough space in the temporary directory or if you get the described error message, set the IATEMPDIR environment variable as described in the message and then run the installation program.

The installation process requires a minimum of 200 megabytes of free space in the partition used for installing and running. The default installation directory is /opt/ptc/aphelion. If the partition where /opt/ptc/aphelion resides does not have the required disk space available, you can choose to install the Aphelion Directory in a different location.

Note: Increase the disk space you will need if your Aphelion database will contain a large number of entries or you will allow large log files.

Managing Aphelion Installation

The instructions in this section will guide you through the processes of installing Aphelion 2002.

- Install Aphelion 2002
 - Data Input Needed for Installation
 - Steps to Install Aphelion 2002

Data Needed to Install Aphelion 2002

During the installation, you are required to provide the installer with data input. PTC recommends, that prior to initiating the installation, you predetermine the data values to allow the installation to proceed without interruption. You are prompted to provide the following data:

- Administrator distinguished name.
 - Default is cn=manager.
- Port number for the Aphelion server.
 - Default is 389.
- LDIF context structure.
 - Default is blank which means all the LDAP entries reside on the Aphelion server.
- On Windows, an unassigned drive letter.
 - Default is R.
- On Windows, the administrator name and Administration group name.
 - Default user is the login user name.
 - Default group is Administrators.
- The type and installation location of the Web server.
 - Options are Apache or none.

Steps to Install Aphelion 2002

Complete the following steps:

1. Become the install user:
 - For UNIX, install as the root user.
 - For Windows, install as the user with write permission to the c: partition.
2. Install a new version of Aphelion.

These sections include the instructions to save legacy Aphelion data, install new Aphelion, and to restore legacy Aphelion data for the new installation.

 - On Windows: [Installing Aphelion 2002 on Windows](#)
 - On UNIX: [Installing Aphelion 2002 on UNIX](#)
3. Configure the Web browser for the Aphelion Web tools.
 - [Configure Web Browser for Web Tools](#)
4. Configure the Web server for the Aphelion Web tools.
 - [Manually Configuring Support for Aphelion Administration Web Tools](#)
5. Establish a naming context.
 - This step is required if you specified a naming context value when you installed Aphelion. This configuration must be completed before you install Info*Engine:
 - [Establishing a Naming Context](#)
6. Aphelion is now installed.

At this time, the directory is established but empty and the LDAP browser and the Web tools are configured for use with the directory. The LDAP directory entries are added during the Info*Engine installation and additionally through the Info*Engine administration tools.

Other Aphelion Support Information

The remainder of the Aphelion Directory section contains information about installing an additional LDAP browser, managing Aphelion, instructions on starting and stopping the Aphelion server, and how to uninstall Aphelion. This information is available in the following chapters:

- [Installing An Additional LDAP Browser](#)
- [Managing the Aphelion Directory](#)
- [Starting and Stopping the Aphelion Directory](#)
- [Uninstalling Aphelion](#)

8

Installing Aphelion 2002 on Windows

This chapter describes how to install the Aphelion 2002 Directory on a Windows platform.

Aphelion is installed using the InstallAnywhere utility. For information about using InstallAnywhere, see the [About Installing Windchill Products](#) appendix.

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Before You Begin.....	8-2
The Installation Process.....	8-3
Exporting Existing LDAP Directory Content	8-3
Installing Aphelion.....	8-4
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Test Aphelion Directory Installation.....	8-8
Installation Summary	8-9
Naming Context Example	8-9

Before You Begin

PTC provides one Aphelion installation program that installs the following:

- Aphelion 2002 Directory.
- An LDAP browser that you can use to view your directory structure.
- Administration Web tools for managing the directory in a complex environment.

To install Aphelion on Windows, you should be the user that belongs to the Windows Administrators group. If you install Aphelion as a domain user rather than a local user, the setup required to access the directory through the Aphelion Administration Web tools can only be partially done during the installation, thereafter, the remaining configuration would be completed manually after the installation finishes.

This installer will automatically configure the Aphelion Administrator Web tools for the Apache Web server. If Apache is your Web server, it is recommended that you install Apache prior to beginning this installation to take advantage of the automated configurations. In all other cases, the Web tool configuration would be performed manually and those instructions are located in the [Manually Configuring Support for Aphelion Administration Web Tools](#) chapter.

During the installation, the installer will prompt you for the following information. The *Aphelion Directory 2002 Administration Guide* provides detailed descriptions about the variables you will provide the installer. Refer to this guide if additional information is needed.

- A distinguished name for the Aphelion administrator - default is cn=Manager.
- The Aphelion administrator's password.
- A port number to assign to the Aphelion server - default is 389.
- An Aphelion naming context (optional).

If you are installing an LDAP directory exclusively for Info*Engine and other Windchill software, you should leave the naming context field blank.

Otherwise, if you chose to provide a naming context value, see the examples provided in the Naming Context Example section of this chapter and information about contexts in the *Aphelion Directory 2002.1 Administration Guide* or other LDAP directory documentation.

The Aphelion administration guide is included in the Docs directory on the Windchill Third Party Software CD:

- <CD-ROM>/Aphelion/Docs/AphelionAdminGuide.pdf
- An unmapped drive letter Aphelion will use as a virtual drive - default is R.
- The Windows Administrator's user name and group name.

- If Apache is your Web server, the Apache installation directory.

The Installation Process

If you have completed the prerequisite tasks and gathered the recommended data, you are ready to begin the installation.

If you currently have Aphelion installed and you want to retain the contents of the LDAP directory, then the install scenario is as follows: save the directory by exporting the contents, install a new version of Aphelion, and import the saved directory contents. Otherwise, just install a new version of Aphelion.

Complete the following steps to install Aphelion:

1. Exporting an Existing LDAP Directory
 - This is an optional step and should be performed to save an existing Aphelion version 6.0 (or later) directory before installing a new version of Aphelion.
2. Installing Aphelion
3. Import the Saved LDAP Directory
 - This is an optional step and should be performed if you exported an existing Aphelion database as described in Step 1.
4. Test Aphelion Directory Installation
5. Installation Summary

Exporting Existing LDAP Directory Content

If you have an existing Aphelion LDAP directory (that meets the criteria for the Aphelion version supported with this release), and you would like to transfer that data to the new Aphelion LDAP directory, then perform these instructions to export (backup) your data. Otherwise, skip this step and proceed to the step to install Aphelion.

1. From the **Control Panel**, double-click **Services**.
2. Select **Aphelion Services** and click **Stop**.
3. Open a command shell and make the Aphelion mapped drive active:

R:

4. Change directory by entering the following:

```
cd usr\var\lde\PTCLdap
```

5. Enter the following command:

```
\usr\sbin\lde\export.exe -f PTCLdap_lde.conf
```

6. Open the Aphelion lde.stat file:

```
R:\usr\var\lde\PTCLdap\PTCLdap_logs\lde.stat
```

7. Using the following lde.stat file entry as an example, verify that the export completed properly:

```
002/04/23.10:03:22.093-0600 1 (84fd0888/1624)
/usr/var/lde/PTCLdap/PTCLdap_lde.at.conf: line 192:
attribute "changes" redefined

2002/04/23.10:03:22.218-0600 1 (84fd0888/1624) Export
started

2002/04/23.10:03:22.296-0600 1 (84fd0888/1624) Export of all
requested databases completed normally.
```

8. Copy the exported root.ldif file into a safe directory.:

```
R:\usr\var\lde\PTCLdap\PTCLdap_database
```

If the directory you are backing up does not have an empty naming context, refer to the *Aphelion User's Guide* and compare the files.

9. Save your configuration information (for example, cn=Manager). This should include information such as the principal, password, installation location, and port number.
10. Uninstall Aphelion.
 - Use the Windows Add/Remove Programs function to remove Aphelion Directory.

Proceed to the next step to install a new version of Aphelion.

Installing Aphelion

Aphelion server software is located on the Windchill Third Party Software CD. This CD includes other Windchill products for this release.

An installation executable is available for each platform and it is distinguished as *<platform>* in the file path.

1. Insert the CD and run *<CD-ROM>\Aphelion\<platform>\setup.exe*.
2. When the installer begins, the first window that opens is **Before You Begin**. This section summarizes the preinstallation requirements, provides a link to the software matrices, and a reference to the *Aphelion Directory 2002 Administration Guide*.

When you are ready to proceed with the installation, click **Next**.

3. In the **Specify Aphelion Directory** panel, enter the location where Aphelion should be installed.

Aphelion can be installed in any directory; there are no preexisting directory requirements. Accept the default directory displayed, or click **Browse** to create or select a different path.

4. The **Define the Aphelion Administrative Properties** panel lists the administrative property fields used to access the Aphelion directory. The following table describes those properties:

Define Aphelion Administrative Properties

For this property...	Enter a value that meets this description...
Aphelion Administrator Distinguished Name	<p>Defines the distinguished name for the Aphelion administrator. The setup program creates the directory using the distinguished name that you specify. A suggested name of cn=Manager is provided. You can edit this field to change the suggested name.</p> <p>Note: If you plan on specifying a naming context value, you must also include the context in the distinguished name for the Aphelion administrator. For details, see the next step.</p>
Aphelion Administrator Password	Defines the password for the Aphelion administrator.

5. The **Define Aphelion Server Properties** panel list the properties used when operating the Aphelion server. The following table describes those properties:

Define Aphelion Server Properties

For this property...	Enter a value that meets this description...
Aphelion Server Port Number	Defines the port number that the Aphelion Directory will use. A suggested port of 389 is provided.
Aphelion Naming Context	Defines the distinguished name that is used for the context created by the installation program. If you are installing an LDAP directory exclusively for Info*Engine and other Windchill software, you should leave the Aphelion Naming context field blank. Otherwise, see the Naming Context Example section and the <i>Aphelion Directory 2002 Administration Guide</i> for additional information.
Unmapped Drive Letter	Defines the drive letter that the Aphelion Directory will use as its virtual drive. The default is R . Note: The drive letter you specify must not already be assigned on your system.
Windows Administrator User Name	Defines the user name for the Windows administrator.
Windows Administrator Group Name	Defines the group name for the Windows administrator.

6. The **Configure Web Server for Aphelion** panel allows you to select the option to perform the Aphelion Administration Web tool configuration for Apache.

The Aphelion administrative Web tool is a browser-based tool that allows you to configure and administer the Aphelion Directory components. The installer can perform the Aphelion and Apache configuration for you, otherwise, the configuration must be performed manually.

Note: Aphelion only supports Apache.

Configure Web Server for Aphelion

If you select...	Then	The next step is...
Apache	The installer will automatically configure the Aphelion Web tools for Apache.	Step 7.
None	No automated configuration takes place. You need to follow the manual configurations described in the Manually Configuring Aphelion Administration Web Tools chapter. You can perform those instructions after the installation completes.	Step 8.

7. The **Apache Installation Directory** panel prompts you for directory location where Apache is installed, for example, C:\ptc\Apache.
8. The **Pre-Installation Summary** panel lists the selections you specified for the installation. Verify the information is correct, and then click **Install**.
9. The **Installing** panel displays the installer progress as files are copied to the system and configurations are performed.
10. When the installation completes successfully, the **Installation Complete** panel displays the directory where Aphelion was installed. The installation log files are located in the <Windchill>/installer/logs directory. The log files for the installation are named:
 - Aphelion_InstallLog.xml
 - Aphelion_PtcInstall.log

If the installation fails, a panel is displayed that contains error messages and the name of the log files. Document the location and name of the log files. The log files can be helpful in assisting you in determining the cause of the failure. Be sure to include them when filing an installation support request. See the Installation Log Files section in the [About Installing Windchill Products](#) for more information.

At the successful completion of the installation, the Aphelion directory is running and you can proceed to the next step to import the legacy LDAP data.

Import Saved Content of LDAP Directory

If you saved the contents of an existing LDAP directory (Step 1), then perform these instructions to import the your legacy LDAP data. Otherwise, skip this step and continue to the next step to test your installation.

1. From the **Control Panel**, double-click **Services**.
2. Select **Aphelion Services** and click **Stop**.

3. Open a command shell and make the Aphelion mapped drive active:

```
R:
```

4. Copy the saved version of the exported root.ldif file to the following:

```
R:\usr\var\lde\PTCLdap\PTCLdap_database\
```

5. Change the directory by entering the following:

```
cd \usr\var\lde\PTCLdap
```

6. Enter the following:

```
\usr\sbin\lde\import.exe -f PTCLdap_lde.conf
```

7. Using the following lde.stat file entry as an example, verify that the import completed properly:

```
2002/04/23.10:03:22.093-0600 1 (84fd0888/1624)
/usr/var/lde/PTCLdap/PTCLdap_lde.at.conf: line 192:
attribute "changes" redefined

2002/04/23.10:03:22.218-0600 1 (84fd0888/1624) Export
started

2002/04/23.10:03:22.296-0600 1 (84fd0888/1624) Export of all
requested databases completed normally.

2002/04/23.10:07:03.718-0600 1 (84fd0888/2004)
/usr/var/lde/PTCLdap/PTCLdap_lde.at.conf: line 192:
attribute "changes" redefined

2002/04/23.10:07:03.796-0600 1 (84fd0888/2004) Import
started

2002/04/23.10:07:04.062-0600 1 (84fd0888/2004) Restoring the
database: /usr/var/lde/PTCLdap/PTCLdap_database/root.lde.db
from a previous backup from LDE: LDE-PTCLdap on Host:
bonzi2k.

2002/04/23.10:07:04.328-0600 1 (84fd0888/2004) storeIDmap:
unable to unlink
/usr/var/lde/PTCLdap/PTCLdap_database/root.lde.id: No error

2002/04/23.10:07:04.359-0600 1 (84fd0888/2004) Import of
database: /usr/var/lde/PTCLdap/PTCLdap_database/root.lde.db
completed successfully, 80 entries imported. Now starting to
build indexes.

2002/04/23.10:07:07.828-0600 1 (84fd0888/2004) Import: Index
file building completed successfully.
```

Proceed to the next step to test the Aphelion installation.

Test Aphelion Directory Installation

Use the following steps to test your Aphelion Directory installation:

1. Select **START > PROGRAMS > LDAP BROWSER**.

2. The LDAP browser starts and displays the **Connect** dialog box.
3. To connect to the local directory, select **localhost** and click **Connect**.

Or, to connect to another directory, select the corresponding name in the list.

If your connection is successful, the Aphelion Directory is installed correctly.

Installation Summary

Aphelion is now installed and working on Windows, however, the Aphelion directory is empty. It will be populated during the Info*Engine installation phase.

To continue, return to the next step, [Configure Web Browser for Web Tools](#), in the Managing Aphelion Upgrade/Installation chapter for further instructions.

Naming Context Example

The database context defined here identifies the section of the LDAP directory that is to be stored on the directory host. If you have a good understanding of LDAP directories and want to define the context for LDAP entries that are stored on this host, you can do so. For example, assume that you have created a company-wide LDAP directory that directory has the following tree structure:

```
c=US
|
o=myCompany
|
l=Pacific
```

Then using this installation, you can add a context under l=Pacific for Info*Engine LDAP entries. If you name the subtree entry ou=pIE, then you would enter the context as:

ou=pIE,l=Pacific,o=myCompany,c=US

In another example, assume that you want the new context to include the following general domain structure with the subtree ou=pIE entry:

```
dc=com
|
dc=myCompany
|
dc=myLocation
|
dc=myHost
```

Then, you would enter the context as:

dc=myHost,dc=myLocation,dc=myCompany,dc=com,ou=pIE,
l=Pacific,o=myCompnay,c=US

Note: The base distinguished name you enter when you set the LDAP properties during the Info*Engine installation must include the context name specified during the Aphelion installation (if you set one).

In the examples shown, the installation program does not connect the context it creates to the company-wide LDAP directory. If you want them connected, you would use Aphelion Web tools to connect them after completing the installation.

For additional information about contexts, see the *Aphelion Directory 2002 Administration Guide* or other LDAP directory documentation.

9

Installing Aphelion 2002 on UNIX

This chapter describes how to install the Aphelion 2002 Directory on a UNIX platform.

Aphelion is installed using the Install Anywhere utility. For information about using Install Anywhere, see the [About Installing Windchill Products](#) chapter.

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Exporting an Existing LDAP Directory	9-3
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Naming Context Example	9-7

Before You Begin

PTC provides one Aphelion installation program that installs the following:

- Aphelion 2002 Directory.
- An LDAP browser that you can use to view your directory structure.
- Administration Web tools for managing the directory in a complex environment.

To install Aphelion on UNIX, you should be the user root. If you install Aphelion as a domain user rather than a local user, the setup required to access the directory through the Aphelion Administration Web tools can only be partially done during the installation, thereafter, the remaining configuration would be completed manually after the installation finishes.

This installer will automatically configure the Aphelion Administrator Web tools for the Apache Web server. If Apache is your Web server, it is recommended that you install Apache prior to beginning this installation to take advantage of the automated configurations. In all other cases, the Web tool configuration would be performed manually and those instructions are located in the [Manually Configuring Support for Aphelion Administration Web Tools](#) chapter.

During the installation, the installer will prompt you for the following information. The *Aphelion Directory 2002 Administration Guide* provides detailed descriptions about the variables you will provide the installer. Refer to this guide if additional information is needed.

- A distinguished name for the Aphelion administrator - default is cn=Manager.
- The Aphelion administrator's password.
- A port number to assign to the Aphelion server - default is 389.
- An Aphelion naming context (optional).

If you are installing an LDAP directory exclusively for Info*Engine and other Windchill software, you should leave the naming context field blank.

Otherwise, if you chose to provide a naming context value, see the examples provided in the Naming Context Example section of this chapter and information about contexts in the *Aphelion Directory 2002.1 Administration Guide* or other LDAP directory documentation.

The Aphelion administration guide is included in the Docs directory on the Windchill Third Party Software CD:

- <CD-ROM>\AphelionUnix\Docs\AphelionAdminGuide.pdf

The Installation Process

If you have completed the prerequisite tasks and gathered the recommended data, you are ready to begin the installation.

If you currently have Aphelion installed and you want to retain the contents of the LDAP directory, then the install scenario is as follows: save the directory by exporting the contents, install a new version of Aphelion, and import the saved directory contents. Otherwise, just install a new version of Aphelion.

Complete the following steps to install Aphelion:

1. Exporting an Existing LDAP Directory
 - This is an optional step and should be performed to save an existing Aphelion version 6.0 (or later) directory before installing a new version of Aphelion.
2. Installing Aphelion
3. Import the Saved LDAP Directory
 - This is an optional step and should be performed if you exported an existing Aphelion database as described in Step 1.
4. Test Aphelion Directory Installation
5. Installation Summary

Exporting an Existing LDAP Directory

If you have an existing Aphelion LDAP directory (that meets the criteria for the Aphelion version supported with this release), and you would like to transfer that data to the new Aphelion LDAP directory, then perform these instructions to export (backup) your data. Otherwise, skip this step and proceed to the step to install Aphelion.

Note: In some instances on UNIX systems, the file size limit for the Aphelion `lde.stat` and `lde.log` files can be exceeded, causing the Aphelion LDAP services to stop. This situation can occur during high volume updates (for example, migrations) to the LDAP database. Before initiating a high volume update process, ensure that the files are located on a disk partition that has sufficient free space to hold the files. Also, check the file sizes and either archive or delete the files as necessary. The log files are located in the `/usr/var/lde/var/PTCLdap/PTCLdap.logs/` directory. For additional information about setting log file parameters, refer to the Aphelion documentation.

1. Stop Aphelion using the appropriate script for your platform.
2. Verify that `/opt/lde/sbin` is in the path environment variable.
3. Change the directory by entering the following:

```
cd /opt/lde/var/PTCLdap
```

4. Enter the following command:

```
/opt/lde/sbin/export -f ./PTCLdap_lde.conf
```

5. Open the Aphelion lde.stat file:

```
/opt/lde/var/PTCLdap/PTCLdap_logs/lde.stat
```

6. Using the following lde.stat file entry as an example, verify that the export completed properly:

```
002/04/23.10:03:22.093-0600 1 (84fd0888/1624)
/usr/var/lde/PTCLdap/PTCLdap_lde.at.conf: line 192:
attribute "changes" redefined

2002/04/23.10:03:22.218-0600 1 (84fd0888/1624) Export
started

2002/04/23.10:03:22.296-0600 1 (84fd0888/1624) Export of all
requested databases completed normally.
```

7. Copy the exported root.ldif file into a safe directory.

```
/opt/lde/var/PTCLdap/PTCLdap_database
```

If the directory you are backing up does not have an empty naming context, refer to the *Aphelion User's Guide* and compare the files.

8. Save your configuration information (for example, cn=Manager). This should include information such as the principal, password, installation location, and port number.
9. Uninstall Aphelion.

- Execute UninstallAphelion.bin from the following location:

```
/opt/lde/UninstallerData/
```

Proceed to the next step to install the new version of Aphelion.

Installing Aphelion

Aphelion server software is located on the Windchill Third Party Software CD. This CD includes other Windchill products for this release.

An installation executable is available for each platform and it is distinguished as *<platform>* in the file path.

1. Insert the CD and run *<CD-ROM>/AphelionUnix/<platform>/setup.sh*.
2. When the installer begins, the first window that opens is **Before You Begin**. This section summarizes the preinstallation requirements, provides a link to the software matrices, and a reference to the *Aphelion Directory 2002 Administration Guide*.

When you are ready to proceed with the installation, click **Next**.

3. In the **Specify Aphelion Directory** panel, enter the location where Aphelion should be installed.

Aphelion can be installed in any directory; there are no preexisting directory requirements. Accept the default directory displayed, or click **Browse** to create or select a different path.

4. The **Define Aphelion Server Properties** panel list the properties used when operating the Aphelion server. The following table describes those properties:

Define Aphelion Server Properties

For this property...	Enter a value that meets this description...
Aphelion Server Port Number	Defines the port number that the Aphelion Directory will use. A suggested port of 389 is provided.
Aphelion Naming Context	Defines the distinguished name that is used for the context created by the installation program. If you are installing an LDAP directory exclusively for Info*Engine and other Windchill software, you should leave the Aphelion Naming context field blank. Otherwise, see the Naming Context Example section and the <i>Aphelion Directory 2002 Administration Guide</i> for additional information.

5. The **Pre-Installation Summary** panel lists the selections you specified for the installation. Verify the information is correct, and then click **Install**.
6. The **Installing** panel displays the installer progress as files are copied to the system and configurations are performed.
7. When the installation completes successfully, the **Installation Complete** panel displays the directory where Aphelion was installed. The installation log files are located in the <Windchill>/installer/logs directory. The log files for the installation are named:
 - Aphelion_InstallLog.xml
 - Aphelion_PtcInstall.log

If the installation fails, a panel is displayed that contains error messages and the name of the log files. Document the location and name of the log files. The log files can be helpful in assisting you in determining the cause of the failure. Be sure to include them when filing an installation support request. See the Installation Log Files section in the [About Installing Windchill Products](#) for more information.

At the successful completion of the installation, the Aphelion directory is running and you can proceed to the next step to import the legacy LDAP data.

Proceed to the next step to import the legacy LDAP data.

Update MANPATH Environment Variable

To have access to Aphelion man pages, you need to update your MANPATH environment variable to include the symbolic link to where Aphelion man pages are installed. The link is `/opt/lde/man`.

Import the LDAP Database

If you saved the contents of an existing LDAP directory (Step 1), then perform these instructions to import the your legacy LDAP data. Otherwise, skip this step and continue to the next step to test your installation.

1. Stop Aphelion using the appropriate script for your platform.
2. Copy the saved version of the exported `root.ldif` file to the following:

```
/opt/lde/var/PTCLdap/PTCLdap_database/
```

3. Change the directory by entering the following:

```
cd /opt/lde/var/PTCLdap
```

4. Enter the following:

```
/opt/lde/sbin/import -f ./PTCLdap_lde.conf
```

5. Using the following `lde.stat` file entry as an example, verify that the import completed properly:

```
2002/04/23.10:03:22.093-0600 1 (84fd0888/1624)
/usr/var/lde/PTCLdap/PTCLdap_lde.at.conf: line 192:
attribute "changes" redefined

2002/04/23.10:03:22.218-0600 1 (84fd0888/1624) Export
started

2002/04/23.10:03:22.296-0600 1 (84fd0888/1624) Export of all
requested databases completed normally.

2002/04/23.10:07:03.718-0600 1 (84fd0888/2004)
/usr/var/lde/PTCLdap/PTCLdap_lde.at.conf: line 192:
attribute "changes" redefined

2002/04/23.10:07:03.796-0600 1 (84fd0888/2004) Import
started

2002/04/23.10:07:04.062-0600 1 (84fd0888/2004) Restoring
the database:
/usr/var/lde/PTCLdap/PTCLdap_database/root.lde.db from a
previous backup from LDE: LDE-PTCLdap on Host: bonzi2k.

2002/04/23.10:07:04.328-0600 1 (84fd0888/2004) storeIDmap:
unable to unlink
/usr/var/lde/PTCLdap/PTCLdap_database/root.lde.id: No error

2002/04/23.10:07:04.359-0600 1 (84fd0888/2004) Import of
database: /usr/var/lde/PTCLdap/PTCLdap_database/root.lde.db
completed successfully, 80 entries imported. Now starting
to build indexes.
```

Proceed to the next step to test the Aphelion installation.

Test Aphelion Directory Installation

Use the following steps to test your Aphelion Directory installation:

1. At a UNIX command prompt, enter the following:

```
/ <aphelion_dir>/LDAPBROWSER/ldapbrowser.sh
```

where <aphelion_dir> is the directory where Aphelion is installed.

2. The LDAP browser starts and displays the **Connect** dialog box.
3. To connect to the local directory, select **localhost** and click **Connect**.

Or, to connect to another directory, select the corresponding name in the list.

If your connection is successful, the Aphelion Directory is installed correctly.

Installation Summary

Aphelion is now installed and working on UNIX, however, the Aphelion directory is empty. It will be populated during the Info*Engine installation phase.

To continue, return to the next step, [Configure Web Browser for Web Tools](#), in the Managing Aphelion Upgrade/Installation chapter for further instructions.

Naming Context Example

The database context defined here identifies the section of the LDAP directory that is to be stored on the directory host. If you have a good understanding of LDAP directories and want to define the context for LDAP entries that are stored on this host, you can do so. For example, assume that you have created a company-wide LDAP directory that directory has the following tree structure:

```
c=US
|
o=myCompany
|
l=Pacific
```

Then using this installation, you can add a context under l=Pacific for Info*Engine LDAP entries. If you name the subtree entry ou=pIE, then you would enter the context as:

```
ou=pIE,l=Pacific,o=myCompany,c=US
```

In another example, assume that you want the new context to include the following general domain structure with the subtree ou=pIE entry:

```
dc=com
|
dc=myCompany
|
dc=myLocation
|
dc=myHost
```

Then, you would enter the context as:

```
dc=myHost,dc=myLocation,dc=myCompany,dc=com,ou=pIE,
l=Pacific,o=myCompnay,c=US
```

Note: The base distinguished name you enter when you set the LDAP properties during the Info*Engine installation must include the context name specified during the Aphelion installation (if you set one).

In the examples shown, the installation program does not connect the context it creates to the company-wide LDAP directory. If you want them connected, you would use Aphelion Web tools to connect them after completing the installation.

For additional information about contexts, see the *Aphelion Directory 2002 Administration Guide* or other LDAP directory documentation.

10

Configuring Web Browser for Web Tools

This chapter describes how to configure the Web browser to support the Aphelion administration Web tools.

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Configuration Summary	10-2

Configure Web Browser for Web Tools

Web browsers used for the Aphelion Administration Web tools must be configured such that a fresh copy of the Web page is obtained from the server at each reference. Failure to do so will lead to unpredictable results.

Use one of the following procedures to configure your Web browser:

Internet Explorer

1. Select **View > Internet Options**.
2. Select the **General** tab on the **Internet Options** dialog box.
3. Click **Settings** in the Temporary Internet Files frame.
4. Select **Every visit to the page**.
5. Click **OK** on the **Settings** dialog box.
6. Click **OK** on the **Internet Options** dialog box.

Mozilla and Netscape

1. Select **Edit > Preferences**.
2. Click **Advanced**.
3. Click **Cache**.
4. Select **Every time**.
5. Click **OK**.

Configuration Summary

The Web browser configurations are now complete.

To continue, return to the next step, Configure the Web server for the Aphelion Web tools, in the Managing Aphelion Upgrade/Installation chapter for further instructions.

11

Manually Configuring Support for Aphelion Administration Web Tools

This chapter describes how to manually configure Apache for use with the Aphelion Administration Web tools.

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Setting Up the Administration Web Tools for Use By a Windows Domain User... 11-2	
Manually Configure Apache for Use with Aphelion Directory Web Tools	11-3
Configuration Summary	11-5

Manually Configure the Administration Web Tools

Overview

The following sections explain how to complete the Web tools setup if you installed the Aphelion Directory as a domain user, how to start and add users for the Aphelion Administration Web tools, and describe where the directory option settings are located.

Complete these instructions to:

- Setup the Web tools for use by a Windows domain user.
- Manually configure Apache for use with the Aphelion Web tools.

To continue, return to the next step, Establishing a naming context in the Planning Aphelion Installation chapter for further instructions.

Setting Up the Administration Web Tools for Use By a Windows Domain User

On a Windows system, if you installed the Aphelion Directory as a domain user rather than a local user, the setup required for accessing the directory through the Aphelion Administration Web tools was only partially done for you during the installation.

Use the following steps to complete the set up for a domain user:

1. Determine the domain name of the user that you used to install the Aphelion Directory.
2. Edit the file <aphelion_dir>/opt/lde/config/cgi/PTCLdap.lde, where <aphelion_dir> is the directory where Aphelion is installed.
3. Add the domain name and a backslash (\) before the user name in the **masterAdmins** line.

For example, if the domain name is "division12" and the user name is "user555", then the edited file contains the following lines:

```
confFile /usr/var/lde/PTCLdap/PTCLdap_lde.conf
masterAdmins (division12\user555)
trustedUsers ()
trustedGroups (administrators)
processList (LDE-PTCLdap!CDSM_public!CDSM_protected)
runDirectory /usr/var/lde/PTCLdap
startMethod auto
trustedClients ()
```

4. Save your changes and close the PTCLdap.lde file.

Manually Configure Apache for Use with Aphelion Directory Web Tools

If you installed the Aphelion Directory on UNIX or if you selected **None** as the Web server type on the **Aphelion Web Tools Configuration** window during a Windows installation, you must manually configure the Aphelion Administration Web tools.

Manually Configuring with the Apache Web Server

Use the following instructions to configure an Apache Web sever so that you can use the Aphelion Administration Web tools. The Apache Web sever must already be installed on either a UNIX or Windows platform.

Note: In the following discussion, the text <install> will be used to reference the location in which the Apache Web server has been installed on your system.

1. Edit the Apache configuration file to make the following changes. This file, named httpd.conf, resides in the <install>/conf directory.

2. Locate the line beginning with **Listen**.

Change the port number in this line to the desired port, if you want the Apache Web server to listen on a different port. (The default value for this field is 80.)

3. Locate the line beginning with **DirectoryIndex**, and add **index.htm** to the end of this line:

```
DirectoryIndex index.html index.htm
```

4. Locate the line beginning with **HostnameLookups**, and change the value of this field to be **on**. (The default value of this field is off.)

Setting HostnameLookups to on causes the Web server to do a lookup on the connecting client and then set the REMOTE_HOST environment variable. The lde tools use this variable when performing pattern matching against hostname for trusted clients.

You may leave HostnameLookups off if your site does not have dns running or does not want to perform the reverse lookup. In this case, add the following line to the /opt/lde/config/cgi/ldeConfig.cf file:

```
dns no
```

5. Locate the line beginning with **Alias** in the **Aliases** section, and add the following lines after it. In the following UNIX example, the assumption is that Aphelion was installed in the /opt directory.

UNIX:

```
Alias /templates-lde/ "/opt/lde/config/templates/"
Alias /aphelion/ "/opt/lde/config/templates/en-us/"
Alias /aphelion-manual/ "/opt/lde/var/HTTP/LDE/documentation/manuals/"
```

Windows:

```
Alias /templates-lde/ "<virtual drive>:/opt/lde/config/templates/"
Alias /aphelion/ "<virtual drive>:/opt/lde/config/templates/en-us/"
Alias /aphelion-manual/ "<virtual drive>:/var/HTTP/LDE/
documentation/manuals/"
```

6. Locate the line beginning with **ScriptAlias** and add the following line after it:

UNIX:

```
ScriptAlias /cgi-lde/ "/opt/lde/config/cgi/"
```

Windows:

```
ScriptAlias /cgi-lde/ "<virtual drive>:/opt/lde/config/cgi/"
```

7. Check user settings on HP-UX and Windows systems.

HP-UX:

Locate the line beginning with **User**, and change the user name to the user ID you want to use when administering the Apache Web server.

Windows:

Change the permissions on the EXE files located in <virtual drive>:/opt/lde/config/cgi/ to the group to which user belongs.

8. Save your changes to httpd.conf.
9. On UNIX systems, log on as the root user and perform the following:
 - a. Locate the line beginning with **Group** and note the group listed on that line.
 - b. Change Web tool files to the group identified in step 8a by entering the following commands at the command line prompt:

```
chgrp <group_name> /opt/lde/config/cgi/aphelionMenu
chgrp <group_name> /opt/lde/config/cgi/*Config
```

10. Stop and restart the Apache Web server.

For instructions on starting the Aphelion Administration Web tools, see [Starting the Administration Web Tools](#) in the Managing the Aphelion Directory chapter.

Configuration Summary

The Apache server configurations are now complete.

To continue, return to the next step, Establish a naming context, in the Managing Aphelion Upgrade/Installation chapter for further instructions.

12

Establishing a Naming Context

This chapter describes how to configure the naming context if during the Aphelion install a naming context was specified. By default, a naming context is not required when you install Aphelion.

Topic	Page
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Configuration Summary	12-2

Establishing a Naming Context

If you entered a naming context for the Aphelion properties during the Aphelion Directory installation, complete the following steps before you install Info*Engine:

1. Create an LDIF file that matches the context prefix. For example, if the naming context specified is "dc=myLocation,dc=myCompany", then create a file with the following LDIF text:

```
dn: dc=myCompany
dc: myCompany
objectClass: top
objectClass: domain

dn: dc=myLocation,dc=myCompany
dc: myLocation
objectClass: top
objectClass: domain
```

If you specified other prefix elements in the naming context distinguished name that was entered during the installation, adjust the LDIF file so that the file contains the corresponding "objectClass" for the element and the correct "dn" and "dc" of each element.

2. Log in to the LDAP browser that was installed with Aphelion using administrator distinguished name. This name includes the naming context. For example, if the naming context specified is "dc=myLocation,dc=myCompany", then administrator name includes these elements as in "cn=Manager,dc=myLocation,dc=myCompany".

3. Select the naming context entry.

Note: You can ignore the failure message displayed in the status field.

4. Import the LDIF file into the installed Aphelion Directory.

Importing the file causes the LDAP directory to do the necessary internal processing to set up the correct database structure for the specified naming context.

5. Verify the correct operation of the LDAP directory by adding an LDAP entry using the LDAP browser.

Configuration Summary

The steps to establish a naming context are complete.

To continue, return to the next step, Aphelion is now installed, in the Managing Aphelion Upgrade/Installation chapter for further instructions.

13

Installing An Additional LDAP Browser

This chapter describes how to install an additional LDAP browser on a host other than where Aphelion Directory is installed.

Topic	Page
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Checking Requirements	13-2
Installing an LDAP Browser on an Alternate System.....	13-2
Configuring the LDAP Browser for a Specific LDAP Server	13-3

Installing an LDAP Browser Overview

The Aphelion Directory installation installs and configures an LDAP browser on the host where the directory is installed. If you want to install an LDAP browser on another host, you can use the instructions that follow.

In the Aphelion/SyntegraLDAPBrowser directory on the Info*Engine CD, you can find the files to use to install a Windows or UNIX LDAP browser.

After installing and configuring the browser, you can use the browser from a remote host to view the Aphelion Directory.

There are three parts to installing and configuring the LDAP browser that is provided on the Info*Engine CD. To install and configure the LDAP browser, complete all parts:

- Check hardware and software requirements.
- Install the LDAP browser.
- Configure the LDAP browser for a specific LDAP server.

Checking Requirements

The LDAP browser can be installed on any of the supported platforms described in the Windchill Software Matrix:

The LDAP browser requires that the Java 1.2.2 runtime environment (JRE) or later is installed on the same platform.

LDAP browser requires a minimum of 800 Kilobytes of disk space, not including the space required for the JRE.

Installing an LDAP Browser on an Alternate System

Note: An LDAP browser is automatically installed on your system when you install the Aphelion Directory. You do not need to install another LDAP browser. However, you can install one on another system if you want to do so.

Use the following procedure to install an additional LDAP browser on another system:

1. Insert the Windchill Third Party Software CD.
2. Copy the files on the CD to a directory of choice.
 - Windows: <CD-ROM_directory>/Aphelion/SyntegraLdapBrowser
 - UNIX: <CD-ROM_directory>/AphelionUnix/SyntegraLdapBrowser
3. Navigate to the directory where you copied the files.

4. From that directory, open the browser start file in a text editor:
 - On Windows, open lde.bat.
 - On UNIX, open lde.sh.
5. If needed, modify the Java Home directory setting in the file to point to the Java Home directory on your system.
6. Save your changes.
7. Determine how to start the LDAP browser:
 - On Windows, you can configure a shortcut to start the LDAP browser using lde.bat. The sample Syntegra LDAP Browser shortcut file that you can modify is provided.
 - On UNIX, use the lde.sh file to start the browser.

Configuring the LDAP Browser for a Specific LDAP Server

1. Start the LDAP browser that you installed. The LDAP browser will display the **Connect** dialog box.
2. Create a new connection by selecting **New** from the buttons on the right.
3. In the dialog that displays, enter the configuration information for the LDAP server. For example:
 - a. Enter the host address and port number.
 - b. Click **Fetch DNs**. This populates the **Base DN** box with the context prefixes associated with the server. If there is no context prefixes associated with the server, no values appear.
 - c. If DNs are listed, select the base DN from those listed. If none are listed, continue.

You can also clear any selection if your directory allows you to read below the advertised naming context.

- d. If a user name and password are to be used, clear the **Anonymous bind** check box.

If you clear the Anonymous bind check box, you must enter the user DN and password that are to be used to bind to the server.

4. Click **Save**. You will return to the **Connect** dialog box.
5. In the **Session List** box, select **new** and click **Rename**. The **Rename Session** dialog box appears.
6. Enter a meaningful name for your connection and click **OK**.
7. From the **Connect** dialog box, select the new connection name just entered in the Session list.
8. Click **Connect**. The Connect dialog box disappears, and the **Syntegra LDAP Browser/Editor** window displays the children of the base DN (if one is selected in step 3) or of the directory root (if the selection is cleared in step 3).

For additional browser information, see the *Aphelion Directory 2002 Administration Guide*.

14

Managing the Aphelion Directory

This chapter describes how to manage the Aphelion directory.

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Managing the Aphelion Directory Overview

Aphelion Administration Web tools allow you to manage the Aphelion Directory outside of the Info*Engine environment. The management functions include changing Aphelion settings, making changes to an existing LDE database, removing an existing LDE database definition, exporting data from a database and importing data into a database. For sites that are only using the directory in conjunction with Info*Engine, the Web tools are not usually needed.

Instructions in this chapter include:

- Starting the administration Web tools.
- Adding additional users to the administration Web tools.
- Modifying Aphelion for large systems.

Starting the Administration Web Tools

To start the Aphelion Administration Web tools, use the following URL from your browser:

`http://<hostname>[:<port>]/aphelion/`

Where *<hostname>* is the Aphelion host and *<port>* is the optional port used for the Web tools. You need to specify the port when the default port is not used.

Note: You must include the slash (/) at the end of the URL.

To use the Aphelion Administration Web tools, click **Authenticate** and log in. Enter the user name and password under which you installed Aphelion.

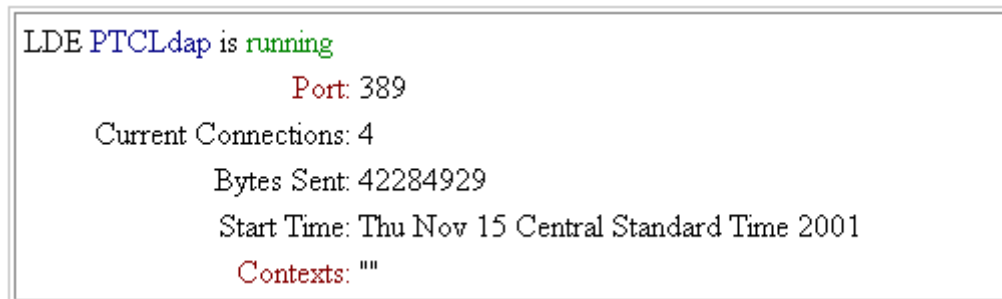
Note: If you installed Aphelion on a Windows system using a domain user, you must manually complete the tools setup as described in the section titled [Starting the Administration Web Tools](#) and enter the domain name, a backslash (\), and the user name in the **User** field. For example, if your domain name is "division12" and your user name is "user555", then you would enter the following:

`division12\user555`

If the login is successful and the tools are connected to the Aphelion Directory that you installed, the following frame displays on the left side of the browser window:



In this frame, you should see the **PTCLdap** LDE link. This is the link to information about your Aphelion Directory. For example, clicking the link displays information similar to the following:



If the frame does not contain the **PTCLdap** LDE link or if your login was not successful, verify that the user name you entered is the user under which you installed the Aphelion Directory. On a Windows system, if that user is a domain user rather than a local user, you must complete the tools setup as described in the section titled [Starting the Administration Web Tools](#), and you must enter the domain name, a backslash (\), and the user name in the **User** field.

Adding Other Aphelion Administration Web Tool Users

Initially, only the user under which you installed the Aphelion Directory can be specified when logging into the Aphelion Administration Web tools.

If you would like to specify other user names when logging in, you can add these users through the Web tools. Use the following steps to add users:

1. Determine the name of the users that you want to add.

For Windows, users must be in the Administrators group. For UNIX, users must be valid UNIX users on that system.

2. Start the Aphelion Administration Web tools and log in. See [Starting the Administration Web Tools](#).

3. In the left-hand frame, under **PTCLdap**, click **Manage**.

The **LDE Configuration:PTCLdap** window displays.

4. In the left-hand frame of the **LDE Configuration:PTCLdap** window, under **PTCLdap > Administration**, click **Privileges**.

The **Administrative Privileges for PTCLdap** page displays

5. Under **Master Administrators**, click **Add** and enter the user name in the field that is provided. You can repeat this step for each user you want to add.

If the user is a Windows domain user, you must include the domain name and a backslash (\) before the user name. For example, assume that you want to add user "user555", where user555 is a domain user with the domain name of "division12". Then enter the following user:

```
division12\user555
```

6. Click **Update Administrative Privileges** to save your additions.

The changes made are automatically in effect for all subsequent login attempts.

Modifying Aphelion Options for Large Systems

If your site will have a large number of LDAP entries in the directory or if you anticipate slow response time, you may want to modify the default values for the following Aphelion options:

- **Maximum number of entries returned** is set to 500.
- **Request time limit** is set to 3600 seconds.

To get to the Options windows, expand the **PTCLdap** link and then the **Settings** link. Click the **Options** link to display the options.

15

Starting and Stopping the Aphelion Directory

This chapter describes how to stop and start the Aphelion directory and the LDAP browser.

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Starting and Stopping the Aphelion Directory Overview

You can start and stop the Aphelion Directory by using the Aphelion Administration Web tools or by manually starting and stopping Aphelion.

Note: In some instances on UNIX systems, the file size limit for the Aphelion lde.stat and lde.log files can be exceeded causing the Aphelion LDAP services to stop. This situation can occur during high volume updates (for example, migrations) to the LDAP database. Before initiating a high volume update process, ensure that the files are located on a disk partition that has sufficient free space to hold the files. Also, check the file sizes and either archive or delete the files as necessary. The log files are located in the /usr/var/lde/var/PTCLdap/PTCLdap.logs/ directory. For additional information about setting log file parameters, refer to the Aphelion documentation.

Starting and Stopping the Aphelion Directory with Web Tools

The Aphelion Directory is an LDE that is named PTCLdap. The directory can be started and stopped using the Aphelion Administration Web tools:

1. Start and log into the Administration Web tools. See [Starting the Administration Web Tools](#).
2. Select **LDE > PTCLdap > Manage**. Then select **Administration > Processes**.

The **Process Administration** page displays.

3. Under **LDE-PTCLdap**, click **Stop** to stop the Aphelion Directory when it is running and click **Start** to start the directory when it is stopped.

Manually Starting and Stopping the Aphelion Directory

How you manually start and stop the Aphelion Directory is determined by which operating system you are using.

Starting and Stopping on Windows

The Windows Aphelion installation adds the **Aphelion Administration** and **Aphelion Services** services, which are automatically started when the installation completes and when your system reboots. You do not need to manually start these services. However, if you want to manually stop and restart the services, you can do so through the Control Panel **Services** dialog.

Starting and Stopping on UNIX

The UNIX Aphelion installation generates an Aphelion startup script and starts Aphelion.

For Solaris and HP-UX systems, the installation also adds the script to the system auto startup scripts. Therefore, Aphelion processes automatically start when Solaris and HP-UX systems are rebooted.

For AIX systems, you can manually start Aphelion after the system is rebooted or you can add the Aphelion startup script to the auto start process.

The following sections provide the specific commands that you can use to manually start and stop Aphelion on a UNIX system.

Solaris

To stop all Aphelion processes, run the following command:

```
/etc/rc2.d/S77cdsDaemon stop
```

To start all Aphelion processes, run the following command:

```
<aphelion_dir>/instTemp/startSolaris.sh
```

Where *<aphelion_dir>* is the directory where Aphelion is installed.

HP-UX

To stop all Aphelion processes, run the following command:

```
/sbin/rc2.d/S561cdsDaemon stop
```

To start all Aphelion processes, run the following command:

```
<aphelion_dir>/instTemp/startHP-UX.sh
```

Where *<aphelion_dir>* is the directory where Aphelion is installed.

AIX

To stop Aphelion processes, run the following command to determine the PID of the Aphelion processes:

```
ps -eaf | grep lde
```

Then, manually kill those processes that were listed.

To start all Aphelion processes, run the following command:

```
<aphelion_dir>/instTemp/startAIX.sh.
```

Where *<aphelion_dir>* is the directory where Aphelion is installed.

Starting the LDAP Browser

An LDAP browser is a general purpose tool that allows you to view and modify the contents of any LDAP directory. Although, you do not need to use the LDAP

browser when FrameMaker is operating with no problems, you may find it helpful when you are investigating problems that occur.

The LDAP browser installed during the Aphelion Directory installation can be started as follows:

- On Windows, select **Start > Programs > LDAP Browser**.
- At a UNIX command prompt, enter the following:

```
/<aphelion_dir>/LDAPBROWSER/ldapbrowser.sh
```

Where *<aphelion_dir>* is the directory where Aphelion is installed.

The LDAP browser starts and displays the **Connect** dialog box. To connect to the directory installed on the same host, select **localhost** and click **Connect**. To connect to another directory, select the corresponding name in the list.

16

Uninstalling Aphelion

This chapter describes how to uninstall the Aphelion directory tools.

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Uninstalling Aphelion Directory and Tools

Note: If you want to use the data in an existing Aphelion Directory, you must export the data before uninstalling the directory. Use the Aphelion Administration Web tools to the export data.

This version of the installation program provides you with the following uninstall options:

- On Windows, click the Control Panel **Add/Remove Programs** icon to display your installed programs. Remove the **Aphelion Directory** entry from the list.
- On UNIX, enter the following at a command prompt:

```
/<aphelion_dir>/UninstallerData/Uninstall_aphelion
```

Where *<aphelion_dir>* is the directory where Aphelion is installed.

Note: To complete the uninstall process, reboot your system.

After you have uninstalled Aphelion, remove the Aphelion installation directory and all remaining files under that directory.

IV

Installing Info*Engine Section

17

Installing Info*Engine

This chapter provides the instructions to install Info*Engine

Info*Engine is installed using the InstallAnywhere utility. For information about using InstallAnywhere, see the [About Installing Windchill Products](#) chapter.

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Before You Begin

Before you begin to install Info*Engine, you should have:

- Installed Apache if it is your Web server, otherwise you will install the other Web servers after Info*Engine is installed, because there are configuration steps that require access to the location where Info*Engine is installed.
- Installed Tomcat if it is your servlet engine, otherwise you will install the other servlet engines after Info*Engine is installed, because there are configuration steps that require access to the location where Info*Engine is installed
- Installed Aphelion.
- Installed Java Software Development Kit (SDK).

The Info*Engine installer is designed to automatically configure Info*Engine for Apache and Tomcat. All other supported Web servers and servlet engines require you to perform manual configurations. If you are using a Web server and servlet engine combination other than Apache and Tomcat, those configuration instructions are performed following the Info*Engine installation and they are located in subsequent chapters of this book.

During the installation, the installer will prompt you for specific configuration information. PTC recommends you gather this information prior to running the installer so that the install can proceed without interruption:

- The directory where the Java SDK is installed.
- The Web context root.

This is the context root of the Web application. The context root is a component of the Web application URL that is used to access the Windchill application from a Web browser, for example:

`http://www.myserver.com/<context root>.`

The default is Windchill.

- The DNS registered host name where Info*Engine is being installed. The host name is used by the network components to access the Windchill application.
- The information needed to connect Info*Engine to Aphelion:
 - The DNS registered host name where Aphelion is installed.
 - The port number Aphelion listens on. The default is 389.
 - The distinguished name of the LDAP directory manager. This value was set when Aphelion was installed.
 - The password of the LDAP directory manager. This value was set when Aphelion was installed.

- The distinguished name of the LDAP configuration properties base. The default is `cn=<machine name>,cn=Application Services,o=mycompany`. Where `mycompany` is derived from the network domain, for example, if the network domain is `mycompany.com`, `mycompany` will be used.
- The port number of the task processor for the Info*Engine server (custom only).
- The installation directory and port number for Apache (custom only).
- The directory where Tomcat is installed.

There are three methods available to install and configure Info*Engine. They are described as follows:

- **Typical** — This option configures the Info*Engine server, and configures Info*Engine for Apache and Tomcat (PTC delivered versions only). Apache and Tomcat are the supported default Web server and servlet engine combination. The typical process automatically configures Info*Engine for the SDK, Aphelion, Apache, and Tomcat; while you provide the installation locations for these products.
- **Reconfiguration for Apache** — This option is useful if you have an existing installation of Info*Engine and you reinstalled Apache. You will need to add the LDAP authentication configuration if other Windchill products have been installed. If you do not use this method to reconfigure Apache when changes occur, then the configurations must be performed manually.
- **Reconfiguration for Tomcat** — This option is useful if you have an existing installation of Info*Engine and you reinstalled Tomcat.
- **Custom** — This option allows you to selectively choose the options to install and configure Info*Engine. In particular, this option must be used to bypass the Web server and servlet engine configurations when:
 - You are using a non-PTC supplied Apache or Tomcat. Furthermore, you must select this option in order to bypass the Apache configuration if you are using a non-PTC Apache that must be manually configured to function with Windchill.
 - You are using a Web server and servlet engine other than Apache and Tomcat.
 - You want to use some value other than the non-default port number for the Info*Engine task processor or Apache.

The Info*Engine installer supports the following scenarios:

- **Installing Info*Engine** - This can be a first time installation of Info*Engine or reinstalling the Info*Engine source code. The Typical and Custom installation options support the scenario.

- **Reconfiguring Apache or Tomcat** - In this scenario, Info*Engine has been installed and configured and you installed Apache or Tomcat a second time subsequent to installing Info*Engine. In effect, you are using the installer as a utility to reconfigure Info*Engine for Apache or Tomcat. The Reconfiguration for Apache and Reconfiguration for Tomcat options support this scenario.

The installer instructions have been subdivided to support the scenarios as follows:

Install Info*Engine

Perform the following steps, that are described in the following sections, to install, configure and verify the Info*Engine installation:

1. Installing Info*Engine
2. Additional Web Server and Servlet Engine Configurations
3. How to Start and Stop Info*Engine Components
4. Verifying Your Info*Engine Configuration

Reconfigure Apache or Tomcat

Perform one or both of the following set of instructions, that are described in the following sections, to reconfigure Info*Engine for Apache or Tomcat.

- Reconfiguration for Apache
- Reconfiguration for Tomcat

The remaining sections in this chapter are for your information:

- About Info*Engine Web Application URLs
- Installation Summary

Installing Info*Engine

When performing the installation, the install user should be:

- On Windows — The same user that will run the application.
- On UNIX — A non-root user.

Info*Engine is located on the Windchill Info*Engine CD.

1. Before initiating the installer, stop any running Web server or servlet engine.
2. Insert the Windchill Info*Engine CD.

3. When the installer begins, the first window that opens is **Before You Begin**. This section summarizes the preinstallation requirements, provides a link to the software matrices, and a reference to this book, *Windchill Info*Engine Installation and Configuration Guide*.

When you are ready to proceed with the installation, click **Next**.

4. In the **Select Installation Type** panel, select the type of installation to perform.

The installation options are described in the following table. Select either Typical or Custom to perform the installation and configuration of Info*Engine. The Apache and Tomcat reconfiguration install options are addressed in another section later in this chapter.

Select Installation Type

Select this option	To	Go to...
Typical	Install Info*Engine and configure it with Apache and Tomcat. This option delivers a standard, out-of-the-box installation and configuration of Info*Engine.	Step 6.
Reconfiguration for Apache	Change the existing Apache configuration for Info*Engine.	Not supported in this section.
Reconfiguration for Tomcat	Change the existing Tomcat configuration for Info*Engine.	Not supported in this section.

Select this option	To	Go to...
Custom	Specify your installation and configuration options for Info*Engine. You must select this option to install Info*Engine if you are using a non-PTC-supplied Apache or Tomcat, or a Web server and servlet engine other than Apache and Tomcat, or an Apache that has been manually configured to function with Windchill.	Step 5.

5. In the **Select Product Options** panel, specify the options to install and configure Info*Engine. This panel appears when the Custom installation type is selected.

By default, the **Install Info*Engine Software**, **Configure Info*Engine Server**, **Configure Apache and Tomcat**, and **Create Startup Script** options are selected. You can select and deselect the options as desired.

Select Product Options

Select this option	To
Install Info*Engine Software	Copy the Info*Engine files to the installation directory. No configurations for Info*Engine are performed.
Configure Info*Engine Server	Configure Info*Engine using the values you specify during the installation.
Customize Info*Engine Configuration	Configure the advanced Info*Engine properties using the values you specify during the installation.

Select this option	To
Configure Local Apache	Configure a locally installed version of Apache or select to bypass the Web server configuration process. The configuration for Apache uses default settings, while you specify only its installation location.
Configure Tomcat	Configure Tomcat or select to bypass the servlet engine configuration process. The configuration for Tomcat uses default settings, while you specify only its installation location.
Customize Apache Configuration	If the port number Apache is listening on is a value other than 80, specify the port number assigned when Apache was installed. The default port number is 80.
Create Startup Scripts	Create startup scripts for Info*Engine.

6. In the **Select Directory** panel, enter the location where Info*Engine should be installed.

Info*Engine can be installed in any directory; there are no pre-existing directory requirements. Accept the default, /opt/ptc/Windchill for UNIX or C:\ptc\Windchill for Windows, or click **Browse** to create or select a different path.

7. In the **Select Java Software Development Kit Directory** panel, specify the location where Java SDK is installed.
8. In the **Configure Info*Engine Server** panel, specify the configuration parameters for Info*Engine.

Configure Info*Engine Server

For this property...	Enter a value that meets this description...
Web Application Context Root	<p>Defines the Web application context root name used to access the Windchill applications through the Web browser. This value is used to format the URL, for example, http://<DNS name>/<Web application context root>.</p> <p>The default is Windchill.</p>
DNS Registered Host Name	<p>A fully qualified DNS host name that defines the host on which Info*Engine is being installed.</p> <p>The default is derived from the network configuration of the machine. If for any reason, the network domain is not supplied in the text box, manually enter the fully qualified name of the machine.</p>

9. In the **Configure LDAP Connection** panel, specify the parameters needed to make a connection to the Aphelion LDAP directory.

The LDAP directory is used for storing the LDAP entries related to Info*Engine and to other Windchill applications.

Configure LDAP Connection

For this property...	Enter a value that meets this description...
LDAP Server Host Name	<p>Defines the host where the existing Aphelion Directory resides.</p> <p>The default used assumes Aphelion is installed on the same machine as Info*Engine, and displays the host name of the local machine.</p>

For this property...	Enter a value that meets this description...
LDAP Server Port Number	<p>Defines the port number to connect to the Aphelion Directory.</p> <p>The value shown, 389, is the suggested default when the Aphelion Directory was installed. The value must be the port number assigned when Aphelion was installed.</p>
LDAP Directory Distinguished Name	<p>Defines the distinguished name of the existing manager or a distinguished name that has sufficient privileges to add LDAP entries to the directory.</p> <p>The suggested value shown, cn=manager, is the distinguished name of the default user that is created when Aphelion is installed. This user has the required privileges to administer the Aphelion Directory, and to add, delete, modify, and search LDAP entries. The value you supply must be the same value defined when Aphelion was installed.</p>
LDAP Directory Manager Password	<p>Defines the current password of the LDAP manager specified by the LDAP Directory Distinguished Name.</p> <p>Specify the password used when Aphelion was installed.</p> <p>No default is provided.</p>
Distinguished Name of LDAP Configuration Properties Base	<p>Defines the distinguished name of the top subtree LDAP entry under which Info*Engine component LDAP entries will reside.</p> <p>If you entered a context name when you installed the Aphelion Directory, you must include that name as part of the distinguished name entered here. By default, no context name was required when you installed Aphelion.</p> <p>See the example presented in the Naming Context Example in the installing Aphelion chapters.</p>

The next window that opens depends on the installation option you chose. If you selected **Typical**, then go to Step 11, otherwise continue Step to 10.

10. In the **Customize Info*Engine Configuration** panel (Custom option only), you have the opportunity to customize your Info*Engine configuration.

The following table lists the properties you can modify to suit your Info*Engine environment.

Customize Info*Engine Configuration

For this property	Enter a value that meets this description
Info*Engine Server Task Processor	Defines the port number the task processor listens on. The default is 10002. Select a different number if this port number is already in use.

11. The **Specify Directory** for Apache panel prompts you for the Apache installation location.

- Enter the directory location where the PTC-supplied version of Apache is installed. Accept the default that is displayed and selected, or click **Browse** to select a different path.

Note: Configurations with other non-PTC versions of Apache are not supported.

12. The **Specify Directory** for Tomcat panel prompts you for the Tomcat installation location.

- Enter the directory location where the PTC-supplied version of Tomcat is installed. Accept the default that is displayed and selected, or click **Browse** to select a different path.

Note: Configurations with other non-PTC versions of Tomcat are not supported.

The next window that opens depends on the installation option you chose. If you selected **Typical**, then go to Step 14, otherwise continue to Step 13.

13. The **Specify Apache Port Number** panel (**Custom** only) prompts you to enter the port number that Apache listens on. This is the port number you entered when Apache was installed (the default Apache port number is 80).
14. To specify a location to place the startup scripts. Select one of the options listed in the **Select Shortcut Location** (on Windows) or **Create Link** (on UNIX) panel.

If you elect to create a shortcut, the installer will create startup scripts for Info*Engine, Tomcat, and Apache based on the selection you specify.

The decision you make at this time to create a shortcut, also determines whether the Windchill Services and Windchill Information Modeler installers will create shortcuts for their applications. If these installers determine that a shortcut exists, then they will automatically create a startup shortcut for you during the installation.

15. The **Review Settings** panel lists the selections you specified for the installation. Verify the information is correct, and then click **Install**.
16. The **Installing** panel displays the installer progress as files are copied to the system and configurations are performed.
17. When the installation completes successfully, the **Installation Complete** panel displays the directory where Info*Engine was installed. The installation log files are located in the <Windchill>/installer/logs directory. The log files for the installation are named:
 - IEServer_InstallLog.xml
 - IEServer_PtcInstall.log
18. Apply environment variable changes.

During the installation, the WT_HOME environment variable is modified. To effect the environment variable change, you must log off and log on to your system.

If the installation fails, a panel is displayed that contains error messages and the name of the log files. Document the location and name of the log files. The log files can be helpful in assisting you in determining the cause of the failure. Be sure to include them when filing an installation support request. See the Installation Log Files section in the [About Installing Windchill Products](#) for more information.

Additional Web Server and Servlet Engine Configurations

If your Web server and servlet engine are something other than the PTC-supplied Apache and Tomcat or if you installed Apache on a remote machine (different than Info*Engine), then it is necessary to perform manual configurations for those applications.

In addition to Apache and Tomcat, PTC supports the following Web server and servlet engine combinations. Instructions have been provided in the relevant product chapter to configure those products for Info*Engine. At this time, perform one of the following instructions to configure your Web server and servlet engine for Info*Engine. When you have completed those instructions, return here for the next set of instructions.

- [Configurations When Apache is Installed Remotely](#)
- [Configuring Sun ONE](#)

After you have completed the configuration steps, continue to the next section.

Using the Windows Shortcut to Start the Servers

If you elected to create a shortcut during the installation, then the installer created a shortcut for each of the following: Info*Engine, Tomcat, and Apache. You can use the shortcut to start the application, however, to stop the application you must manually issue the stop command.

The following list describes the shortcut start command for Tomcat, Apache, and Info*Engine categorized by the shortcut options that were presented to you:

- Windows **Start** menu:

Tomcat — Navigate to **Start > Programs > <Windchill>**, and click **Tomcat**.

Apache — Navigate to **Start > Programs > <Windchill>**, and click **Apache**.

Info*Engine — Navigate to **Start > Programs > <Windchill>**, and click **Info*Engine Server**.

Where *<Windchill>* represents the Web Application Context Root value you specified during the Info*Engine installation, for example, Windchill.

- Desktop Icon:

- Click on the **Tomcat** icon.
- Click on the **Apache** icon.
- Click on the **Info*Engine Server** icon.

- Quick Launch Bar:

You must mouse-over the icons in the quick launch bar to display the icon labels.

- Click on the **Tomcat** icon.
- Click on the **Apache** icon.
- Click on the **Info*Engine Server** icon.

- Other — This is a location that you specified during the installation.

How to Start and Stop Info*Engine Components

In a simple Info*Engine environment where the Info*Engine components all run in the same Java Virtual Machine (JVM), you do not need to manually start any Info*Engine components. Info*Engine uses the Naming Service search base entered during the installation to identify where the Info*Engine LDAP entries reside.

In a complex Info*Engine environment, where Info*Engine components are running in different JVMs and requests are made to execute adapters or task processors that are not in the same JVM, then the out-of-process adapters and task processors must be running when requests for them are made.

When installing Info*Engine with Windchill, once Windchill Services is installed, the Info*Engine server will execute within the Windchill application, and there is no need to separately start the Info*Engine server. The only time you would use the start files is:

- To start standalone Info*Engine.
- To test the Info*Engine installation.
- To start the out-of-process adapters. The adapter runs independently from Info*Engine in a different JVM (Java Virtual Machine).

Installed Start Files

The following table lists the start files for both Windows (.bat) and UNIX (.sh).

Script Name	Description
startnamingservice	Starts the Naming Service. By default, the Naming Services starts the Info*Engine server, however, it can be configured (manually) to start additional Info*Engine services. Use for standalone Info*Engine.
startserver	Starts the Info*Engine server (only).
startemail	Starts the E-Mail Broker. The e-mail broker must be configured manually. The Info*Engine administration guide includes this information.

Script Name	Description
startjndi	<p>Starts the JNDI adapter as an out-of-process adapter.</p> <p>The JNDI adapter must be configured manually. The JNDI adapter guide includes this information.</p>

These files can be used for starting Info*Engine components. The files are located in the /bin/infoengine directory where Info*Engine is installed.

Modifying startserver.sh for HP-UX 11 Systems

Info*Engine can hang on HP-UX 11 systems when the Java Virtual Machine uses standard JNDI interfaces to access an LDAP directory. To fix this problem, set the HP-UX Java option "-XdoCloseWithReadPending" in your servlet engine and in the Info*Engine server start file, startserver.sh.

To set the option in the Info*Engine server start file, add the option to the IE_OPTS line in the file. The resulting line will be as follows:

```
IE_OPTS="-Xmx64m -Xmx64m -XdoCloseWithReadPending"
```

To set the option in Tomcat, see [Modifying wttomcat_start for HP-UX 11 Systems](#).

Stopping Info*Engine

Windows

On a Windows system, you can stop any Info*Engine component that is running by closing the window in which it is running. On Windows, stopping one Info*Engine component does not stop any other component.

UNIX

On a UNIX system, you can do either of the following:

- Use the UNIX kill command to end the Info*Engine process.
- Enter CTRL/C in the Info*Engine component window.

Info*Engine Log Files

The Info*Engine log files can be helpful when troubleshooting your configuration. The log files are located in the <Info*Engine>/logs directory.

Verifying Your Info*Engine Configuration

To verify that Info*Engine is installed and configured correctly you can:

- Run the verification JSP page.

Running a Verification JSP Page

You can verify that your Web server, servlet engine and Info*Engine components have been installed and configured correctly by executing the VerifyIE.jsp page that is located in the infoengine/jsp/examples directory where Info*Engine is installed.

Note: Both your Web server and servlet engine need to be running. Also, you need to start the Info*Engine server to verify the installation. You can start the server by starting the Naming Service as described in the [How to Start and Stop Info*Engine Components](#) section. The Naming Service starts the Info*Engine server.

If you installed Info*Engine using the default Windchill application URL, then you can execute the VerifyIE.jsp page as follows:

```
http://localhost/Windchill/infoengine/jsp/examples/VerifyIE.jsp
```

The following page displays:



Click the links below to test your installation of Info*Engine.

If the pages display without errors, your installation was successful.

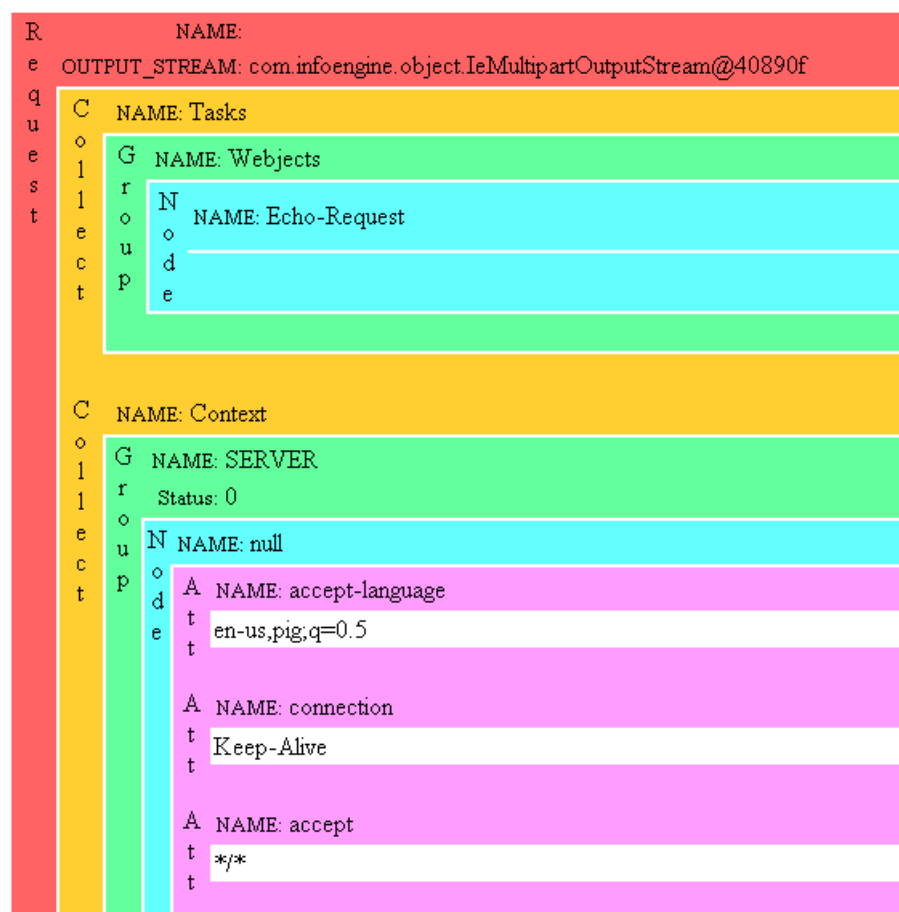
The EchoRequest.jsp page tests JSP pages, and the CreateGroup.xml tests tasks.

[EchoRequest.jsp](#) [CreateGroup.xml](#)

Successfully executing the VerifyIE.jsp page and then executing the EchoRequest.jsp page and CreateGroup.xml file show that your system is configured correctly to execute webobjects in JSP pages and tasks.

The output from the EchoRequest.jsp page should be similar to the following:

I*E JSP Test - EchoRequest



The output from CreateGroup.xml should be similar to the following:

```

<?xml version="1.0" encoding="UTF-8" ?>
- <wc:COLLECTION xmlns:wc="http://www.ptc.com/infoengine/1.0">
-   <EmployeeData NAME="createdgroup" TYPE="Object" STATUS="0">
-     <wc:INSTANCE>
-       <NAME>Sam Johnson</NAME>
-       <ADDRESS>1234 Main St.</ADDRESS>
-       <EMAIL>sjohnson@somewhere.com</EMAIL>
-     </wc:INSTANCE>
-     <wc:INSTANCE>
-       <NAME>Harvy Anderson</NAME>
-       <ADDRESS>1234 Amber St.</ADDRESS>
-       <EMAIL>handerson@somewhere.com</EMAIL>
-     </wc:INSTANCE>
-     <wc:INSTANCE>
-       <NAME>James O'Connor</NAME>
-       <ADDRESS>775 Main St.</ADDRESS>
  
```

```

        <EMAIL />
    </wc:INSTANCE>
- <wc:INSTANCE>
    <NAME>Harvey Hampton</NAME>
    <ADDRESS>775 Main St.</ADDRESS>
    <EMAIL>hhampton@somewhere.com</EMAIL>
</wc:INSTANCE>
</EmployeeData>
</wc:COLLECTION>

```

For information about the Info*Engine JSP pages and tasks, see the *Info*Engine User's Guide*.

Reconfiguration for Apache

If you have already installed Apache and you reinstalled it subsequent to installing and configuring Info*Engine, then you can use these instructions to reconfigure Info*Engine for a new installation of Apache.

You will use the functionality provided with the Info*Engine installer to complete these instructions. The Info*Engine installer is located on the Windchill Info*Engine CD.

1. Before initiating the installer, stop Apache, Tomcat, Info*Engine, and the Web browser.
2. Insert the Windchill Info*Engine CD.
3. When the installer begins, the first window that opens is **Before You Begin**. This section summarizes the preinstallation requirements, provides a link to the software matrices, and a reference to this book, *Windchill Info*Engine Installation and Configuration Guide*.

When you are ready to proceed with the installation, click **Next**.

4. In the **Select Installation Type** panel, select the type of installation to perform.

The installation options are described in the following table. Select the **Reconfiguration for Apache** option.

Select Installation Type

Select this option	To	Go to...
Typical	Install Info*Engine and configure it with Apache and Tomcat. This option delivers a standard, out-of-the-box installation and configuration of Info*Engine.	This option is not supported in this section.
Reconfiguration for Apache	Change the existing Apache configuration for Info*Engine.	Step 5.
Reconfiguration for Tomcat	Change the existing Tomcat configuration for Info*Engine.	This option is not supported in this section.
Custom	Specify your installation and configuration options for Info*Engine. You must select this option to install Info*Engine if you are using a non-PTC-supplied Apache or Tomcat, or a Web server and servlet engine other than Apache and Tomcat, or an Apache that has been manually configured to function with Windchill.	This option is not supported in this section.

5. In the **Specify Directory** panel, enter the location where Info*Engine is installed.

Accept the default that is displayed and selected, or click **Browse** to select a different path.

6. In the **Specify Directory** panel, enter the location where Apache is installed.

Accept the default that is displayed and selected, or click **Browse** to select a different path.

7. In the **Select Shortcut Location** (on Windows) or the **Create Link** (on UNIX) panel, select a location for the Info*Engine startup executable/script.

The Info*Engine startup shortcuts are recreated to support the new Apache.
8. The **Review Settings** panel lists the selections you specified for the installation. Verify the information is correct, and then click **Install**.
9. The **Installing** panel displays the installer progress as files are copied to the system and configurations are performed.
10. When the installation completes successfully, the **Installation Complete** panel displays the directory where Info*Engine was installed. The installation log files are located in the <Windchill>/installer/logs directory. The log files for the installation are named:
 - IEServer_InstallLog.xml
 - IEServer_PtcInstall.log
11. Restart the servers.

Now that the changes are complete, you can restart Apache, Tomcat, Info*Engine and the Web browser.

12. You can verify that your Web server, servlet engine and Info*Engine components have been configured correctly by executing the VerifyIE.jsp page that is located in the infoengine/jsp/examples directory where Info*Engine is installed:

```
http://localhost/<Windchill>/infoengine/jsp/examples/  
VerifyIE.jsp
```

where <Windchill> is your Web application name.

If the installation fails, a panel is displayed that contains error messages and the name of the log files. Document the location and name of the log files. The log files can be helpful in assisting you in determining the cause of the failure. Be sure to include them when filing an installation support request. See the Installation Log Files section in the [About Installing Windchill Products](#) for more information.

Reconfiguration for Tomcat

If you have already installed Tomcat and you reinstalled it subsequent to installing and configuring Info*Engine, then you can use these instructions to reconfigure Info*Engine for a new installation of Tomcat.

You will use the functionality provided with the Info*Engine installer to complete these instructions. The Info*Engine installer is located on the Windchill Info*Engine CD.

1. Before initiating the installer, stop Apache, Tomcat, Info*Engine, and the Web browser.

2. Insert the Windchill Info*Engine CD.
3. When the installer begins, the first window that opens is **Before You Begin**. This section summarizes the preinstallation requirements, provides a link to the software matrices, and a reference to this book, *Windchill Info*Engine Installation and Configuration Guide*.

When you are ready to proceed with the installation, click **Next**.

4. In the **Select Installation Type** panel, select the type of installation to perform.

The installation options are described in the following table. Select the **Reconfiguration for Tomcat** option.

Select Installation Type

Select this option	To	Go to...
Typical	Install Info*Engine and configure it with Apache and Tomcat. This option delivers a standard, out-of-the-box installation and configuration of Info*Engine.	This option is not supported in this section.
Reconfiguration for Apache	Change the existing Apache configuration for Info*Engine.	This option is not supported in this section.
Reconfiguration for Tomcat	Change the existing Tomcat configuration for Info*Engine.	Step 5.

Select this option	To	Go to...
Custom	Specify your installation and configuration options for Info*Engine. You must select this option to install Info*Engine if you are using a non-PTC-supplied Apache or Tomcat, or a Web server and servlet engine other than Apache and Tomcat, or an Apache that has been manually configured to function with Windchill.	This option is not supported in this section.

5. In the **Specify Directory** panel, enter the location where Info*Engine is installed.

Accept the default that is displayed and selected, or click **Browse** to select a different path.
6. In the **Specify Directory** panel, enter the location where Tomcat is installed.

Accept the default that is displayed and selected, or click **Browse** to select a different path.
7. In the **Select Shortcut Location** (on Windows) or the **Create Link** (on UNIX) panel, select a location for the Info*Engine startup executable/script.

The Info*Engine startup shortcuts are recreated to support the new Tomcat.
8. The **Review Settings** panel lists the selections you specified for the installation. Verify the information is correct, and then click **Install**.
9. The **Installing** panel displays the installer progress as files are copied to the system and configurations are performed.
10. When the installation completes successfully, the **Installation Complete** panel displays the directory where Info*Engine was installed. The installation log files are located in the <Windchill>/installer/logs directory. The log files for the installation are named:
 - IEServer_InstallLog.xml
 - IEServer_PtcInstall.log

11. Restart the servers.

Now that the changes are complete, you can restart Apache, Tomcat, Info*Engine and the Web browser.

12. You can verify that your Web server, servlet engine and Info*Engine components have been configured correctly by executing the VerifyIE.jsp page that is located in the infoengine/jsp/examples directory where Info*Engine is installed:

```
http://localhost/<Windchill>/infoengine/jsp/examples/  
VerifyIE.jsp
```

where <Windchill> is your Web application name.

If the installation fails, a panel is displayed that contains error messages and the name of the log files. Document the location and name of the log files. The log files can be helpful in assisting you in determining the cause of the failure. Be sure to include them when filing an installation support request. See the Installation Log Files section in the [About Installing Windchill Products](#) for more information.

About Info*Engine Web Application URLs

As a result of the Info*Engine deployment, URL requests for Info*Engine JSP pages, templates and tasks must include a Info*Engine Web application context root prefix. The prefix is defined through the deployment and results in the following URL references:

- For references to Info*Engine JSP pages, the request URL must include the application URL prefix. For example, if the Web application context root is "Windchill", then the following URL can be used to reference the "XXX.jsp" file that is in the "infoengine" directory:

```
http://<host>/Windchill/infoengine/XXX.jsp
```

- In addition to the application context root prefix, URL references to Info*Engine tasks must include **/servlet/IE/tasks/**. For example, if the application context root is "Windchill", then the following URL can be used to reference the "XXX.xml" file that is in the "infoengine" directory:

```
http://<host>/Windchill/servlet/IE/tasks/infoengine/XXX.xml
```

- For SOAP requests, URL references include the host name, the application URL prefix, and **/servlet/RPC**. For example, if the application context root is "Windchill", then the following URL can be used to access the SOAP RPC servlet:

```
http://<host>/Windchill/servlet/RPC
```

- In addition to the application context root prefix, URL references to Info*Engine templates must include **/servlet/IE/**. Using HTML templates is not recommended. To use this URL, you must configure the template processor; configuration is no longer done automatically.

For example, assume that the template processor is configured. Then, if there are existing Info*Engine templates (such as XXX.html) that reside in the root template directory, they can be accessed using a URL similar to the following URL:

```
http://<host>/Windchill/servlet/IE/XXX.html
```

The installer establishes these URL references during the Info*Engine installation through settings in both the servlet engine and the Info*Engine LDAP entries.

Installation Summary

After you verify that Info*Engine is installed and configured correctly, you can go on to install and configure adapters and to configure any other Info*Engine feature that you may want to use.

The following sections are for your information only. The Info*Engine directory structure is described in About the Info*Engine Installed Directories and other Info*Engine features such as adapters and gateways are discussed in About Info*Engine Adapters and Gateways.

How Authentication Applies to Info*Engine

By default, the Web server is not configured to support user authentication for Info*Engine. User authentication is not needed for Info*Engine running in a standalone mode. It is assumed that if authentication is needed for Info*Engine in standalone mode, then it is up to the customer to perform the authentication configurations.

Note: If additional products are installed, authentication is automatically added for all Info*Engine URLs.

The [Configuring Apache and Tomcat With Other Options](#) chapter includes information about authentication and other information that can be helpful when configuring authentication for Info*Engine in standalone mode. For authentication related to other Web server and servlet engines, see the chapter for the specific product.

About the Info*Engine Installed Directories

InstallAnywhere installs the Info*Engine components using the industry standard Web application model. Using this model, the Info*Engine class and jar files are available to the JSP engine through the codebase/WEB-INF directory.

After you install Info*Engine components, the Info*Engine installation directory contains the following items:

- The bin directory, under which there is an infoengine directory that contains Info*Engine startup files.
- The codebase directory, which is the repository for the code. In this directory, there are two subdirectories, infoengine and WEB-INF:
 - In the infoengine/docs directory, you can find the Info*Engine documentation.
 - In the infoengine/docs/apidocs directory, you can find the API documentation for the Info*Engine external classes that can be used with JSP and the Service Access Kit (SAK).
 - In the infoengine/jsp/admin directory, you can find the JSP pages and a help directory for the Info*Engine Property Administrator.
 - In the infoengine/jsp/examples directory, you can find example JSP pages.
 - The WEB-INF/lib directory holds the jar files that you want to make available to Info*Engine through the JSP engine. Initially, this directory holds the jar files that are required by Info*Engine. You can put other jar files that are used by Info*Engine in this directory. For example, when you install coresident Info*Engine adapters, additional jar files are installed to the directory or you are instructed to add the jar files to this directory.

All jar files that you put in this directory are automatically available to Info*Engine.
- The conf directory, which has additional subdirectories that contain templates of Info*Engine-specific configuration files that were used during the installation. They can be used as reference information and may be helpful in debugging problems that come up.
- The lib directory, which contains the Info*Engine servlet.jar file.
- The opt directory, which contains the Apache and Tomcat Servlet Engine files that are used by the installer to configure Apache and install Tomcat.
- The prog_examples directory, which contains custom webjext, SAK, and SOAP examples that can be used for illustration purposes.
- The tasks directory for XML task files. Example XML files are in the infoengine/examples subdirectory under this directory.
- The templates directory for HTML template files. Because JSP pages are recommended, no template examples are provided.

If you install the Info*Engine components using the default log option, the Info*Engine installation directory also contains the following directory:

The logs directory for Info*Engine log files.

Note: The Info*Engine JSP, program, and task examples are provided to illustrate Info*Engine features. Before running these examples, you may need to modify the files or configure adapters.

The Info*Engine CD also contains the Info*Engine documentation. The files in the Docs directory on the CD are the same files that InstallAnywhere copies to the codebase/infoengine/docs directory under your installation directory.

The *Info*Engine Installation and Configuration Guide*, *Info*Engine User's Guide*, and *JNDI Adapter Guide* are available in the PDF format. You can copy these files to any directory on your system. To view the PDF version of a guide, you must have the Adobe Acrobat Reader on your system. Double-click the PDF file to view its contents.

About Adapters and Gateways

The JNDI adapter and the gateway software are installed with Info*Engine, but, they are not configured during the Info*Engine installation. The JNDI adapter and gateway must be manually configured for use with standalone Info*Engine. On the other hand, when Windchill Services is installed, the Windchill adapter is installed and an instance of the JNDI adapter and Windchill adapter are configured.

All other adapters are delivered on their own CD-ROMs. Each CD-ROM contains adapter instructions; use these instructions to install and configure the adapter. For other configuration information, see the *Windchill Info*Engine Administration and Implementation Guide*.

V

Other Web Server and Servlet Engine Configurations Section

18

Configuring Sun ONE

The instructions in this chapter provide the details to configure the Sun ONE Application Server and its embedded servlet engine for use with Info*Engine.

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Before You Begin

Before you begin this installation, you should have:

- Consulted the Windchill software matrices for the version of Sun ONE supported with this release.
- Installed Sun ONE application server.
- Installed Info*Engine.

The configurations for Sun ONE are performed using the Sun ONE Application Server Administration Console and manually editing files. You will need the following information to complete the configuration:

- The Aphelion administrator distinguished name — This value was defined during the installation of Aphelion. The default is cn=manager.
- The Aphelion server port number — This value was defined during the installation of Aphelion. The default is 389.
- The location of the Info*Engine codebase directory — This value was defined during the installation of Info*Engine, for example, /opt/ptc/Windchill/codebase.
- The Info*Engine Web application context root name — This value was defined during the installation of Info*Engine, for example, Windchill.

The next set of instructions will guide you through the steps to configure Sun ONE Application server:

1. [Configuring Sun ONE Application Server](#)
2. [Deploy the Web Application](#)
3. [Add Security Constraint Definition in web.xml](#)
4. [Installation Summary](#)

Configuring Sun ONE Application Server

Some of the instructions in this section use the Sun ONE Application Server Administration Console to perform the configurations. Consult the Sun ONE help if you need detailed information about the administration console. To commit your changes, be sure to click the **Save** or **OK** button before you leave the screen or your changes will be lost.

1. Open the Sun ONE Administration Console.

2. Create a new server instance for Windchill.

The Sun ONE default server is called server1. Sun ONE recommends to create and configure a unique server for your application. In the examples used in this chapter, Windchill is the name given to the new server.

- Navigate to **App Server Instances** and select **New** to create a server instance.

Create New Server Instance

For this property	Enter this value...
Instance Name	A name to uniquely identify your server. For example, Windchill.
HTTP Port	A port number the server will listen on.

3. Set the default realm for security access.

In this step, you will specify the security realm type and the anonymous role. It is not necessary to enable audit logging.

In this configuration, authentication is performed against the LDAP directory.

- Navigate to **App Server Instances > Windchill > Security** (Windchill represents your server name).
- On the **General** tab, enter the following security information for the server:

Server Security

For this property	Enter this value that meets this description...
Log Level	Accept the default.
Audit Logging Enabled	Not necessary.
Default Realm	ldap
Anonymous Role	ANYONE

4. Define the parameters for the security realm.

In this step, you will define the parameters for the ldap realm, for example, you will specify the location of the LDAP directory, the administrators distinguished name and the jaas-content (JASS - Java Authentication Authorization Service).

- Navigate to **App Server Instances > Windchill > Security > Realms > ldap** (Windchill represents your server name).

Enter the following information to define the location of the Aphelion LDAP directory:

Security Realm Properties

For this property	Enter a value that meets this description...
directory	Enter the fully-qualified path to the Aphelion LDAP directory.
base-dn	Enter the value for the distinguished name of the LDAP configuration properties base. This value was defined when Info*Engine was installed.
jaas-context	Accept the default value. For example, ldapRealm

5. Add the Windchill classpath variable to the Java Virtual Machine (JVM) setting.

In this step, the classpath to the Windchill codebase is added to the JVM path settings.

- Navigate to **App Server Instances > Windchill**, and select the **JVM Settings** tab (Windchill represents your server name).

JVM Classpath Settings

For this property	Enter a value that meets this description...
Classpath Suffix	Add the following file paths and substitute the <Windchill> with the directory value where you installed Info*Engine: <Windchill>\codebase <Windchill>\codebase\WEB-INF\lib\ie.jar <Windchill>\codebase\WEB-INF\lib\ie3rdpartylibs.jar <Windchill>\codebase\WEB-INF\lib\install.jar <Windchill>\codebase\WEB-INF\lib\mail.jar <Windchill>\codebase\WEB-INF\lib\wc3rdpartylibs.jar
Ignore Env. Classpath	This option should be enabled, so that classpath information is obtained from the classpath suffix property.

By default, Java Message Service (JMS) is enabled. If you do not intend to use JMS, then you can disable it at this time.

- Navigate to **App Server Instances > Windchill > JMS > Service** (Windchill represents your server name).
- Select the **Service** option.
- Deselect the **Start Enabled** option.

This completes the Sun ONE changes implemented using the administration console. The next set of Sun ONE instructions are implemented by editing a file.

6. Setting the security policy for the JVM options.

The Sun ONE security policy rules are defined in the security.policy file. By default, the security policy rules are in effect. If you chose to continue to use a security policy in your implementation of Sun ONE, then an additional JVM setting is required to grant the necessary access permissions to the security manager. Otherwise you can skip this step and go to the Disable Use of Security Policy section to deactivate the security policy.

Complete the following instructions to grant the security manager the access permissions.

- a. Edit the <Sun ONE>\domains\domain1\Windchill\config\server.policy file in a text editor of choice.

- b. Add the following entry to the file.

```
//Windchill
grant codeBase "file:<Windchill>/codebase/-" {
permission java.io.FilePermission "<<ALL FILES>>",
"read,write,delete,execute";
permission java.util.PropertyPermission "*", "read,write";
permission java.lang.RuntimePermission "*";
};
```

Where *<Windchill>* is the directory location where you installed Info*Engine. Do not include the *<* and *>* characters that are displayed in this example. These entries are the minimal requirements needed for Windchill to properly function. You can include additional permissions related to specific directories as needed to support your site.

Disable Use of Security Policy

If you do not want to implement a security policy (on by default), you can disable the security manager. The server.xml file controls whether or not a security policy is used. To disable the use of a security policy, you can either comment it out or remove the security policy statement in the server.xml file. If the security manager is disabled, the changes described previously in Step 6, Setting the security policy for the JVM options, are not required. To disable the security manager:

- i. Open the *<Sun ONE>\domains\domain1\Windchill\config\server.xml* file in an editor of choice.

Where Windchill is the name of your server.

- ii. Comment out or remove the following line:

```
<jvm-options> -Djava.security.policy=<Sun ONE>\domains\
domain1\Windchill\config\server.policy </jvm-options>
```

Additional information about the security manager is available from Sun ONE at the following URL:

<http://docs.sun.com/source/816-7149-10/dgsecure.html#23037>

7. To effect the changes, stop and restart the Sun ONE Application Server.

Deploy the Web Application

Sun ONE supports WAR files to deploy the Web server, whereas, PTC does not use this methodology. To deploy the Web server, the definitions are added to the Sun ONE server.xml file.

1. Edit the *<Sun ONE>\domains\domain1\Windchill\config\server.xml* (Windchill represents your server name).
2. Navigate to the *<applications dynamic-reload-enabled>* tag

3. Insert the following code before the ending `</applications>` tag.

```
<web-module enabled="true" location="<Windchill install dir>\  
codebase" name="<Windchill web-app-name>" context-  
root="<Windchill web-app-name>" virtual-servers="server1"/>
```

For location, enter the fully qualified path name of the directory where you installed Info*Engine, for example, `/opt/ptc/Windchill`.

For name and context-root, enter the Web application context root value you entered when Info*Engine was installed.

For virtual-servers, enter the name of the server you created for Sun ONE, for example, `Windchill`.

Omit the `<` and `>` characters in your final results.

4. Save your changes and close the file.

Add Security Constraint Definition in web.xml

In this step, you will define the security constraints in the `web.xml` file.

1. Open the `<Windchill>\codebase\WEB-INF\web.xml` file in a text editor of choice.
2. Navigate to the end of the `<web-app>` tag.
3. Add the following security code within the `<web-app>` tag. In your application, additional entries may be included depending on the Windchill solutions installed.

```
<security-constraint>  
<web-resource-collection>  
<web-resource-name>Windchill Protected Area</web-resource-name>  
<url-pattern>/servlet/WindchillAuthGW/*</url-pattern>  
<url-pattern>/servlet/WindchillSAGW/*</url-pattern>  
<url-pattern>/servlet/IE/*</url-pattern>  
<url-pattern>/servlet/RPC/*</url-pattern>  
<url-pattern>/wtcore/jsp/*</url-pattern>  
<url-pattern>/netmarkets/jsp/*</url-pattern>  
<url-pattern>/infoengine/*</url-pattern>  
<url-pattern>/pdmlink/jsp/*</url-pattern>  
<url-pattern>/com/ptc/wvs/client/jsp/*</url-pattern>  
<url-pattern>/servlet/RSURLServlet/*</url-pattern>  
<url-pattern>/rs/jsp/jsp/*</url-pattern>  
<url-pattern>/install/jsp/*</url-pattern>  
<http-method>DELETE</http-method>  
<http-method>GET</http-method>  
<http-method>POST</http-method>  
<http-method>PUT</http-method>  
</web-resource-collection>  
<auth-constraint>  
<role-name>ANYONE</role-name>  
</auth-constraint>  
</security-constraint>
```

```
<login-config>
<auth-method>BASIC</auth-method>
<realm-name>Windchill</realm-name>
</login-config>
```

The role-name and realm-name tag values should be the values you specified when configuring the "Windchill" Sun ONE server.

4. Create a new sun-web.xml file and add it to the *<Windchill>*\codebase\WEB-INF directory.
 - a. In a text editor of choice, create sun-web.xml file.
 - b. Add the following code:

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE sun-web-app PUBLIC "-//Sun Microsystems, Inc.//DTD
Sun ONE Application Server 7.0 Servlet 2.3//EN"
'http://www.sun.com/software/sunone/appserver/dtds/sun-web-
app_2_3-0.dtd'>
<sun-web-app>
<session-config>
<session-manager/>
</session-config>
<class-loader extra-class-path="<Windchill install
dir>/codebase" delegate="true" />
<jsp-config/>
</sun-web-app>
```

The `<class-loader extra-class-path>` tag requires you to enter the fully qualified path name of the Windchill codebase file. Omit the `<` and `>` characters in your final results. For example:

```
<class-loader extra-class-path="/opt/ptc/Windchill/codebase"
delegate="true" />
```

- c. Save your changes and close the file.

Troubleshooting

Review this section for noted problems and workaround solutions.

Problem

The process to download a file that is executing on a machine where the Sun ONE Application Server is running can fail during the download.

Workaround Solution

- a. Navigate to *<virtual server directory>*/config for your Sun ONE Application Server installation.

- b. Locate the nsfc.conf file in the config directory. Create the nsfc.conf file if it does not exist.
- c. Add the following line to the nsfc.conf file:

```
TransmitFile=false
```
- d. Save your changes and close the nsfc.conf file.
- e. Restart the Sun ONE Application Server server to effect your changes.

Installation Summary

At this time, the Sun ONE Application Server is configured for Info*Engine and authentication is set to enable the administrative user to load the Windchill database.

19

Configuring Apache and Tomcat With Other Options

This chapter provides additional instructions to configure Tomcat and Apache for other options.

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Before You Begin

The typical installation and configuration scenario for Apache is that Apache is installed on the same machine as Info*Engine (local) and configured to support HTTP requests. Tomcat must be installed on the Info*Engine machine, as this is the only scenario PTC supports at this time. There are, however, other scenarios you may have for your environment, for example, running Apache on a machine other than Info*Engine (remote), reinstalling Apache after its initial installation, or running Apache in a more secure environment such as HTTPS.

The additional instructions in this chapter include:

- **Configuring Apache Ant** — A Java-based build tool used by PTC to configure and reconfigure Apache (and Tomcat) for Info*Engine and Windchill.
- **Running Tomcat as a Windows service** — Setting up Tomcat as a Windows service using Ant.
- **Running Tomcat and Apache as Windows services** — Setting up Tomcat and Apache as a Windows service using Ant.
- **Configurations for a remote Apache installation** — Apache is installed on a different machine than Info*Engine.
- **Setting permissions for Apache** — When the installation user for Apache and Info*Engine are different.
- **Configurations for a reinstallation of Apache** — A subsequent installation of Apache has taken place and overlays the initial version installed.

Setting Up Apache Ant

Apache Ant is a Java-based build tool that has been bundled (and installed) with Info*Engine. It is located in the root level of the Info*Engine installation directory. It is also available on the Windchill Application CD.

To use Ant, it must be located on the machine where the configurations are to take place, the access permissions must be set appropriately, and the environment variables set for Ant. At that point, Ant can be executed from the command line.

1. **Install Ant** — If the configurations are taking place on a machine other than the Info*Engine machine, or if the user performing the configurations does not have sufficient access permissions to the Ant files in the Info*Engine directory, then you must install Ant to a new location.
 - a. Select location where Ant should be installed (different machine or new directory on the Info*Engine machine) and create an installation directory for Ant, for example:

Windows: C:\ptc\Windchill\ant

UNIX: /opt/ptc/Windchill/ant

- b. Insert the Windchill Application CD in the CD-ROM.
 - c. Copy the ant.tar.gz file for UNIX or the ant.zip file for Windows from the /Apache/ManualInstall/ directory to the Ant directory.
 - d. Set the access permissions as required for the install user.
2. Uncompress the Ant file. Ant is packaged as a compressed file and it must be uncompressed before it can be used in application. This step must be performed for all installations of Ant, including the Ant files located in the Info*Engine installation directory.

Windows

- unzip ant.zip

UNIX

- gunzip ant.tar.gz
- tar -xf ant.tar.gz

3. Set the following environment variables:

ANT_HOME = <Ant installation directory>

JAVA_HOME= <Java SDK install directory>

PATH= <ANT_HOME>\bin

- On Windows, ANT_HOME is %ANT_HOME%
- On UNIX, ANT_HOME is \$ANT_HOME

Note: This note applies only to an installation of Info*Engine with Windchill. These environment variable settings are not required once Windchill Services is installed and delivers the windchill shell. The windchill shell sets the necessary environment variables for you, at which point, Ant can be run. Once the windchill shell is available and if you have reason to use Ant after Windchill Services is installed, then run the Ant command from the windchill shell.

4. To test Ant, at the command prompt execute the following command:

```
ant -help
```

You can also use the help command to review the other execution options available with Ant and to verify the Ant syntax.

Configurations When Apache is Installed Remotely

If you have elected to run Apache on a remote system (machine different than Info*Engine), then Apache must be able to recognize changes to the Windchill configuration environment and the Apache user account must have read privileges to the Windchill codebase directory. As changes occur in the Windchill configuration that impact the running environment, the changes are not automatically applied to the Apache installation. Consequently, you must manually update Apache with the most current Windchill environment settings.

Apache must be updated with changes to the Windchill installation whenever the Tomcat and Windchill configuration files are modified, such as when a Windchill application is installed or modified. During a Windchill application installation, environment settings particular to the installation are captured and applied to the Tomcat and Windchill configuration files. Therefore, for the same changes to be recognized by Apache, the configuration files must be copied to the Apache machine and updated using Ant.

Theoretically, these instructions should be executed following the installation of any Windchill application in order to capture the most current changes made to the Windchill configuration. However, if you are installing a suite of Windchill products, then you can simply perform these instructions after all the Windchill products are installed (or a group of them are installed) to capture the most recent environment changes.

To implement these instructions you will use the Apache Ant utility.

1. Install Apache using the Apache InstallAnywhere installer and the instructions provided to perform the installation.
2. Install and configure Apache Ant for the machine where Apache is installed. See [Setting Up Apache Ant](#).
3. Copy the content of the <Info*Engine>/apacheConf/config directory to a directory of choice on the Apache machine.

The apacheConf/config directory contains configuration files for Tomcat and Windchill. The content of these files is dynamic and changes to accommodate the installation of a Windchill application.

4. Change directory to the location where you copied the apacheConf/config files on the Apache machine.
5. Execute the following Ant command (entire string on one line) to apply the most recent Tomcat and Windchill changes to Apache.

```
ant -f applyApacheWebAppConfig.xml
-DAPACHE_HOME=<file path to Apache installation>
-DdocBase=<file path to Windchill codebase>
```


6. Create a shared file system of the Windchill codebase directory for Apache that meets your site requirements. There are several methods available to establish a shared file system, use a method appropriate for your site. The objective is to allow Apache to access the contents of the Windchill codebase directory.
 - Set access for the shared file system so that the Apache user account has read permission to the Windchill codebase directory. For example:

Windows: C:\ptc\Windchill\codebase (where C:\ptc\Windchill is the default installation directory for Windchill)

UNIX: /opt/ptc/Windchill/codebase (where /opt/ptc/Windchill is the default installation directory for Windchill)

Running Tomcat and Apache As Windows Services

To set up Tomcat or Apache to run as a Windows service, complete these instructions.

Running Tomcat as a Windows Service

Ant is used as the mechanism to set up Tomcat as a Windows service:

Install Service

Execute the Ant command from the Tomcat root directory:

```
ant -f config.xml installService  
-DJAVA_HOME=<SDK install directory>  
-DServiceName=<ServiceName>
```

Where *<SDK install directory>* is the full path to the directory where Java SDK is installed and *<ServiceName>* is a unique name you apply to reference this service.

For additional information about this option, execute the following command:

```
ant -f config.xml -projecthelp
```

Uninstall Service

```
ant -f config.xml uninstallService -DServiceName=<ServiceName>
```

Where *<SDK install directory>* is the full path to the directory where Java SDK is installed and *<ServiceName>* is a unique name you apply to reference this service.

Running Apache as a Windows Service

Instructions to configure Apache as a Windows service have been provided using the Apache Ant command and without the Ant command.

Without Ant

Execute this command from the Apache/bin directory:

```
apache -n <ServiceName>
```

Where <ServiceName> is a unique name to reference this service.

If you have Apache Ant installed, you can implement using the Ant command.

With Ant

Execute the Ant command from the Apache root directory:

```
ant -f config.xml installService -DServiceName=<ServiceName>
```

Where <ServiceName> is a unique name to reference this service.

Uninstalling the Apache Windows Service

Instructions to uninstall the Apache Windows service have been provided using the Apache Ant command and without the Ant command.

Uninstall without Ant

Execute this command from the <Apache>/bin directory.

```
apache -k uninstall -n <ServiceName>
```

Where <ServiceName> is the name you gave the Apache Windows service when you created it.

Uninstall with Ant

Execute this command from the <Apache> directory.

```
ant -f config.xml uninstallService -DserviceName <ServiceName>
```

Where <ServiceName> is the name you gave the Apache Windows service when you created it.

Apache and Info*Engine Installed With Different Users

If you installed Apache and Info*Engine using different user accounts, and Apache and Info*Engine are installed on the same machine, then the Info*Engine user account will not have privileges to update the Apache files. In this case, use the following instructions to configure Apache for Info*Engine.

To execute these commands, Apache Ant must be installed

1. Log in as the user that installed Apache.
2. Change directory to *<Windchill>/apacheConf/config* to access the files referenced in the command string.
3. From the command line, execute the following command:

```
ant -f applyApacheWebAppConfig.xml -DAPACHE_HOME=<Apache>
```

Where *<Apache>* is the directory location where Apache is installed.

Installing Apache A Second Time

If you installed Apache a second time (in a new location or in the same location but chose not to preserve the initial configuration), or you bypassed the option to configure Apache when you installed Info*Engine, then use the following instructions to configure Apache for Info*Engine.

To execute these commands, Apache Ant must be installed:

1. Change directory to *<Windchill>/apacheConf/config* to access the files referenced in the command string.
2. Execute the following from the command line:

```
ant -f applyApacheWebAppConfig.xml -DAPACHE_HOME=<Apache>
```

Where *<Apache>* is the directory location where Apache is installed.

Configuring a Non-PTC Apache (manual install)

If you already have Apache installed and it meets the version criteria defined in the Windchill 7.0 matrices, then you can use this version of Apache for Windchill with some minor alterations.

In order for your version of Apache to work with Windchill:

- The Apache binary must be configured so that it functions properly for Info*Engine (without any intervention or modification using PTC products).
- Apache must include the appropriate LDAP authentication modules (Apache `mod_auth_ldap` for Apache 2.0.x, `auth_ldap` for Apache 1.3.x) and the conf files must load them properly. PTC does not provide the module files to support this scenario.
- Apache must include the `mod_jk` module and the conf files must load properly. Also, the configuration line that loads `mod_jk` must precede the configuration line that includes `tomcat.conf`. PTC does not provide the `mod_jk` files to support this scenario.

Caution: Warning for Windows users. An installation of Apache on or under a Windows drive letter obtained by using the Windows Map Network Drive utility (for example, Windows Explorer > Tools) is not supported. Apache does not operate reliably when located on a mapped drive. Instead, select a local drive such as C or D for installation.

Complete the following instructions to alter your Apache installation for Windchill. After these changes are applied, the PTC installers and Ant scripts will be able to modify your version Apache in the same manner and with the same updates as the PTC-supplied Apache.

1. Configure your Apache so that the PTC installers can process it.

PTC has provided files to overlay and add to your Apache installation. The files are located on the Windchill Third Party Software CD in the Apache/ManualInstall directory. These files must be expanded into your Apache installation to enable the PTC installers to configure your Apache.

- a. Insert the Windchill Third Party Software CD.
- b. Navigate to the Apache/ManualInstall directory.
- c. Expand the compressed files into the *<Apache>* directory (root level).
 - Windows: Unzip the files.
 - UNIX: Gunzip and untar the files.

2. Edit the *<Apache>/conf/httpd.conf* file and add the following lines:

```
AddDefaultCharset Off  
  
BrowserMatch "MSIE" force-no-vary
```

Note: The BrowserMatch entry is used to address a Microsoft Internet Explorer bug that impacts Windows clients.

3. Save your changes and close the file.

This completes the changes for your Apache.

Specifying Web Server Authentication

PTC has provided several methods (Ant scripts) to improve and simplify the configuration of the Apache Web server for Windchill. A commonly used script is the webAppConfig.xml Ant script. For example, it is used by the installers (along with config.xml) to perform the configuration of Apache's management of the Info*Engine Web application. Other webAppConfig.xml uses include:

- Manages the generation (and regeneration) of the app-*<Web application>*-Auth.conf and app-*<Web application>*.conf files. These files contain the authentication parameters for the Windchill products. They are reproduced in their entirety each time an update occurs, thus, manual changes applied to the files are lost.
- Ensures that the Web application settings that apply to the Windchill system are applied to all the entries in the app-*<Web application>*-Auth.conf file.

During the update, the webAppConfig.xml script retains the existing data in the file while it applies the new changes saving you the effort of entering the data that already exists.

The following sub-sections provide instructions to implement various Info*Engine authentication strategies using the webAppConfig.xml Ant script.

Specifying a Resource (URL) to Authenticate

By default, Info*Engine does not configure Apache to require authentication of the Info*Engine URLs. Info*Engine does not require authentication. To specify that a given directory, file, or servlet (and URL within the Info*Engine Web application), be authenticated by Apache, you can execute the following command to set authentication for Info*Engine. The command must be run from the Apache root directory and the command string must be entered on one line:

```
ant -f webAppConfig.xml addAuthResource
-DappName=<Web application name>
-Dresource=<relative URL of resource to authenticate>
```

Where *<Web application name>* is the Web name you assigned to Info*Engine. Where *<relative URL of resource to authenticate>* is the relative path from the Web application to the resource to authenticate, for example, the section for the URL after http[s]://hostname:port/.../*<Web application name>*/... The *<relative URL of resource to authenticate>* can be a directory, for example, wtcore/jsp, in which case it applies to everything in that directory, or a particular file, for example, foo/info.html.

For example, to require authentication to access the IE servlet in an installation where the Web application name is MyInfoEngine, the command would look like:

```
ant -f webAppConfig.xml addAuthResource -DappName=MyInfoEngine
-Dresource=servlet/IE
```

Specifying an LDAP URL for Authentication

To specify an LDAP URL to use as the basis of authentication from Apache, issue the following command. The command string must be entered on one line:

```
ant -f webAppConfig.xml regenWebAppConfig
-DappName=<Web application name> -DldapUrl=<LDAP URL>
```

This command can also be used to change the LDAP URL used for authentication, for example, changing from the Aphelion directory to a corporate LDAP.

To add users to the LDAP, consult the *Aphelion Directory 2002 Administration Guide*.

Specifying a Bind DN for the LDAP URL

To specify a bind DN and password through which the LDAP URL should be accessed, for example, when the LDAP does not allow anonymous bind access, then issue the following command. The command string must be entered on one line:

```
ant -f webAppConfig.xml regenWebAppConfig
-DappName=<Web application name>
-DanonBind=false DbindDn=<bindDN>
-DbindPwd=<bindPassword>
```

Specifying a Password File

Although LDAP is a preferred means of password management as compared to a password file, there are cases where the use of a supplementary password file is appropriate.

One example where a password file is useful is when a read-only LDAP directory (for example, corporate directory) is used as the primary basis of authentication and some pseudo-users such as system administration are desired. Info*Engine can easily access information from multiple LDAP directory, but typical Web servers, including Apache, do not provide a means to authenticate a single resource (URL) using information in multiple LDAP directories. A solution to this issue in this case is to define passwords for the few pseudo-users in a password file and point apache at the corporate LDAP for the remaining corporate users.

To accomplish this, issue the following command. The command string must be entered on one line:

```
ant -f webAppConfig.xml regenWebAppConfig
-DappName=<Web application name>
-DpwdFileEnabled=true
-DpwdFilename=<desired name of password file>
```

This command specifies that Apache use the given password file as a basis of authentication, and create the file if it does not exist (should reside in the Apache conf directory). It will not, however, add users to the password file; to do this use the Apache htpasswd command.

The htpasswd command, which is located in the <Apache>/bin directory, is used to define users to the Apache Web server. To add more users to the wtpasswd file or to modify passwords in the file, use the following format of the command:

```
htpasswd "<Apache>/conf/wtpasswd" <user name>
```

At the prompt, enter a password for user, *<user name>*.

Note: The quotation marks are required if the Apache installation directory path you enter in place of *<Apache>* contains spaces.

Configure Authentication Realm Name

The authentication realm name appears in the authentication name and password log in dialog window. The default value is Windchill. To change this value, the variable must be manually configured.

To change the realm name, the ant command is executed from the command line. The command must be run from the Apache root directory:

```
ant -f webAppConfig.xml regenWebAppConf -DappName=<your Web  
application name> -DauthRealm=<your realm name>
```

Where *<your Web application name>* is the Web application name you assigned, for example, Windchill. Where *<your realm name>* is a value of your choice.

A

Troubleshooting the Installation

This appendix provides information to assist you in troubleshooting the FrameMaker configuration.

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Troubleshooting Your Info*Engine Installation

This section provides information about common configuration problems. Additional troubleshooting tips related to installing the Windchill products are listed in the [About Installing Windchill Products](#) chapter.

The application log files can also be helpful when troubleshooting your configuration. The following is a list of some of the product log files:

- Tomcat — *<Tomcat>/logs*
- Apache — *<Apache>/logs*
- Info*Engine — *<Info*Engine>/logs*
- Aphelion on Windows — *<Aphelion>/usr/var/lde/PTCLdap/PTCLdap_logs/*
- Aphelion on UNIX — */opt/lde/var/lde/PTCLdap/PTCLdap_logs/*

Problem:

Cannot successfully receive data from an out-of-process adapter configured in a pre-6.0 Info*Engine release.

Action:

By default, the current version of Info*Engine sends requests as java serialized objects to preserve type information, propagate exceptions with supplemental data, and so on. Previously released adapters are expecting XML requests and are be able to handle the default request Info*Engine sends. On each adapter form there is a drop down near the top labeled "Serialization Type" with options of "xml" or "java". When configuring a pre-6.0 out-of-process adapter, you must select "xml" so that requests sent to that adapter are sent in a form it can understand.

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