Tivoli® IBM Tivoli Configuration Manager

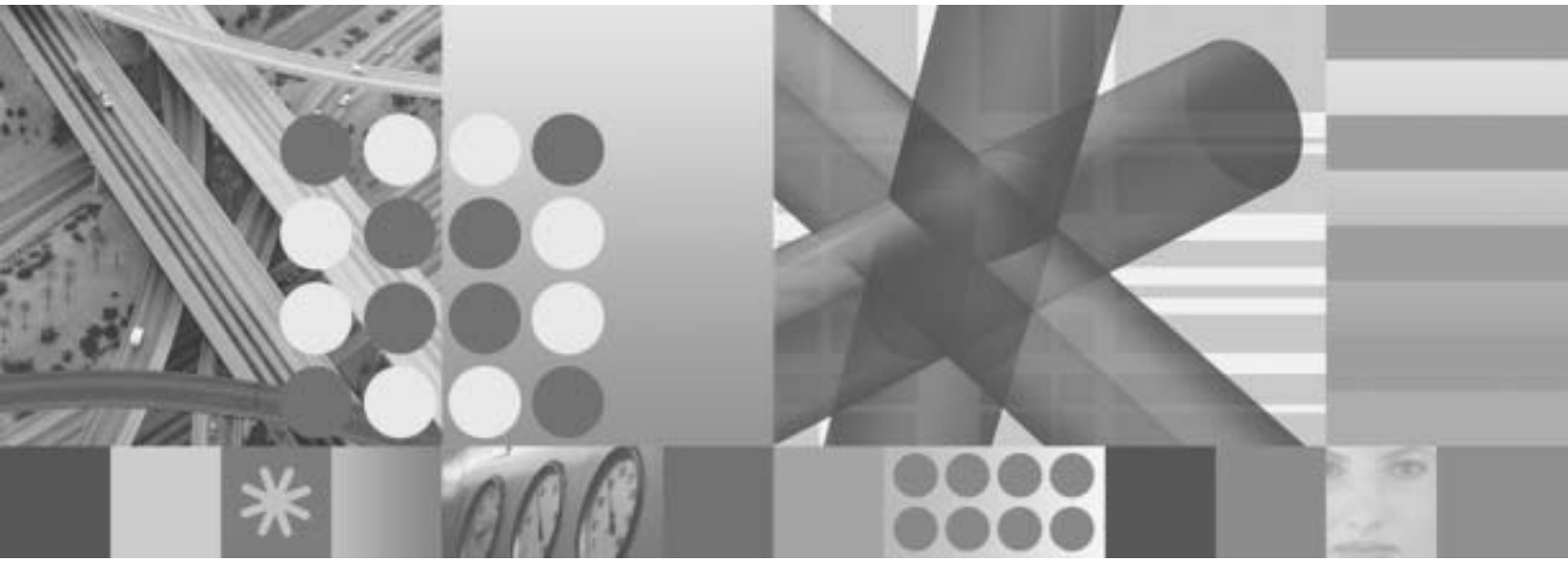
version 4.3.1

Planning and Installation Guide

GC23-4702-05

Tivoli® IBM Tivoli Configuration Manager

version 4.3.1



Planning and Installation Guide

GC23-4702-05

Note

Before using this information and the product it supports, read the information in “Notices” on page 153.

This edition applies to version 4 release 3 modification level 1 of IBM Tivoli Configuration Manager (program number 5724-C06) and to all subsequent releases and modifications until otherwise indicated in new editions.

This edition replaces GC23-4702-04.

Contents

Figures

Tables

About This Guide

IBM® Tivoli® Configuration Manager Planning and Installation explains how to plan or upgrade your deployment of IBM Tivoli Configuration Manager in a Tivoli environment as well as how to install, upgrade, and uninstall the components of IBM Tivoli Configuration Manager using the available installation mechanisms.

Who Should Read This Guide

This guide is for system architects, system administrators, and technical specialists who are responsible for the planning and installation of IBM Tivoli Configuration Manager. Users of this guide should have knowledge about the following technologies:

- PC and UNIX® operating systems
- Database architecture and concepts
- Graphical and command line interfaces

What This Guide Contains

This guide contains the following sections:

- Chapter 1, “Overview of Configuration Management,” on page 1

  Introduces the configuration management architecture and how this architecture is used in the context of a Tivoli environment.
- Chapter 2, “Planning a Configuration Management Environment,” on page 15

  Provides the information needed to create a deployment plan and to select the appropriate installation mechanism for installing or upgrading IBM Tivoli Configuration Manager.
- Chapter 3, “Component Installation Prerequisites,” on page 23

  Provides planning information for installing each of the IBM Tivoli Configuration Manager installation images.
- Chapter 4, “Working With Repositories and Queries,” on page 51

  Provides information about running the admin and schema scripts required by the relational database management system (RDBMS) Interface Module (RIM) objects created during the installation of the various components of IBM Tivoli Configuration Manager.
- Chapter 5, “IBM Tivoli Configuration Manager Installation and Upgrade,” on page 75

  Provides the information required to install, upgrade, and uninstall the IBM Tivoli Configuration Manager server scenarios, using the available installation mechanisms.
- Chapter 6, “Desktop Installation,” on page 115

  Provides the information required to install, upgrade, and uninstall the IBM Tivoli Configuration Manager desktop scenario, using the available installation mechanisms.
- Chapter 7, “Maintaining and Troubleshooting a Configuration Management Environment,” on page 123

Provides information about resolving problems that you might encounter while installing, configuring, or upgrading IBM Tivoli Configuration Manager in a Tivoli environment.

- Appendix A, "Installation Mechanisms Provided by Tivoli Management Framework," on page 137

  Provides the information required to install and upgrade IBM Tivoli Configuration Manager using the available installation mechanisms.
- Appendix B, "Uninstalling IBM Tivoli Configuration Manager," on page 145

  Provides the information required to uninstall IBM Tivoli Configuration Manager using the available installation mechanisms.
- Appendix C, "Accessibility," on page 147

  Provides information about the accessibility features of the InstallShield wizard.
- Appendix D, "Support information," on page 149

  Provides information about obtaining support for IBM products.

Publications

This section lists publications in the IBM Tivoli Configuration Manager library and any other related documents. It also describes how to access Tivoli publications online and how to order Tivoli publications.

IBM Tivoli Configuration Manager Library

The following documents are available in the IBM Tivoli Configuration Manager library:

- *Release Notes*, GI11-0926

  Contains the latest information about this release of IBM Tivoli Configuration Manager, including installation and upgrade notes; software limitations, problems, and workarounds; documentation notes; and internationalization notes.
- *Introducing IBM Tivoli Configuration Manager*, GC23-4703

  Explains the concepts of IBM Tivoli Configuration Manager and its components and provides a road map to the IBM Tivoli Configuration Manager documentation.
- *User's Guide for Software Distribution*, SC23-4711

  Explains the concepts and procedures necessary to effectively distribute software over networks using the Software Distribution component of IBM Tivoli Configuration Manager.
- *Reference Manual for Software Distribution*, SC23-4712

  Provides in-depth information about the IBM Tivoli Configuration Manager commands used by the Software Distribution component and explains advanced features, concepts, and procedures necessary to effectively use the Software Distribution component.
- *User's Guide for Inventory*, SC23-4713

  Explains the concepts and procedures necessary to effectively use the Inventory component of IBM Tivoli Configuration Manager and provides in-depth information about the commands used by the Inventory component.

- *Messages and Codes*, SC23-4706

  Provides details of the messages generated by the IBM Tivoli Configuration Manager components.
- *Inventory Online Help*

  Provides related information about using the Inventory graphical user interface (GUI).
- *Database Schema Reference*, SC23-4783

  Describes the IBM Tivoli Configuration Manager database tables.
- *User's Guide for Deployment Services*, SC23-4710

  Describes the common support and management tasks provided by Deployment Services for Software Distribution and Inventory.
- *Patch Management Guide*, SC23-5263

  Describes a solution that covers the distribution and management of security patches and software updates in a Tivoli environment.
- *IBM Tivoli Configuration Manager: Guide for Active Directory Integration*, SC32-2285

  Describes the integration of Microsoft Active Directory with your Tivoli environment.
- *IBM Tivoli Configuration Manager: License Management Extension*, SC32-2260

  Describes the license management facilities provided in your Configuration Manager environment.
- *IBM Tivoli Configuration Manager: User's Guide for Operating System Deployment Solution*, SC32-2578

  Describes how you can implement an operating system deployment solution delivered with Configuration Manager.

Prerequisite Publications

To use the information in this guide effectively, you must have some prerequisite knowledge, which you can obtain from the following guides:

- *Tivoli Management Framework Planning for Deployment*, GC32-0803

  Explains how to plan for deploying your Tivoli environment. It also describes Tivoli Management Framework and its services.
- *Tivoli Enterprise Installation Guide*, GC32-0804

  Explains how to install and upgrade Tivoli Enterprise™ software within your Tivoli region using the available installation mechanisms provided by Tivoli Software Installation Service and Tivoli Management Framework. Tivoli Enterprise software includes the Tivoli management region server (Tivoli server), managed nodes, gateways, endpoints, and RIM objects. This guide also provides information about troubleshooting installation problems.
- *Tivoli Management Framework Reference Manual*, SC32-0806

  Provides in-depth information about Tivoli Management Framework commands. This manual is helpful when writing scripts that are later run as Tivoli tasks. This manual also documents default and validation policy scripts used by Tivoli Management Framework.
- *Tivoli Management Framework Release Notes*, GI11-0890

  Describes the latest installation information, including supported platforms, defects, and limitation for Tivoli Management Framework.

Related Publications

The following documents also provide useful information:

- *IBM Tivoli Configuration Manager: Warehouse Enablement Pack: Implementation Guide*

  Describes how to install and configure the warehouse enablement pack for the IBM Tivoli Configuration Manager product and describes the data flow and structures that are used by the warehouse pack.

The *Tivoli Software Glossary* includes definitions for many of the technical terms related to Tivoli software. The *Tivoli Software Glossary* is available at the following Tivoli software library Web site:

http://publib.boulder.ibm.com/tividd/glossary/tivoliglossarymst.htm

Accessing Publications Online

The documentation CD contains the publications that are in the product library. The format of the publications is PDF, HTML, or both. Refer to the readme file on the CD for instructions on how to access the documentation.

IBM posts publications for this and all other Tivoli products, as they become available and whenever they are updated, to the Tivoli software information center Web site. Access the Tivoli software information center by first going to the Tivoli software library at the following Web address:

http://www.ibm.com/software/tivoli/library/

Scroll down and click the **Product manuals** link. In the Tivoli Technical Product Documents Alphabetical Listing window, click the **IBM Tivoli Configuration Manager** link to access the product library at the Tivoli software information center.

Note: If you print PDF documents on other than letter-sized paper, set the option in the **File → Print** window that allows Adobe Reader to print letter-sized pages on your local paper.

Ordering Publications

You can order many Tivoli publications online at the following Web site:

http://www.elink.ibmlink.ibm.com/public/applications/publications/cgibin/pbi.cgi

You can also order by telephone by calling one of these numbers:

- In the United States: 800-879-2755
- In Canada: 800-426-4968

In other countries, see the following Web site for a list of telephone numbers:

http://www.ibm.com/software/tivoli/order-lit/

Accessibility

Accessibility features help users with a physical disability, such as restricted mobility or limited vision, to use software products successfully. With this product, you can use assistive technologies to hear and navigate the interface. You can also use the keyboard instead of the mouse to operate all features of the graphical user interface.

For additional information, see Appendix C, “Accessibility,” on page 147.

Tivoli technical training

For Tivoli technical training information, refer to the following IBM Tivoli Education Web site:

http://www.ibm.com/software/tivoli/education

Support information

If you have a problem with your IBM software, you want to resolve it quickly. IBM provides the following ways for you to obtain the support you need:

- Searching knowledge bases: You can search across a large collection of known problems and workarounds, Technotes, and other information.
- Obtaining fixes: You can locate the latest fixes that are already available for your product.
- Contacting IBM Software Support: If you still cannot solve your problem, and you need to work with someone from IBM, you can use a variety of ways to contact IBM Software Support.

For more information about these three ways of resolving problems, see Appendix D, “Support information,” on page 149.

Conventions Used in This Guide

This guide uses several conventions for special terms and actions, operating system-dependent commands and paths, and margin graphics.

Typeface Conventions

This guide uses the following typeface conventions:

Bold

- Lowercase commands and mixed case commands that are otherwise difficult to distinguish from surrounding text
- Interface controls (check boxes, push buttons, radio buttons, spin buttons, fields, folders, icons, list boxes, items inside list boxes, multicolumn lists, containers, menu choices, menu names, tabs, property sheets), labels (such as **Tip:**, and **Operating system considerations:**)
- Keywords and parameters in text

Italic

- Words defined in text
- Emphasis of words (words as words)
- New terms in text (except in a definition list)
- Variables and values you must provide

`Monospace`

- Examples and code examples
- File names, programming keywords, and other elements that are difficult to distinguish from surrounding text
- Message text and prompts addressed to the user
- Text that the user must type
- Values for arguments or command options

Operating System-Dependent Variables and Paths

This guide uses the UNIX convention for specifying environment variables and for directory notation.

When using the Windows command line, replace **$***variable* with **%***variable***%** for environment variables and replace each forward slash (*/*) with a backslash (\) in directory paths. The names of environment variables are not always the same in Windows and UNIX. For example, %TEMP% in Windows is equivalent to $tmp in UNIX.

Note: If you are using the bash shell on a Windows system, you can use the UNIX conventions.

Chapter 1. Overview of Configuration Management

The primary components of IBM Tivoli Configuration Manager are Inventory and Software Distribution. The other components provided by IBM Tivoli Configuration Manager can be considered subcomponents, or services, of one of these components. For information about how these components and services interrelate to create a configuration management environment within a Tivoli environment, see *Introducing IBM Tivoli Configuration Manager*.

These components and services can be installed in a Tivoli environment on the following types of Tivoli managed resources in a Tivoli management region (Tivoli region):

- Tivoli management region server (Tivoli server)
- Managed node, which can also be configured as a gateway, or as a repeater
- Endpoint

Basic Tivoli Environment

The Tivoli server and managed nodes are created by installing Tivoli Management Framework. Endpoints are created by installing the Tivoli Management Framework endpoint services on a system. When managed resources (managed node, gateway, repeater, endpoints, and pervasive devices) are installed or defined in your distributed network, they become your Tivoli environment. Note that pervasive devices connect to your Tivoli environment through endpoints.

Your Tivoli environment can be created before installing IBM Tivoli Configuration Manager (See *Tivoli Enterprise Installation Guide*), or it can be created or upgraded during the installation of IBM Tivoli Configuration Manager. If you currently are using Tivoli Enterprise software to manage your distributed network, you already have a Tivoli environment and can use IBM Tivoli Configuration Manager to upgrade your Tivoli environment to the current level.

Install the Automated Patch Management solution to manage the distribution of Microsoft software updates and hotfixes in a Tivoli environment (see also the *IBM Tivoli Configuration Manager Patch Management Guide*).

For information required to understand how to create or upgrade your Tivoli environment before installing or upgrading IBM Tivoli Configuration Manager, see *Tivoli Management Framework Planning for Deployment* and *Tivoli Enterprise Installation Guide.*

For information about creating a Tivoli server with the components of IBM Tivoli Configuration Manager on it, use the information and instructions provided in this document. Even if you are using the InstallShield wizard provided by IBM Tivoli Configuration Manager to create a Tivoli server, you still need to create the remainder of your Tivoli environment using the information and instructions in *Tivoli Management Framework Planning for Deployment* and *Tivoli Enterprise Installation Guide.*

For information about upgrading your Tivoli environment with the most current level of Tivoli Management Framework and IBM Tivoli Configuration Manager, use the information and instructions provided in this document.

IBM Tivoli Configuration Manager Components and Services

All of the components listed in this section can be installed using either the InstallShield wizard (see Chapter 5, "IBM Tivoli Configuration Manager Installation and Upgrade," on page 75 and Chapter 6, "Desktop Installation," on page 115), or using Tivoli Management Framework installation mechanisms (see Appendix A, "Installation Mechanisms Provided by Tivoli Management Framework," on page 137). The following components can be installed on the Tivoli server and managed nodes:

Activity Planner
Installs the Activity Planner component. This component relies on a Relational Database Management System (RDBMS) Interface Module (RIM) object and relies on configured table space in the `planner` repository.

Change Manager
Installs the Change Manager component. This component relies on a RIM object and relies on configured table space in the `ccm` repository.

Enterprise Directory Query Facility
Installs the Enterprise Directory Query Facility component. This component relies on a preconfigured Lightweight Directory Access Protocol (LDAP) directory server. This component is used with the Change Manager and Resource Manager components and enables a Change Manager administrator to perform operations on all users defined in the LDAP server. If you do not install the Resource Manager component, you will not be able to perform a distribution on the users defined in the LDAP server, but you will be able to perform a query to the LDAP server.

Inventory
Installs the inventory component. The component relies on RIM objects and relies on configured table space in the configuration repository.

Inventory Gateway
Installs the files that enable a gateway to recognize inventory methods, download these methods to endpoints, and run methods to perform the requested inventory action.

Patch Management
Installs the Patch Management component. This component allows administrators to distribute and manage security patches and software updates for supported Windows workstations in a Tivoli environment. For details on how to install it see the *IBM Tivoli Configuration Manager Patch Management Guide*. See the *IBM Tivoli Configuration Manager Release Notes* for details of supported Windows workstations.

Pristine Manager
Installs the Pristine Manager component. This allows you to install an operating system on a pristine machine. This component relies on a RIM object and relies on configured table space in the `pristine` repository.

Pristine Manager Gateway
Installs the files that enable a gateway to recognize Pristine Manager, download these methods to endpoints, and run methods to perform the requested Pristine Manager action.

Resource Manager
Installs the Resource Manager component. This component relies on a RIM object and relies on configured tables in the configuration repository.

Resource Manager Gateway
Installs the files that enable a gateway to recognize resource management methods, download these methods to endpoints, and run resource management actions.

Scalable Collection Service
Installs the Scalable Collection Service patch. This patch is required before you install the Inventory components.

Software Distribution
Installs the Software Distribution component. This component includes the source host capability, the historical database feature, and the IBM Tivoli Enterprise Console® integration. You must install the Software Distribution component on the Tivoli® server before you can install either the Software Distribution or Software Distribution Gateway component on any managed node in the local Tivoli region.

Software Distribution Gateway
Installs the files that enable a gateway to recognize software distribution methods, download these methods to endpoints, and run the methods to perform the requested software distribution operation.

Software Package Editor
Installs the files that enable the Tivoli desktop to launch the Software Package Editor. This component enables you to use to create and test software packages. The Software Distribution component is a prerequisite for the Software Package Editor component.

Web Infrastructure
Installs the Web Infrastructure component. This component allows administrators to create Web objects that can be used through a Web browser to perform certain configuration management operations. This component is used with the Web Interface and Web Gateway components that are installed on endpoints.

Note: The Web Interface and Web Gateway components are not released with IBM Tivoli Configuration Manager, version 4.3.1 If you plan to use IBM Tivoli Configuration Manager, version 4.3.1 in association with these components, you have the following options:

- Maintain a Tivoli region, version 4.2.3, dedicated to the Web Interface and Web Gateway components.
- Migrate a working environment, version 4.2.3 where the Web Interface and Web Gateway components are installed, to version 4.3.1.
- Perform a fresh installation of IBM Tivoli Configuration Manager, version 4.3.1 and install the Web Interface and Web Gateway components from the installation images provided with IBM Tivoli Configuration Manager, version 4.2.3, Fix Pack 4 or later. For more information about the installation procedure, refer to *IBM Tivoli Configuration Manager: Planning and Installation Guide* version 4.2.3 (revised December 22, 2006).

Query Directory for Microsoft Active Directory
Installs the Query Directory for Microsoft Active Directory component. This component can be installed on a Windows server or managed node. This component relies on a Relational Database Management System (RDBMS) Interface Module (RIM) object and relies on `ad_db` tablespace in the `planner` repository.

Query Directory for Microsoft Active Directory - Command line interface
Installs the Query Directory for Microsoft Active Directory - Command line interface component. This component can be installed on a managed node.

Tivoli Provisioning Manager for Operating System Deployment integration
Installs the Tivoli Provisioning Manager for Operating System Deployment integration. This component can be installed on managed nodes where Activity Planner is installed.

CM Extension for Tivoli License Manager
Installs the CM Extension for Tivoli License Manager. This component can be installed on the Tivoli management region server, after having installed the Inventory and Software Distribution components.

CM Endpoint Extension
Installs the CM Endpoint Extension. This component can be installed on gateways where the Inventory Gateway component is installed.

Endpoint Components and Services

IBM Tivoli Configuration Manager components and services installed on endpoints use software package blocks (SPBs) as their installation image. The majority of these components can be installed using an interactive session of the provided InstallShield wizard. You can, however, install these images from the SPBs using a profile distribution from the Tivoli server or by installing them locally using a disconnected SPB installation.

The following components can be installed on endpoints:

Desktop Administrative Interfaces
Installs Tivoli Desktop for Windows. When installing this component, you can also install the software required by the administrative interfaces. These interfaces are used by the following IBM Tivoli Configuration Manager Windows components :

- Activity Planner
- Change Manager
- Inventory
- Distribution Status Console

Software Package Editor
Installs the files that enable you to use the Software Package Editor when not connected to the Tivoli environment. This component enables you to create and test software packages.

Web Interface
Installs the Web Interface component. When installing this component, you also install the associated plug-in software. These plug-ins are used by the following IBM Tivoli Configuration Manager components:

- Inventory
- Software Distribution

This component is not released with IBM Tivoli Configuration Manager, version 4.3.1. If you plan to use IBM Tivoli Configuration Manager, version 4.3.1 in association with this component, you have the following options:

- Maintain a Tivoli region, version 4.2.3, dedicated to the Web Interface component.

- Migrate a working environment, version 4.2.3 where the Web Interface is installed, to version 4.3.1.
- Perform a fresh installation of IBM Tivoli Configuration Manager, version 4.3.1 and install the Web Interface from the installation images provided with IBM Tivoli Configuration Manager, version 4.2.3, Fix Pack 4 or later. For more information about the installation procedure, refer to *IBM Tivoli Configuration Manager: Planning and Installation Guide* version 4.2.3 (revised December 22, 2006).

Web Gateway

Installs the Web Gateway component and device management code. With this component you can access Web objects and perform device management in the extended Tivoli environment.

This component is not released with IBM Tivoli Configuration Manager, version 4.3.1. If you plan to use IBM Tivoli Configuration Manager, version 4.3.1 in association with this component, you have the following options:

- Maintain a Tivoli region, version 4.2.3, dedicated to the Web Gateway component.
- Migrate a working environment, version 4.2.3 where the Web Gateway is installed, to version 4.3.1.
- Perform a fresh installation of IBM Tivoli Configuration Manager, version 4.3.1 and install the Web Gateway from the installation images provided with IBM Tivoli Configuration Manager, version 4.2.3, Fix Pack 4 or later. For more information about the installation procedure, refer to *IBM Tivoli Configuration Manager: Planning and Installation Guide* version 4.2.3 (revised December 22, 2006).

Resources in a Configuration Management Environment

The components of IBM Tivoli Configuration Manager rely on the resources and management concepts provided by Tivoli Management Framework. These components support the concept of *management by subscription*, which is managing network resources by creating profiles and distributing them to subscribers (targets). With the use of the Web Interface component, you can perform pull operations from a Web browser.

The following sections provide overview information and figures about the components and services of IBM Tivoli Configuration Manager, and it combines all these overviews into a single conceptual resource model.

Resources Used for Inventory Scans

When inventory profiles are distributed to their targets, inventory scans are done and the results are collected.

Figure 1 on page 6 shows the relationship among the Inventory components. An inventory profile is distributed through the repeater hierarchy to its targets. The inventory scan is performed on each target and the information is returned through the collector hierarchy to the inventory data handler. The data passes from the inventory data handler through the RIM host to the configuration repository on the RDBMS server. Queries can be run against the stored data in the configuration repository.

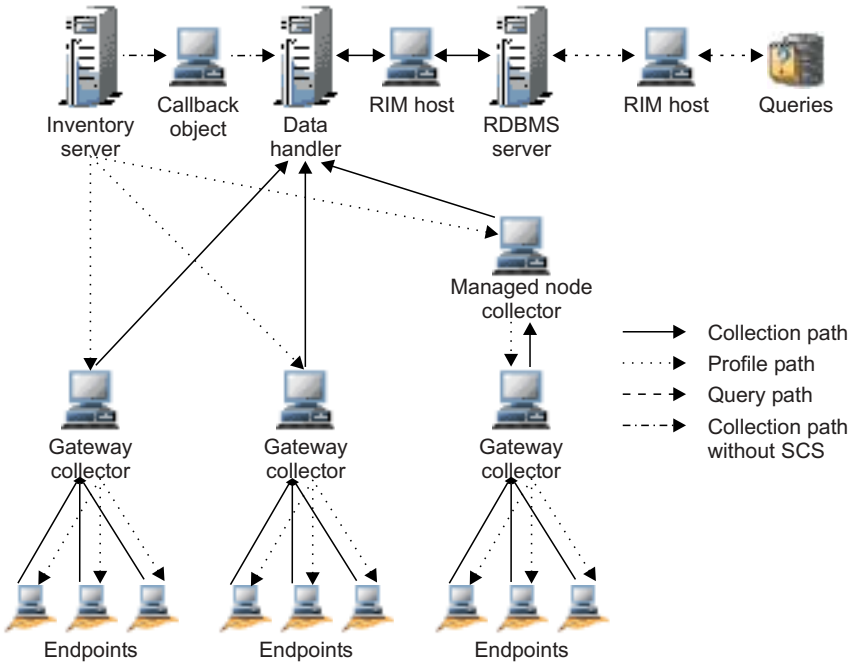


Figure 1. Inventory Components and Their Relationships

Scalable Collection Service (SCS) manages the collection of data in a Tivoli environment from the endpoint, through the repeater hierarchy, to the RDBMS.

Resources Used for Enterprise Directory Query Facility

Users are defined in an LDAP server. You can import users who are defined in the LDAP server and create an association between a user and an endpoint. Users are stored in a Resource Manager server. When a distribution is performed, the distribution is to an endpoint associated with the user.

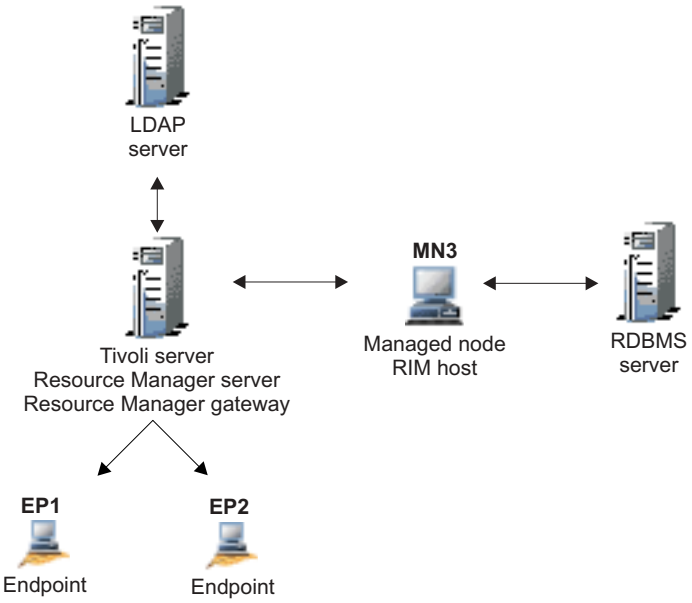


Figure 2. Enterprise Directory Query Facility Components and Their Relationships

Resources Used for Software Distributions

When software packages are distributed to their targets, the software is installed on these systems.

Figure 3 shows the relationship among the Software Distribution components. A software package is created and stored on a source host. A software distribution profile is distributed through the repeater hierarchy to its targets. The results of the distribution are returned through the repeater hierarchy to the configuration repository. Queries can be run against the stored data in the configuration repository.

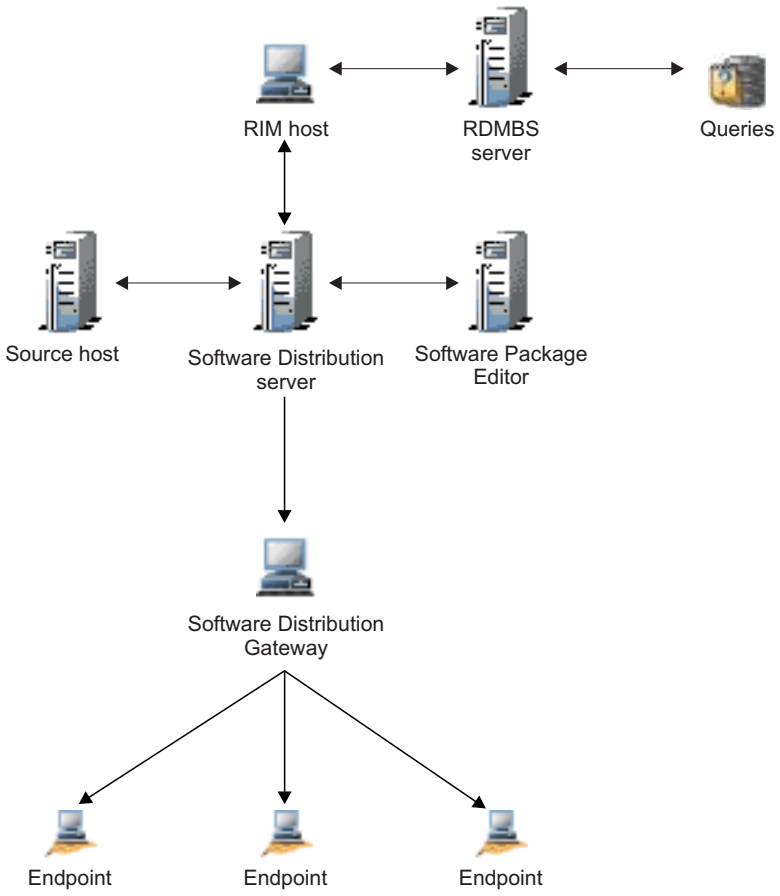


Figure 3. Software Distribution Components and Their Relationships

Resources Used for Resource Management

When software distributions or inventory scans are distributed to pervasive devices, they need to be processed and handled by the Web Gateway component.

Figure 4 on page 8 shows the relationships between the Resource Manager and Web Gateway components. Resource management operations are performed against the resource gateway (the Web Gateway component) that maintains a list of enrolled devices. Notification of these operations are returned through the repeater hierarchy using the scalable collection service (as shown in Figure 1 on page 6) to the configuration repository.

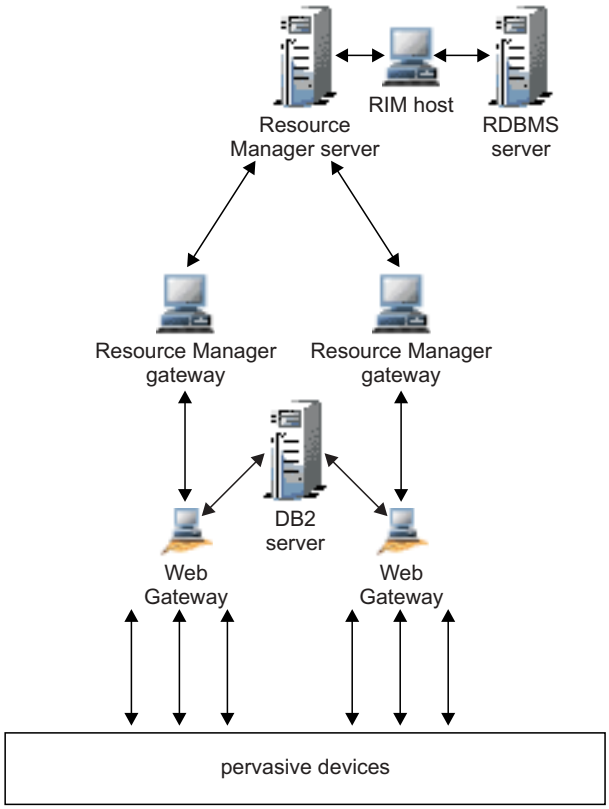


Figure 4. Resource Manager and Web Gateway Components and Their Relationships

Resources Used for Web Operations

When software distributions, inventory scans, or other IBM Tivoli Configuration Manager operations need to be performed from a Web browser, users can pull the distributions from a HTTP server which resides on the WebSphere® Application Server. Before accessing these Web objects, a user can be authenticated and granted permission to the Web objects through the IBM Tivoli Access Manager WebSEAL option.

Figure 5 on page 9 shows the relationship among the Web Gateway and Web Interface components. In this figure, the Web Gateway database, Web Gateway server, Web server, and the WebSphere Application Server are on the same system. The IBM Tivoli Access Manager and IBM Tivoli Access Manager WebSEAL are on separate systems. WebSEAL must be directly accessed by the final Web user, while Access Manager should be located behind a firewall with respect to the Web user network. Access Manager contains the database of the users that are granted to perform access to the WebUI Web interface and to download the Web objects they have been assigned to manage. The DB2® database is on another server. In this figure, the following process flow occurs:

1. A Tivoli administrator publishes a Web object using the **wweb** command.
2. A user from a workstation connects to the Web server and is prompted for a user ID and password.
3. The user provides these options and the request is forwarded for validation.
4. If the user is authenticated and authorized, a Web page is displayed that contains the available Web objects.

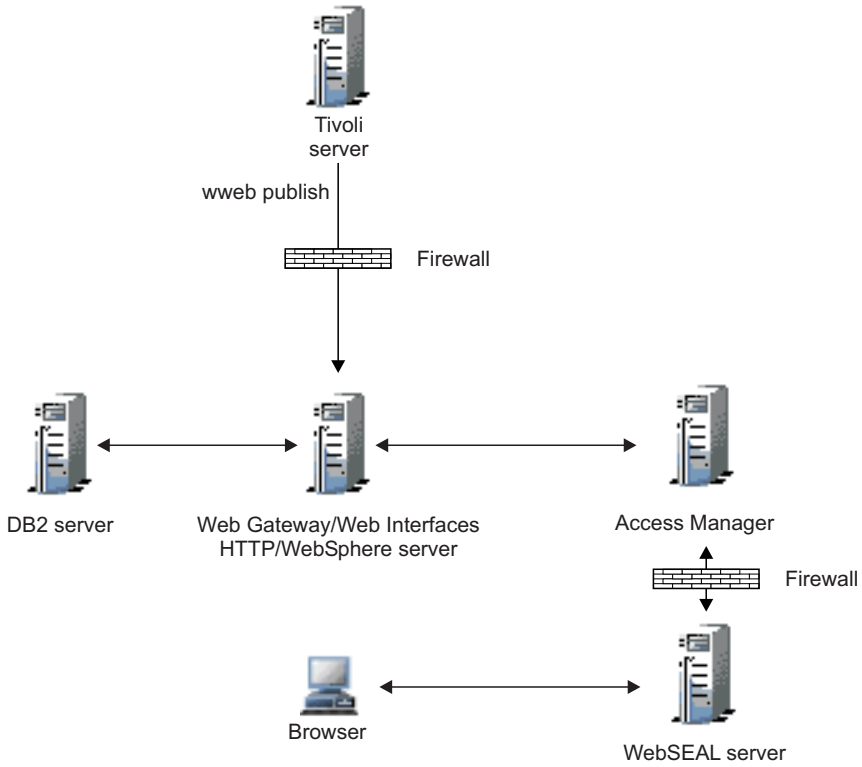


Figure 5. Web Interface Components and Their Relationships

Resources Used for Pristine Manager

With Pristine Manager, you can perform remote, unattended pristine installations without having to use a boot diskette on site. You can also install on machines that are already configured, for example, to reinstall the operating system or a new operating system from scratch.

In your environment, the Automated Deployment Services (ADS) feature of Windows Server 2003 and Microsoft Remote Installation Services (RIS) servers are configured to install images on machines. The Pristine Manager tool integrates these capabilities with Tivoli functions. The Pristine Manager tool uses the images and machines defined on your RIS and ADS servers to install the images on the target machines. At the same time, the Pristine Manager tool includes the machines in the Tivoli environment as endpoints: it takes the label that you define and makes it the endpoint label of the new machine. This enables Change Manager and Activity Plan Monitor to work with the machines as if they are Tivoli endpoints.

Figure 6 on page 10 shows the relationship between the server, gateway, endpoint, and pristine machines. In this figure, the following process flow occurs:

1. From the APM/CCM console, define the server and machine databases and create the operating system elements.
2. Create and synchronize the reference model to create the activity plan. The reference model and activity plan are created with information stored on the RDBMS server. The plan that is generated must be submitted from the Activity Plan Monitor. The activity plan contains the pristine activity.
3. The Tivoli server distributes the pristine activity to the RIS/ADS server on the endpoint for each Pristine machine.

4. When a Pristine machine boots, the RIS / ADS server installs the operating system and a Tivoli management agent on that machine.
5. When the operating system and the Tivoli management agent have been installed on the Pristine machine, the Pristine machine logs on to the Tivoli gateway to notify the Tivoli server that the Pristine Manager has completed the configuration of the Pristine machine.

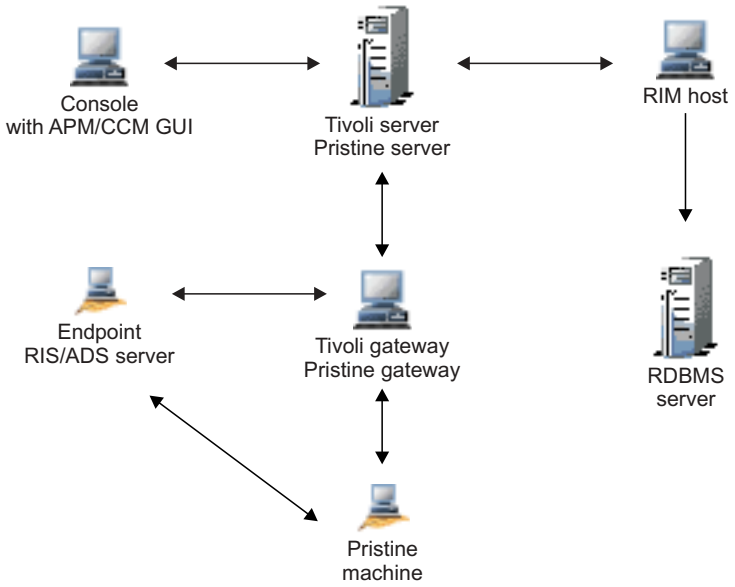


Figure 6. Pristine Manager Components and Their Relationships

Note: There must be one Pristine Server and one Pristine Gateway in each Tivoli management region. The pristine database is shared between all Tivoli management regions that have Pristine Manager installed.

Resources Used for Configuration Management

Understanding the components and services of IBM Tivoli Configuration Manager and their relationships is important to the planning and installation processes. Figure 7 on page 11 combines the resources used for the following operations:

- Inventory scans
- Software distributions
- Resource management
- Web operations

In addition to combining these operations, Figure 7 on page 11 adds the following components:

- Activity Planner used for defining, scheduling, and monitoring activity plans
- Change Manager with Activity Planner used for software distributions and change management
- Patch management. Installing the Tivoli Patch Management component enables this managed node to distribute and manage security patches and software updates in a Tivoli environment. For more information about Patch Management and the IBM Tivoli Configuration Manager Automation Server, refer to the *IBM Tivoli Configuration Manager Patch Management Guide.*

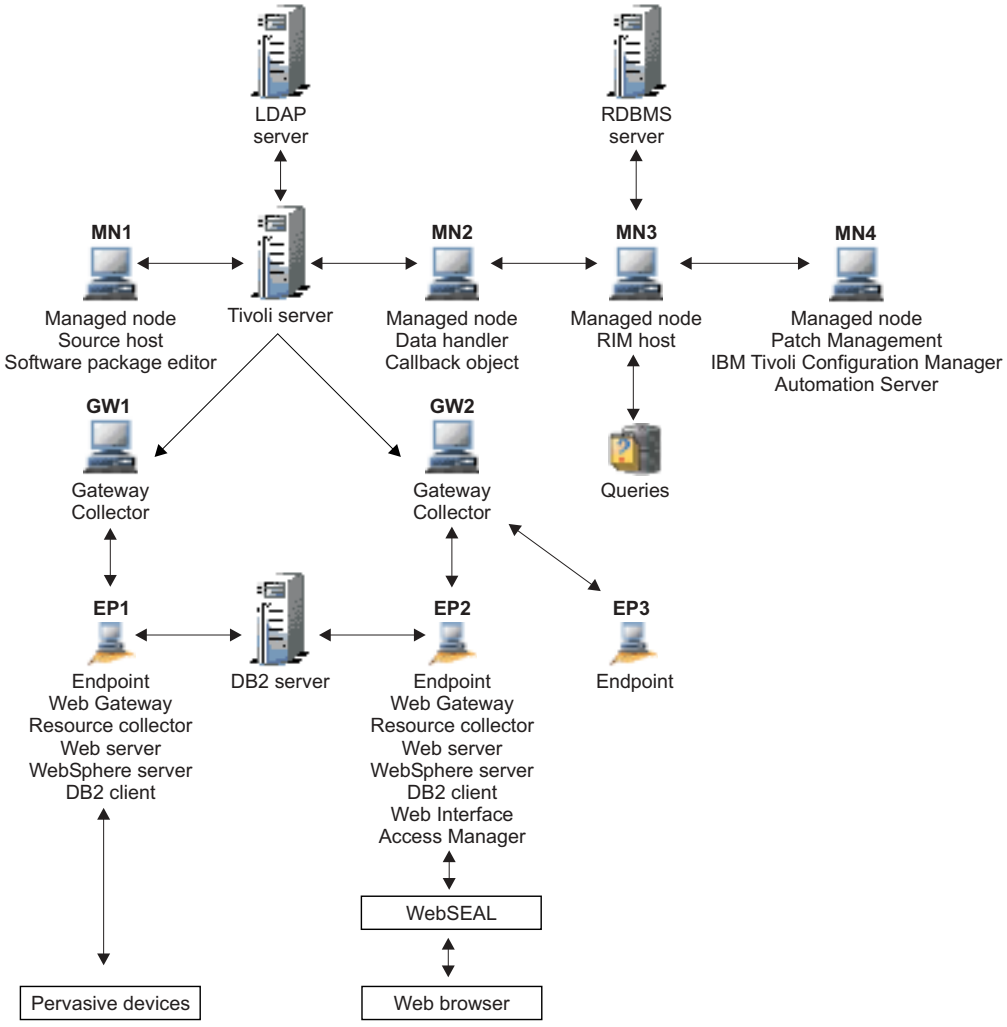


Figure 7. IBM Tivoli Configuration Manager Resources and Their Relationships

To support this example configuration shown in Figure 7, the software listed in Table 1 on page 12 is installed and configured on the listed systems.

Table 1. Resources Used by IBM Tivoli Configuration Manager and Their Required Software by System

Label	Resources	Installed Software	Comments
Tivoli server	Tivoli server	• Tivoli Management Framework • Java 1.4.2 for Tivoli • Java Help 1.0 for Tivoli • Java Client Framework for Tivoli • Distribution Status console • Activity Planner • Change Manager • Enterprise Directory Query Facility • Inventory • Resource Manager • Scalable Collection Service • Software Distribution • Web Interface component • Tivoli Pristine Manager • Tivoli Patch Management • Query Directory for Microsoft Active Directory - Command Line Interface • Tivoli Provisioning Manager for Operating System Deployment integration • CM Extension for Tivoli License Manager	The installation of this software creates the RIM objects on the RIM host (MN3). For this installation to complete successfully, MN3 must exist before installing any software which requires one of these RIM objects.
MN1	Managed node Source host	• Tivoli Management Framework • Java 1.4.2 for Tivoli • Java Help 1.0 for Tivoli • Java Client Framework for Tivoli • Java RDBMS Interface Module • Activity Planner • Change Manager • Software Distribution • Software Package Editor	Installing the Software Distribution component enables this system to be a source host.
MN2	Managed node Data handler Callback object	• Tivoli Management Framework • Inventory • Scalable Collection Service	Installing the Inventory and Scalable Collection Service components enable this managed node to be defined as the inventory data handler and callback object.

Table 1. Resources Used by IBM Tivoli Configuration Manager and Their Required Software by System (continued)

Label	Resources	Installed Software	Comments
MN3	Managed node RIM host	• Tivoli Management Framework • RDBMS client software	This managed node is the RIM host for the following RIM objects needed by IBM Tivoli Configuration Manager: • planner • ccm • invdh_1 • inv_query • trm • mdist2 • pristine • adi_rim
MN4	Managed node	• Tivoli Management Framework • Java 1.4.2 for Tivoli • Java Help 1.0 for Tivoli • Java Client Framework for Tivoli • Java RDBMS Interface Module • Activity Planner • Software Distribution • Patch Management • IBM Tivoli Configuration Manager Automation Server	Installing the Tivoli Automated Patch Management solution component enables this managed node to distribute and manage security patches and software updates in a Tivoli environment. This managed node must have Windows 2003 installed. For more information about IBM Tivoli Configuration Manager Automation Server, refer to the *IBM Tivoli Configuration Manager Patch Management Guide*.
MN5	Managed node	Tivoli Management Framework, Query Directory for Microsoft Active Directory	Microsoft Active Directory Server runs on this managed node
GW1	Managed node Gateway	• Tivoli Management Framework • Inventory Gateway • Resource Manager Gateway • Scalable Collection Service • Software Distribution Gateway	Run the **wcrtgate** command or use the Tivoli desktop to create the gateway.
GW2	Managed node Gateway	• Tivoli Management Framework • Inventory Gateway • Scalable Collection Service • Software Distribution Gateway • CM Endpoint Extension	Run the **wcrtgate** command or use the Tivoli desktop to create the gateway.
EP1	Endpoint	• Tivoli endpoint • DB2 client • IBM HTTP Server • WebSphere Application Server • Web Gateway database • Web Gateway server	The software on this endpoint support resource management of pervasive devices. Support of pervasive devices is handled through an enrollment process.

Table 1. Resources Used by IBM Tivoli Configuration Manager and Their Required Software by System (continued)

Label	Resources	Installed Software	Comments
EP2	Endpoint	• Tivoli endpoint • DB2 client • IBM HTTP Server • WebSphere Application Server • Access Manager • Web Gateway database • Web Gateway server • Web Interface • Web GUI Inventory plug-in • Web GUI Software Distribution plug-in • Policy director client (PDJRTE) **Note:** If you use the security option, Access Manager WebSEAL must be installed on a machine separate to the endpoint.	The software installed on this endpoint supports Web operations from a browser. Before being granted access to the Web objects, a user can be authenticated and authorized through IBM Tivoli Access Manager and WebSEAL. If you use Access Manager, the Policy director client (PDJRTE) is required on all machines where WebSphere Application Server is installed.
EP3	Endpoint	Tivoli endpoint	

Chapter 2. Planning a Configuration Management Environment

The considerations that apply to planning a Tivoli environment, as described in *Tivoli Management Framework Planning for Deployment*, apply to planning a configuration management environment. This chapter provides additional considerations that might require changes to your overall deployment plan. Depending on the contents of your overall deployment plan, different installation and upgrade procedures might be required to create or maintain your Tivoli environment.

Creating a Deployment Plan

Creating a deployment plan is essential to creating and installing a configuration management environment. The basic considerations for creating a deployment plan for a Tivoli environment are provided in *Tivoli Management Framework Planning for Deployment*. This document covers all the planning considerations and provides scenarios for creating a comprehensive deployment plan. At a minimum, you need to gather the following information before installing any software:

- Base hardware and software requirements for Tivoli Management Framework and IBM Tivoli Configuration Manager.

  This information is provided in *Tivoli Management Framework Release Notes* and *IBM Tivoli Configuration Manager Release Notes*.
- Whether the computer systems in your distributed network can support this new software, whether these systems can be upgraded to meet your business needs, or whether new systems need to be obtained.
- Which IBM Tivoli Configuration Manager components to install on which computer systems in your distributed network to support your business needs and whether they have additional third-party software requirements.

  This information is provided in *IBM Tivoli Configuration Manager Release Notes*, *Introducing IBM Tivoli Configuration Manager*, and this document.

For each system where you plan to install components of IBM Tivoli Configuration Manager, you should also provide the following information:

- Host name
- Operating system
- Available memory and available disk space
- Which components of IBM Tivoli Configuration Manager to install

To help you create your deployment plan, you can use the information in "Planning Worksheet" on page 21.

After creating your deployment plan and before starting the installation of IBM Tivoli Configuration Manager or the upgrade of any IBM Tivoli Configuration Manager component, complete the following steps:

1. Read *Tivoli Management Framework Release Notes* and *IBM Tivoli Configuration Manager Release Notes* to ensure that all systems where you plan to install or upgrade components of IBM Tivoli Configuration Manager meet the hardware and software requirements and meet the software prerequisites.

2. If you are upgrading components of IBM Tivoli Configuration Manager, version 4.3.1, or you already installed Tivoli Management Framework, back up the Tivoli object database for all managed nodes, including the Tivoli management region server (Tivoli server) in the Tivoli management region (Tivoli region).

   Having a backup enables you to return the Tivoli object database on the Tivoli server and all managed nodes to a preinstallation state if non-recoverable problems are encountered during an installation or upgrade. For additional information on backing up a Tivoli environment, see *Tivoli Management Framework Maintenance and Troubleshooting Guide*.

Choosing Where to Install Components

Before installing the components of IBM Tivoli Configuration Manager, you need to decide where to install the different components and services of IBM Tivoli Configuration Manager. You must install these components on the Tivoli server before you can install them on a managed node or before you can install the associated gateway component on a gateway. The following sections provide guidelines for determining where you need to install these components and services.

Choosing Where to Install the Activity Planner Component

Always install the Activity Planner component on the Tivoli management region server. The Activity Planner component relies on a Relational Database Management System (RDBMS) Interface Module (RIM) object and on configured table space in the `planner` repository. Install this component only on managed nodes where you plan to create activity plans, run Activity Planner commands, or run the Activity Planner administrative interface.

Choosing Where to Install the Change Manager Component

Always install the Change Manager component on the Tivoli management region server. The Change Manager component relies on a RIM object and relies on configured table space in the `ccm` repository. Install this component only on managed nodes where you plan to run the Change Manager administrative interface or run Change Manager commands.

Choosing Where to Install the Enterprise Directory Query Facility Component

Always install the Enterprise Directory Query Facility component on the Tivoli management region server. The Enterprise Directory Query Facility component relies on a preconfigured Lightweight Directory Access Protocol (LDAP) directory server. This component is used with the Change Manager component and enables a Change Manager administrator to use information stored in one or more directory servers.

Choosing Where to Install the Inventory Components

On managed nodes, you can install the Scalable Collection Service component, the Inventory component, and the Inventory Gateway component. The Inventory component relies on a RIM object and relies on configured table space in the inventory repository. You must install the Scalable Collection Service component everywhere that you want to install inventory. Use the following guidelines for creating your deployment plan:

- Install the Inventory component on a managed node in the following situations:
  - An administrator uses the managed node to create or distribute inventory profiles.
  - An administrator uses the managed node to run inventory commands.
  - The managed node hosts the inventory callback object.
  - The managed node hosts the inventory data handler.
- Install the Inventory Gateway component on any gateway that communicates with endpoints that will be scanned.

Choosing Where to Install the Patch Management Component

Install the Patch Management component as follows:

- On the Tivoli management region server
- On the managed node where IBM Tivoli Configuration Manager Automation Server is installed

Choosing Where to Install the Pristine Manager Components

This component relies on a RIM object and also on configured table space in the `pristine` repository. Install the Pristine Manager and the Pristine Manager Gateway components as follows:

- The server component on the Tivoli management region server
- The gateway component on the gateways where the RIS/ADS endpoint is attached, and also on the gateways with the pristine machine attached.

Choosing Where to Install the Resource Manager Components

On the Tivoli management region server install the Resource Manager component. On managed nodes, install the Resource Manager Gateway component. Install the Resource Manager Gateway component on any gateway that communicates with endpoints where the Web Gateway component is installed. This component relies on a RIM object and relies on configured table space in the trm repository. The Resource Manager component is also used to manage the users defined in an LDAP server.

Choosing Where to Install the Software Distribution Components

Install the Software Distribution component on the Tivoli management region server.

On managed nodes, you can install both the Software Distribution and the Software Distribution Gateway components. However, use the following guidelines for creating your deployment plan:

- Install the Software Distribution component on a managed node in the following situations:
  - An administrator uses the managed node to run software distribution commands.
  - The managed node is used as a source host. To operate as a source host, the managed node must fulfill the following requirements:
    - It must either be a gateway or configured as a standalone repeater.

      Tivoli Management Framework provides the mechanisms for creating and configuring gateways and repeaters. For details, refer to *Tivoli Management Framework Planning for Deployment* and *Tivoli Enterprise Installation Guide*.

- It has sufficient disk space to store the software package blocks and file references in the software packages to be distributed.

- Install the Software Distribution Gateway component on any gateway that communicates with endpoints that receive a software distribution.

Choosing Where to Install the Software Package Editor Component

Installs the files that enable the Tivoli desktop to launch the Software Package Editor. This component requires the Software Distribution server, and enables you to create, test, and use software packages.

Choosing Where to Install the Web Infrastructure Component

Install the Web Infrastructure component on the Tivoli management region server. This component is used with the Web Interface and Web Gateway components that are installed on endpoints.

Note: The Web Interface and Web Gateway components are not released with IBM Tivoli Configuration Manager, version 4.3.1, Fix Pack 4 or later. This installation provides the components at Fix Pack 4 level, regardless of which fix pack media you installed from. After completing the installation, update the components to the latest fix pack level by running the provided patch installer program (\spb_installer folder) for the latest fix pack. The descriptor xml for this update is located in the \package folder.

If you plan to use IBM Tivoli Configuration Manager, version 4.3.1 in association with these components, you have the following options:

- Maintain a Tivoli region, version 4.2.3, dedicated to the Web Interface and Web Gateway components.
- Migrate a working environment, version 4.2.3 where the Web Interface and Web Gateway components are installed, to version 4.3.1.
- Perform a fresh installation of IBM Tivoli Configuration Manager, version 4.3.1 and install the Web Interface and Web Gateway components from the installation images provided with IBM Tivoli Configuration Manager, version 4.2.3, Fix Pack 4 or later. For more information about the installation procedure, refer to *IBM Tivoli Configuration Manager: Planning and Installation Guide* version 4.2.3 (revised December 22, 2006).

Choosing Where to Install the Query Directory for Microsoft Active Directory Component

Install this component on the Microsoft Windows managed node where Microsoft Active Directory Server is running.

Choosing Where to Install the Query Directory for Microsoft Active Directory - Command Line Component

This component relies on a RIM object and also on configured tablespace in the ad_db repository. Install this component on managed nodes (not on the one running Microsoft Active Directory Server) where you plan to run Active Directory query commands.

Choosing Where to Install the Tivoli Provisioning Manager for Operating System Deployment integration Component

Install this component on managed nodes where Activity Planner is installed.

Choosing Where to Install the CM Extension for Tivoli License Manager Component

Install this component on the Tivoli management region server, after having installed the Inventory and Software Distribution components.

Choosing Where to Install the CM Endpoint Extension Component

Install this component on gateways where the Inventory Gateway component is installed, if you plan to use the License Management extension.

Using Configuration Management in Connected Tivoli Regions

This section discusses the requirements for running inventory scans, distributing software, and managing devices and users in connected Tivoli regions. If you plan to use IBM Tivoli Configuration Manager among Tivoli regions, the following conditions must be met:

- You can install the IBM Tivoli Configuration Manager components on the Hub region, or on the Hub and Spoke regions. Installing components on Spoke regions reduces the workload on the Hub region. For more information on Hub and Spoke regions, refer to *Tivoli Management Framework Planning for Deployment Guide*.

  Note: If you install Activity Planner on more than one region, you need to create a separate Activity Planner database for each installation. These databases cannot communicate with each other and cannot share information on activity plans.

  To workaround this problem, you should write a script to extract data from each Activity Planner database and collect it at a central location, typically, the Hub region.

Running Inventory Scans in Connected Tivoli Regions

Scalable Collection Service (SCS) uses the MDist 2 repeater hierarchy to obtain entry point information. Consider the scenario shown in Figure 8 on page 20. You might have two Tivoli regions connected by a wide area network (WAN): Region A and Region B. Region A contains the inventory data handler. A profile is distributed from Region A to endpoints in Region B. The gateway for the endpoints in Region B collects scan results from these endpoints. Next, the WAN entry point collector node in Region A collects the scan results from the gateway in Region B and sends the data to the inventory data handler.

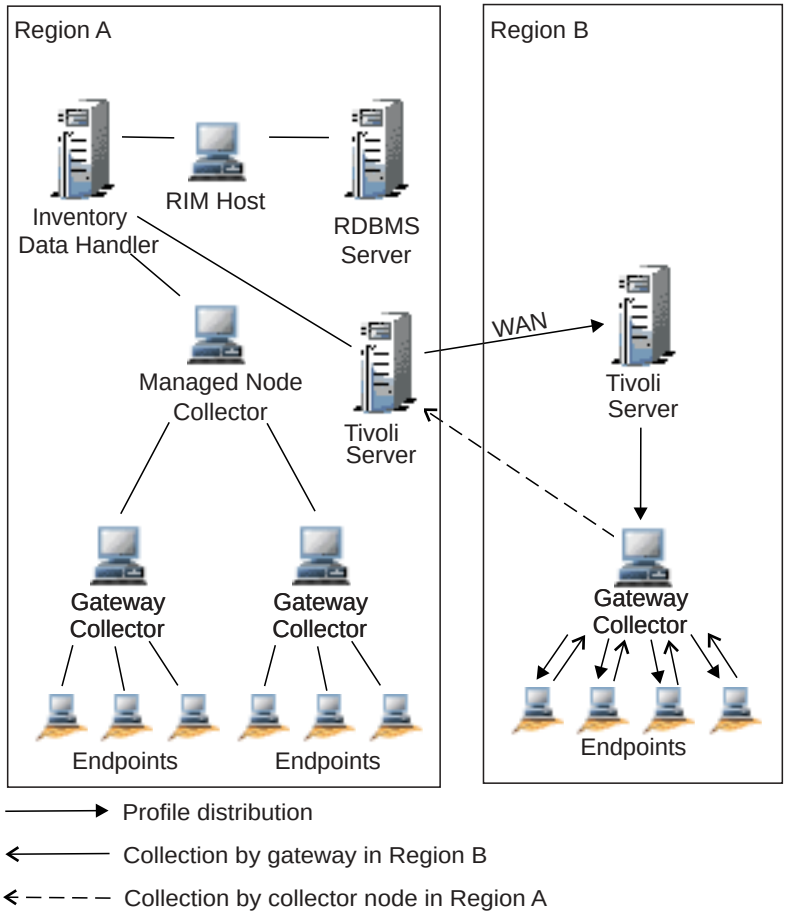


Figure 8. Using Inventory Across Tivoli Region Boundaries

For information about connecting Tivoli regions and exchanging and updating resources, see *Tivoli Management Framework Planning for Deployment*.

Distributing Software in Connected Tivoli Regions

Software Distribution uses the MDist2 repeater hierarchy. Ensure that the repeaters and switches in this hierarchy are correctly tuned to handle the software distributions.

Although you might have the Software Distribution Gateway component installed in each Tivoli region, you must also install the Software Distribution component on the Tivoli server in each region. When the targets of a software distribution are not in the local region, the gateway in the remote region does not know how to manage the dependencies for the targets. Because software dependencies are not Tivoli managed resources, they cannot be exchanged between connected Tivoli regions.

For information about connecting Tivoli regions and about exchanging and updating resources, see *Tivoli Management Framework Planning for Deployment*.

Managing Devices and Users in Connected Tivoli Regions

Resource management of devices, and users who are defined in the LDAP server, can be used in connected Tivoli regions. In this configuration, you install Resource

Manager in each Tivoli region, and share one database. With this approach, an administrator in the local Tivoli region can perform the following operations:

- Discover device resources managed by remote endpoints and resource groups
- Create device resources managed by remote endpoints and resource groups
- Modify device resources managed by remote endpoints and resource groups
- Delete device resources managed by remote endpoints and resource groups

Planning Worksheet

Complete the following worksheet to help guide you through the planning process. Completing this worksheet will help you during the installation of IBM Tivoli Configuration Manager.

1. Do you have a previous installation of IBM Tivoli Configuration Manager? A previous installation would be Tivoli Management Framework, Tivoli Inventory, or Tivoli Software Distribution.

   __ Yes

   __ No

   If Yes, you need to upgrade your Tivoli environment. You have several options when performing the upgrade. For more information, see "Server Upgrade" on page 104.

   If No, you need to install the Tivoli server to create your Tivoli environment. Use the "Which Server Installation?" on page 76.

2. Which RDBMS software are you using?

   __ DB2, the only supported RDBMS for the Web Gateway component

   __ Informix

   __ Microsoft SQL Server

   __ Oracle

   __ Sybase

   Which version?

   See Chapter 4, "Working With Repositories and Queries," on page 51 for more information on RDBMS. Also refer to *Tivoli Management Framework Release Notes* for a list of supported RDBMS versions to ensure that your RDBMS software is at a supported level.

3. Which operating system are you running?

   __ UNIX

   __ Windows

   __ Linux

   Which version?

   Does it have enough memory?

   __ Yes

   __ No

   Does it have enough available disk space?

   __ Yes

   __ No

   See *Tivoli Management Framework Release Notes* and *IBM Tivoli Configuration Manager Release Notes* for a list of supported versions, hardware, and software requirements to ensure that your operating system meets these system requirements. You might need to purchase new hardware.

4. Which primary configuration management features do you plan to use for a fresh installation?

   __ Inventory scans of machines

   __ Software distributions to machines

   __ Create, schedule, and run activity plans

   __ Manage configurations using reference models

   If you selected any of the previous configuration management features, use the "Which Server Installation?" on page 76 depending on whether you have an existing Tivoli environment.

   __ Inventory scan of devices

   __ Software distribution to devices

   __ Access Web objects

   If you selected any of the previous features, use the Chapter 6, "Desktop Installation," on page 115.

5. Do you need this software to operate in languages other than English?

   __ Yes

   __ No

   If Yes, which languages?

   __ Chinese, Simplified

   __ Chinese, Traditional

   __ French

   __ German

   __ Italian

   __ Japanese

   __ Korean

   __ Portuguese, Brazilian

   __ Spanish

   Depending on the IBM Tivoli Configuration Manager component or service and the installation mechanisms, you might need to install one or more language packages.

   Note: Language packages are currently at version 4.2.3, Fix Pack 4 level. When installing them, consider the following limitations:

   - Splash screens are in English.
   - Product messages created after Version 4.2.3 Fix Pack 4 are not translated.

Chapter 3. Component Installation Prerequisites

This chapter provides the following information:

- Authorization roles required to install IBM Tivoli Configuration Manager
- Installation sequence when installing the components of IBM Tivoli Configuration Manager when using installation mechanisms other than the ones provided by IBM Tivoli Configuration Manager
- The components of IBM Tivoli Configuration Manager and their available installation image formats
- Installation options, prerequisites, and other installation concerns for each component of IBM Tivoli Configuration Manager

Authorization Roles

Table 2 provides the context and authorization roles required to install any product.

Table 2. Required Authorization Roles for Installing Tivoli Enterprise Products

Activity	Required Role
Install the installation images directly from the CD images, using the InstallShield wizard	Either: • **root** access (on UNIX) • A member of the Administrators group (on Windows)
Install from the Tivoli desktop or command line	**install_product** or **super** Tivoli Framework roles in a Tivoli region
Install using Tivoli Software Installation Service	**user** plus one of the following Tivoli administrator roles in a Tivoli region: **super**, **senior**, or **install_product**

IBM Tivoli Configuration Manager packaging

The following is a list of the CDs that are supplied with the product:

IBM Tivoli Configuration Manager Server, version 4.3.1
This contains the installation image for a fresh installation of IBM Tivoli Configuration Manager on a server or managed node.

IBM Tivoli Configuration Manager Desktop, version 4.3.1
This contains the installation image and the InstallShield wizard for a fresh installation or an upgrade of IBM Tivoli Configuration Manager on any workstation that is not a managed node or a Tivoli server.

IBM Tivoli Configuration Manager Installation, version 4.3.1
This contains the InstallShield wizard for the IBM Tivoli Configuration Manager server installation scenarios.

IBM Tivoli Configuration Manager Documentation (English Only), version 4.3.1
This contains the complete IBM Tivoli Configuration Manager documentation in English.

IBM Tivoli Configuration Manager National Language Support, version 4.3.1
This contains the installation image for national language support.

Note: Language packages are currently at version 4.2.3, Fix Pack 4 level. When installing them, consider the following limitations:

- Splash screens are in English.
- Product messages created after version 4.2.3 Fix Pack 4 are not translated.

IBM Tivoli Configuration Manager Upgrade, version 4.2.2 to 4.3.1
This contains the installation image for upgrading from version 4.2.2 to version 4.3.1.

IBM Tivoli Configuration Manager Upgrade, version 4.2.3 to 4.3.1
This contains the installation image for upgrading from version 4.2.3 to version 4.3.1.

Prerequisite software

This section lists prerequisite software which might be required, depending on the component options chosen when installing. See "Installation Options" on page 33.

- Tivoli Management Framework, version 4.3.1.
- A Tivoli endpoint at the Tivoli Management Framework, version 4.3.1.
- IBM WebSphere Application Server
- IBM WebSphere Everyplace Connection Manager (WECM)

Note: To perform device provisioning and notification actions with Nokia devices you must have a working IBM WebSphere Everyplace Connection Manager (WECM) environment.

- Web Gateway database and Web Gateway server
- IBM Tivoli Access Manager
- IBM Tivoli Access Manager WebSEAL
- Java 1.4.2 for Tivoli
- mRouter

Note: For the latest information about released versions of a product, refer to the *Release Notes*.

Using RIM and the RDBMS

Several IBM Tivoli Configuration Manager components store information in a Relational Database Management System (RDBMS). During the installation of IBM Tivoli Configuration Manager, several databases, known as *repositories*, are created in the RDBMS by running SQL admin scripts:

- The `ccm` repository, which is used by the Change Manager component.
- The `inv_db` repository, which is used by the Inventory, Resource Manager, and Software Distribution components. If the Resource Manager component is installed before Inventory component, the `trm` repository is created for use by the Resource Manager component.
- The `mdist2` repository, which is used by the Distribution Status console component. The `mdist2` repository is created during the installation of Tivoli Management Framework. For information about this repository, see *Tivoli Enterprise Installation Guide*.

- The `planner` repository, which is used by the Activity Planner component.
- The `pristine` repository, which is used by the Pristine Manager component.
- The `ad_db` repository, which is used by the Query Directory for Microsoft Active Directory component.

The values used in the SQL admin scripts are default values. The values can be changed by editing the SQL admin script files.

These repositories can be created in a single database (the suggested name is the cm_db database).

Inventory does not create indexes for tables in the configuration repository. You can create indexes to optimize the mining of historical data from the configuration repository. Consult a database administrator for more information.

Inventory can be configured to use multiple database connections to write data to the configuration repository in parallel. To avoid locking problems, set the locking for your RDBMS to the smallest granularity possible. Inventory uses the current locking settings of your RDBMS, except for Informix RDBMSs. For Informix RDBMSs, Inventory use row-level locking, which is set in the `inv_infx_schema.sql` and `h_inv_infx_schema.sql` scripts. For information about changing locking settings, see your RDBMS documentation.

The connection and communication between IBM Tivoli Configuration Manager and table spaces in the repositories use RDBMS Interface Module (RIM) objects. By default, all the RIM objects are created on the same managed node (the Tivoli server).

For additional information about using RIM objects, see *Tivoli Enterprise Installation Guide* and *Tivoli Management Framework Release Notes*.

Selecting RIM Hosts

A *RIM host* is a managed node where the RIM object is created. RIM objects are created during installation. When deciding which managed nodes are to be RIM hosts, consider the following requirements:

- The managed node must be local to the Tivoli region.
- The managed node must be preconfigured with the RDBMS client or server software.

  Note: Do not install the RDBMS server software on the RIM host unless this machine is designated solely for RDBMS usage and no other Tivoli operations. When you add the number of transactions performed on the RDBMS server to those performed on the RIM host, the number of overall transactions might impact the optimal performance of your Tivoli environment by exceeding network throughput.

Although RIM objects are created during installation, you can create additional RIM objects using the **wcrtrim** command or move a RIM object from one managed node to another using the **wmvrim** command. For information on these and other RIM commands, see *Tivoli Management Framework Reference Manual*. For information about using RIM objects with the Inventory component, see *IBM Tivoli Configuration Manager User's Guide for Inventory*.

Selecting the RDBMS Server

The RDBMS server contains the repositories that are used to store and retrieve configuration management data. When deciding on which machine to install the RDBMS server, consider the following requirements:

- There must be a connection between the RIM host (with the RDBMS client) and the RDBMS server.
- The RDBMS server does not need to be on a machine managed by Tivoli Management Framework.
- The RDBMS server must be in the same network as the Tivoli region.
- There must be enough disk space in the RDBMS to handle the amount of data stored in the repositories.
- Multiple Tivoli regions can use a single RDBMS server.

Configuring RIM Objects

During installation, you are asked to provide RIM configuration options. This information is used to create the RIM object and register it in the Tivoli object database. Therefore, you must install and configure the RDBMS before installing IBM Tivoli Configuration Manager. For information on the RDBMS, see Chapter 4, "Working With Repositories and Queries," on page 51. For general details, see the RIM object information in *Tivoli Enterprise Installation Guide* and *Tivoli Management Framework Release Notes*. For information about using RIM objects with the Inventory component, see *IBM Tivoli Configuration Manager User's Guide for Inventory*.

When using a single RDBMS for multiple Tivoli regions, you need to ensure that the settings for each of the RIM objects that are local to each Tivoli region are the same. The only exception is the name of the RIM host. If the settings are not the same, use the **wgetrim**, **wsetrim**, and **wsetrimpw** commands to synchronize all required RIM objects. For information on these commands, see *Tivoli Management Framework Reference Manual*.

RIM Objects Used for Configuration Manager

IBM Tivoli Configuration Manager uses the default RIM objects and passwords shown in Table 3. The table also lists the component name for each RIM object.

Table 3. RIM Objects and Passwords for IBM Tivoli Configuration Manager Components

Component	RIM object	Default user name	Default password	Comments
Activity Planner	planner	planner	planner	This RIM object uses the planner database as the default.
Change Manager	ccm	tivoli	tivoli	This RIM object uses the ccm database as the default.
Distribution Status	mdist2	mdstatus	mdstatus	This RIM object uses the mdist2 database as the default.

Table 3. RIM Objects and Passwords for IBM Tivoli Configuration Manager Components (continued)

Component	RIM object	Default user name	Default password	Comments
Inventory	invdh_1	invtiv	tivoli	Used by the inventory data handler to write scan data to the RDBMS. This RIM object uses the inv_db database as the default.
	inv_query	invtiv	tivoli	Used to perform queries against the RDBMS. The **winvfilter**, **winvpackage**, **winvrmnode**, **winvsig**, and **winvupdatesid** commands and the Inventory administrative interface use this RIM object. This RIM object uses the inv_db database as the default.
Pristine Manager	pristine	pristine	pristine	This RIM object uses the pristine database as the default.
Resource Manager	trm	tivoli	tivoli	If inv_query is defined, the Resource Manager component uses the inv_query RIM object. Otherwise, the trm RIM object is created.
Query Directory for Microsoft Active Directory	adi_rim	ad_user	tivoli	This RIM object uses the ad_db database as the default.

For additional information about these RIM objects and their associated repositories, see Chapter 4, “Working With Repositories and Queries,” on page 51.

Synchronizing RIM Objects With RDBMS Databases

The password and user for each RIM object must be the same as the password and user of the RDBMS database that it accesses. In other words, the RIM password and the RDBMS database password need to be the same, and the user name for the RIM object and the user name for the RDBMS must also match. Therefore, you must change the password and user of each RIM object to match that of its repository.

When you change the RDBMS database password or user, you must also change the password for the RIM object.

To change the password for a RIM object, use the **wsetrimpw** command. To change the user for a RIM object, use the **wsetrim** command. For information about these commands, see *Tivoli Management Framework Reference Manual*.

Components of IBM Tivoli Configuration Manager

The components of IBM Tivoli Configuration Manager can be installed through multiple mechanisms using different image formats. The primary image formats are index files (`.IND` files) and software package blocks (SPBs).

Components Installed From Index Files

Table 4 describes the components used for installing IBM Tivoli Configuration Manager, that are shipped on the IBM Tivoli Configuration Manager Server, version 4.3.1.

Table 4. Index Files and Tags Used to Install and Uninstall Components of IBM Tivoli Configuration Manager

.IND file	Component name	Tag
APM	Activity Planner, version 4.3.1	apm
CCM	Change Manager, version 4.3.1	ccm
QUERYDIR	Enterprise Directory Query Facility, version 4.3.1	directory_query
INV_FRES	Inventory, version 4.3.1	InventoryServer
GW_FRESH	Inventory Gateway, version 4.3.1	InventoryGateway
PATCHMGT	Patch Manager, version 4.3.1	patch_mgmt
PRI	Pristine Manager, version 4.3.1	PM
PRIGW	Pristine Manager Gateway, version 4.3.1	PMGW
TRM	Resource Manager, version 4.3.1	TMF_TRM
TRMGW	Resource Manager Gateway, version 4.3.1	TMF_TRM_GW
MCOLLECT	Scalable Collection Service, version 4.3.1	TMF_DDC_4.3.1
SWDIS	Software Distribution, version 4.3.1	swdis
SWDISGW	Software Distribution Gateway, version 4.3.1	swdisgw
SWDISJPS	Software Package Editor, version 4.3.1	swdisjps
WEBUI	Web Interface, version 4.3.1	webui
ADIENG	Query Directory for Microsoft Active Directory, version 4.3.1	ADIEng
ADICLI	Query Directory for Microsoft Active Directory Command Line, version 4.3.1	ADICli
TPOSD	Tivoli Provisioning Manager for Operating System Deployment integration, version 4.3.1	TPMforOSDeployment
TLMEXT	CM Extension for Tivoli License Manager, version 4.3.1	tlm_ext
CMEXT	CM Endpoint Extension, version 4.3.1	cm_ext

Table 4 contains the following information:

.IND file
The name of the index file that you use to install the component from the command line.

Component name
The name of the component that is displayed when you install the product using the Tivoli desktop or Tivoli Software Installation Service.

Tag The registered product tag that you use to uninstall the component with the **wuninst** command as documented in "Uninstalling Components Using the wuninst Command" on page 145.

IBM Tivoli Configuration Manager can be upgraded from Version 4.2.2 or Version 4.2.3 to version 4.3.1. Table 5 describes the components used for upgrading IBM Tivoli Configuration Manager from Version 4.2.2 to version 4.3.1. The components are on the IBM Tivoli Configuration Manager Upgrade, version 4.2.2 to Version 4.3.1.

Table 5. Index Files and Tags Used to Upgrade and Uninstall Components of IBM Tivoli Configuration Manager From Version 4.2.2 to Version 4.3.1

.IND file	Component name	Tag
APMU422	Activity Planner Server Upgrade, version 4.2.2 to version 4.3.1	apm_4.3.1
CCMU422	Change Manager Server Upgrade, version 4.2.2 to version 4.3.1	ccm_4.3.1
431_422I	Inventory Upgrade, version 4.2.2 to version 4.3.1	InventoryServer_4.3.1
431_422G	Inventory Gateway Upgrade, version 4.2.2 to version 4.3.1	InventoryGateway_4.3.1
SWDIS422	Software Distribution Server Upgrade, version 4.2.2 to version 4.3.1	swdis_4.3.1
SWDGW422	Software Distribution Gateway Upgrade, version 4.2.2 to version 4.3.1	swdisgw_4.3.1
SWDJP422	Software Distribution Software Package Editor Upgrade, version 4.2.2 to version 4.3.1	swdisjps_4.3.1
TRMU422	Resource Manager Upgrade, version 4.2.2 to version 4.3.1	TMF_TRM_4.3.1
TRMGW422	Resource Manager Gateway Upgrade, version 4.2.1 to version 4.3.1	TMF_TRM_GW_4.3.1
QRYDR422	Directory Query Upgrade, version 4.2.2 to version 4.3.1	directory_query_4.3.1
PRIU422	Pristine Manager Upgrade, version 4.2.2 to version 4.3.1	PM_4.3.1
PRIGW422	Pristine Manager Gateway Upgrade, version 4.2.2 to version 4.3.1	PMGW_4.3.1
WEBUI422	Web Interface Upgrade, version 4.2.2 to version 4.3.1	webui_4.3.1

Note: The index file for the Scalable Collection Service component does not appear in the table because it cannot be upgraded but must be fresh-installed.

Table 6 on page 30 describes the components used for upgrading IBM Tivoli Configuration Manager from Version 4.2.3 to version 4.3.1. The components are on the IBM Tivoli Configuration Manager Upgrade, version 4.2.3 to version 4.3.1

Table 6. Index Files and Tags Used to Upgrade and Uninstall Components of IBM Tivoli Configuration Manager From Version 4.2.3 to version 4.3.1

.IND file	Component name	Tag
APMU	Activity Planner Upgrade, version 4.2.3 to version 4.3.1	apm_4.3.1
CCMU	Change Manager Upgrade, version 4.2.3 to version 4.3.1	ccm_4.3.1
431_423I	Inventory Upgrade, version 4.2.3 to version 4.3.1	InventoryServer_4.3.1
431_423G	Inventory Gateway Upgrade, version 4.2.3 to version 4.3.1	InventoryGateway_4.3.1
QRYDIRU	Directory Query Upgrade, version 4.2.3 to version 4.3.1	directory_query_4.3.1
WEBUIU	Web Interface Upgrade, version 4.2.3 to version 4.3.1	webui_4.3.1
TRMU	Resource Manager Upgrade, version 4.2.3 to version 4.3.1	TMF_TRM_4.3.1
TRMGWU	Resource Manager Gateway Upgrade, version 4.2.3 to version 4.3.1	TMF_TRM_GW_4.3.1
SWDISU	Software Distribution Upgrade, version 4.2.3 to version 4.3.1	swdis_4.3.1
SWDGWU	Software Distribution Gateway Upgrade, version 4.2.3 version 4.3.1	swdisgw_4.3.1
SWDJPSU	Software Distribution Software Package Editor Upgrade, Version 4.2.3 to version 4.3.1	swdisjps_4.3.1
PRIGWU	Pristine Manager, Upgrade, version 4.2.3 to version 4.3.1	PM_4.3.1
PMGWU	Pristine Manager Gateway Upgrade, version 4.2.3 to version 4.3.1	PMGW_4.3.1
ADIENGU	Query Directory for Microsoft Active Directory, version 4.2.3 to version 4.3.1	ADIEng_4.3.1
ADICLIU	Query Directory for Microsoft Active Directory Command Line, version 4.2.3 to version 4.3.1	ADICli_4.3.1
TPOSDU	Tivoli Provisioning Manager for Operating System Deployment integration, Version 4.2.3 to version 4.3.1	TPMforOSDeployment_4.3.1
TLMEXTU	CM Extension for Tivoli License Manager, version 4.2.3 to version 4.3.1	tlm_ext_4.3.1
CMEXTU	CM Endpoint Extension, version 4.2.3 to version 4.3.1	cm_ext_4.3.1

Note: The index file for the Scalable Collection Service component does not appear in the table because it cannot be upgraded but must be fresh-installed.

Table 5 on page 29 and Table 6 contains the following information:

.IND file
The name of the index file that you use to upgrade the component from the command line.

Component name
The name of the component that is displayed when you upgrade the product using the Tivoli desktop or Tivoli Software Installation Service.

Tag The registered product tag that you use to uninstall the component with the **wuninst** command as documented in "Uninstalling Components Using the wuninst Command" on page 145.

For information about reading and modifying index files, see *Tivoli Enterprise Installation Guide.*

Components Installed From Software Package Blocks

Several IBM Tivoli Configuration Manager components can be installed using software package blocks (SPBs). These components are in the /SPB subdirectory on the IBM Tivoli Configuration Manager Desktop CD:

- Java components
- Software Package Editor
- IBM Tivoli Configuration Manager administrative interfaces

These SPBs can be installed on endpoints in one of the following ways:

- Using one of the provided installation programs
- Distributing the SPB to the endpoint

Software Packages for the Java Components

Table 7 lists the SPBs used to install the Java components that are used by the IBM Tivoli Configuration Manager components and services. These SPBs are located in the /SPB subdirectory on the IBM Tivoli Configuration Manager Desktop, version 4.3.1.

Table 7. Software Packages for Installing the Java Components

.SPB file	Description
Tivoli_JCF	The software package for Java Client Framework, version 4.3.1.
Tivoli_JHelp	The software package for JavaHelp, version 4.3.1.
Tivoli_JRE_AIX	The software package for the Java Runtime Environment for AIX operating systems
Tivoli_JRE_HP	The software package for the Java Runtime Environment for HP-UX operating environments
Tivoli_JRE_LINUX_S390	The software package for the Java Runtime Environment for Linux on zSeries
Tivoli_JRE_LINUX_IX86	The software package for the Java Runtime Environment for Linux on x86
Tivoli_JRE_NT	The software package for the Java Runtime Environment for Microsoft Windows
Tivoli_JRE_SOLARIS	The software package for the Java Runtime Environment for Sun Solaris Operating Environment on Sun SPARC
Tivoli_JRIM	The software package for the Java RDBMS Interface Module (Java RIM) object, version 4.3.1.
Tivoli_JRE_LINUX_PPC.spb	The software package for the Java Runtime Environment for Linux on i-Series/p-Series

Table 7. Software Packages for Installing the Java Components (continued)

.SPB file	Description
Tivoli_JRE_SOLARIS_IX86.spb	The software package for the Java Runtime Environment for Solaris on x86

Software Packages for the Software Package Editor Component

Table 8 lists the software package blocks used to install the Software Package Editor component. These SPBs are located in the /SPB subdirectory on the IBM Tivoli Configuration Manager Desktop, version 4.3.1.

Table 8. Software Packages for Installing the Software Package Editor Component

.SPB file	Description
Tivoli_SWDEP_400PS	The software package for the i5/OS preparation site. There is no prerequisite for this package.
Tivoli_SWDEP_AIX	The software package for AIX operating systems. The prerequisite for this package is Tivoli_JRE_AIX.
Tivoli_SWDEP_HP	The software package for HP-UX operating environments. The prerequisite for this package is Tivoli_JRE_HP.
Tivoli_SWDEP_LINUX_IX86	The Linux for Intel software package. The prerequisite for this package is Tivoli_JRE_LINUX_IX86.
Tivoli_SWDEP_LINUX_S390	The Linux for zSeries software package. There is no prerequisite for this package.
Tivoli_SWDEP_LINUX_PPC	The software package for Linux on iSeries/pSeries. There is no prerequisite for this package.
Tivoli_SWDEP_L10N	The language support packages for Software Package Editor. Install after installing Software Package Editor.
Tivoli_SWDEP_NT	The software package for Windows. The prerequisite for this package is Tivoli_JRE_NT.
Tivoli_SWDEP_NTAS400	The software package used on a Windows operating system for creating i5/OS software packages. The prerequisite for this package is Tivoli_JRE_NT. **Note:** The Windows operating system that receives the distribution must have a TCP/IP connection to the i5/OS preparation site where the SWDEP_400PS.spb is installed
Tivoli_SWDEP_SOLARIS	The software package for Solaris operating system on SPARC. The prerequisite for this package is Tivoli_JRE_SOLARIS.
Tivoli_SWDEP_SOLARIS_IX86	The Solaris for Intel software package. The prerequisite for this package is Tivoli_JRE_SOLARIS_IX86.

Software Packages for the IBM Tivoli Configuration Manager Administrative Interfaces

Table 9 on page 33 lists the software package blocks used to install the IBM Tivoli Configuration Manager administrative interfaces. These SPBs are located in the /SPB subdirectory on the IBM Tivoli Configuration Manager Desktop, version 4.3.1.

Table 9. Software Packages for Installing the Administrative Interfaces

.SPB file	Description
Tivoli_APM_GUI	The software package for the Activity Planner administrative interface. The prerequisites for this package are Tivoli_JCF Version 4.3.1, Tivoli_JRIM Version 4.3.1, and Tivoli_JRE_NT.
Tivoli_APM_GUI_L10N	The language support packages for the Activity Planner administrative interface. The prerequisite for this package is Tivoli_APM_GUI.
Tivoli_CCM_GUI	The software package for the Change Manager administrative interface. The prerequisites for this package are Tivoli_JCF Version 4.3.1, Tivoli_JRIM Version 4.3.1, Tivoli_JRE_NT, and Tivoli_APM_GUI.
Tivoli_CCM_GUI_L10N	The language support packages for the Change Manager administrative interface. The prerequisite for this package is Tivoli_CCM_GUI.
Tivoli_INV_GUI	The software package for the Inventory administrative interface. The prerequisites for this package are Tivoli_JCF Version 4.3.1, Tivoli_JRIM Version 4.3.1, and Tivoli_JRE_NT.
Tivoli_INV_GUI_L10N	The language support packages for the Inventory administrative interface. The prerequisite for this package is Tivoli_INV_GUI.
Tivoli_MD2GUI	The software package for the Distribution Status console, version 4.3.1. The prerequisites for this package are Tivoli_JCF Version 4.3.1, Tivoli_JRIM Version 4.3.1, and Tivoli_JRE_NT.
Tivoli_MD2GUI_L10N	The language support packages for the Distribution Status console, version 4.3.1. The prerequisite for this package is Tivoli_MD2GUI.

Installation Options

This section contains the installation options for installing the components of IBM Tivoli Configuration Manager, as follows:

Activity Planner

The Activity Planner component depends on the previous installation of the following software:

- Tivoli Management Framework, version 4.3.1
- Java Client Framework for Tivoli, version 4.3.1
- Java 1.4.2 for Tivoli
- Java RDBMS Interface Module, version 4.3.1

When you install Activity Planner on the Tivoli server, the Activity Planner server code, commands, and administrative interface are installed. When you install Activity Planner on any other managed node, the Activity Planner commands and administrative interface are installed.

Table 10 provides the installation options that you can specify when you install the Activity Planner component.

Table 10. Installation Options for the Activity Planner Component

	Field Name	CLI Option
	Description	
•	Database vendor	@RDBMS_Vendor@
	Specifies the vendor name of the RDBMS that you are using for the `planner` repository. • For DB2®, use **DB2**. • For Informix®, use **Informix**. • For Microsoft® SQL Server, use **MS_SQL**. • For Oracle, use **Oracle**. • For Sybase, use **Sybase**.	
•	RIM host	@RDBMS_Host@
	Specifies the name of the managed node that you have configured to be the RIM host of the Tivoli region. If you want the Tivoli server to be the RIM host, you can use the default entry, **ALI_host**.	
•	Database ID	@RDBMS_DB_Name@
	Specifies the name of the `planner` repository in the RDBMS. • For DB2, use the name of the DB2 server created for Activity Planner. If you created a remote client that uses an alias, use the alias name. • For Informix, use the name of the ODBC created for Activity Planner. If you created a remote client that uses an alias, use the alias name. • For Microsoft SQL Server, use the default value **planner**. If you create the database without using any of the supplied scripts, you can use any name for the repository. • For Oracle, use the value of the ORACLE_SID variable. This value is the Oracle instance ID and is located in the `tnsnames.ora` file in the `$ORACLE_HOME/network/admin` directory. The default value that is set during the installation is **ORCL**. • For Sybase, use the default value **planner**. If you create the database without using any of the supplied scripts, you can use any name for the repository.	

Table 10. Installation Options for the Activity Planner Component (continued)

	Field Name	CLI Option
	Description	
•	Database home	@RDBMS_DB_Home@
	Specifies the path to the directory where the RDBMS server or client software is installed on the RIM host. • For DB2, use the value of the DB2DIR variable. • For Informix, use the value of the INFORMIXDIR variable on a UNIX RIM host, or use the path to the RDBMS server or client software on a Windows RIM host. • For Microsoft SQL Server, use the path to the RDBMS server or client software. • For Oracle, use the value of the ORACLE_HOME variable. • For Sybase, use the value of the SYBASE variable. If the RIM host is on a different machine than the RDBMS server, the value of SYBASE is the directory on the RIM host where the `interfaces` file is located.	
•	Server ID	@RDBMS_DB_Param_one@
	Specifies the vendor-specific information that enables the RDBMS to connect to the RIM host. • For DB2, use **tcpip**. • For Informix, use the value of the INFORMIXDIR variable. • For Microsoft SQL Server, use the host name of the machine where Microsoft SQL Server is installed. • For Oracle, use the value of the TWO_TASK variable that is located in the `tnsnames.ora` file in the `$ORACLE_HOME/network/admin` directory. • For Sybase, use the value of the DSQUERY variable in the `interfaces` file.	
•	Database user name	@RDBMS_DB_UserName@
	Specifies the name of the owner of the `planner` repository. The default is **planner**. • For DB2, specify the name of the user that owns the `planner` repository. The default name is **planner**. • For Informix, specify the name of the user that owns the `planner` repository. The default name is **planner**. • For Microsoft SQL Server, use the name of the user that owns the `planner` repository. • For Oracle, use **planner** for a UNIX RIM host but use **planner@***two_task* for a Windows RIM host, where *two_task* is the value of the TWO_TASK variable. • For Sybase, specify the name of the user that owns the `planner` repository. The default name is **planner**.	
•	Instance name (DB2 only)	@RDBMS_DB_Param_two@
	Specifies the name of the DB2 instance.	
•	Activity Planner user name	@Username@
	Specifies the Tivoli administrator (with the associated system accounts) who uses Activity Planner. The default is **tivapm**.	

Table 10. Installation Options for the Activity Planner Component (continued)

	Field Name	CLI Option
	Description	
•	Activity Planner password	@Password@
	Specifies the password for the provided user. **Notes:** 1. Before you perform an Installshield Multiplatform "Typical" fresh installation on Windows Server 2008, you must disable ″Windows Password Security Requirements″ by performing the following steps: a. Go to Computer Management -> Local Security Policy -> Password Policy -> Password must meet security requirements. b. Click Disable. Otherwise, perform a ″Custom″ fresh installation and, when asked to specify the Activity Planner password, ensure you specify a password that meets the Windows Server 2008 security requirements. 2. When installing from the command line, you must add the @From@=CLI option to the command. When you use this option, the CLI password is set to the same as the username.	

Change Manager

The Change Manager component depends on the previous installation of the following software:

- Tivoli Management Framework, version 4.3.1
- Java Client Framework for Tivoli, version 4.3.1
- Java 1.4.2 for Tivoli
- Java RDBMS Interface Module, version 4.3.1
- Activity Planner, version 4.3.1.

Table 11 provides the installation options that you can specify when you install the Change Manager component.

Table 11. Installation Options for the Change Manager Component

	Field Name	CLI Option
	Description	
•	Database vendor	@RDBMS_Vendor@
	Specifies the vendor name of the RDBMS that you are using for the `ccm` repository. • For DB2, use **DB2**. • For Informix, use **Informix**. • For Microsoft SQL Server, use **MS_SQL**. • For Oracle, use **Oracle**. • For Sybase, use **Sybase**.	
•	RIM host	@RDBMS_Host@
	Specifies the name of the managed node that you have configured to be the RIM host of the Tivoli region. If you want the Tivoli server to be the RIM host, you can use the default entry, **ALI_host**.	

Table 11. Installation Options for the Change Manager Component (continued)

	Field Name	CLI Option
	Description	
•	Database ID	@RDBMS_DB_Name@
	Specifies the name of the ccm repository in the RDBMS. • For DB2, use the name of the DB2 server database created for Change Manager. If you created a remote client that uses an alias, use the alias name. • For Informix, use the name of the ODBC created for Change Manager. If you created a remote client that uses an alias, use the alias name. • For Microsoft SQL Server, use the default value **ccm**. If you create the database without using any of the supplied scripts, you can use any name for the repository. • For Oracle, use the value of the ORACLE_SID variable. This value is the Oracle instance ID and is located in the tnsnames.ora file in the $ORACLE_HOME/network/admin directory. The default value that is set during the installation is **ORCL**. • For Sybase, use the default value **ccm**. If you create the database without using any of the supplied scripts, you can use any name for the repository.	
•	Database home	@RDBMS_DB_Home@
	Specifies the path to the directory where the RDBMS server or client software is installed on the RIM host. • For DB2, use the value of the DB2DIR variable. • For Informix, use the value of the INFORMIXDIR variable on a UNIX RIM host, or use the path to the RDBMS server or client software on a Windows RIM host. • For Microsoft SQL Server, use the path to the RDBMS server or client software. • For Oracle, use the value of the ORACLE_HOME variable. • For Sybase, use the value of the SYBASE variable. If the RIM host is on a different machine than the RDBMS server, the value of SYBASE is the directory on the RIM host where the interfaces file is located.	
•	Server ID	@RDBMS_DB_Param_one@
	Specifies the vendor-specific information that enables the RDBMS to connect to the RIM host. • For DB2, use **tcpip**. • For Informix, use the value of the INFORMIXDIR variable. • For Microsoft SQL Server, use the host name of the machine where Microsoft SQL Server is installed. • For Oracle, use the value of the TWO_TASK variable that is located in the tnsnames.ora file in the $ORACLE_HOME/network/admin directory. • For Sybase, use the value of the DSQUERY variable in the interfaces file.	
•	Database user name	@RDBMS_DB_UserName@
	Specifies the name of the owner of the ccm repository. The default is **tivoli**. • For DB2, use the name of the instance owner of the ccm repository. • For Informix, specify the name of the user that owns the ccm repository. The default name is **tivoli**. • For Microsoft SQL Server, use the name of the user that owns the ccm repository. • For Oracle, use **tivoli** for a UNIX RIM host but use **tivoli@***two_task* for a Windows RIM host, where *two_task* is the value of the TWO_TASK variable. • For Sybase, specify the name of the user that owns the ccm repository. The default name is **tivoli**.	
•	Instance name (DB2 only)	@RDBMS_DB_Param_two@
	Specifies the name of the DB2 instance.	

Enterprise Directory Query Facility

The Enterprise Directory Query Facility component depends on the previous installation of the following software:

- Tivoli Management Framework, version 4.3.1
- Java 1.4.2 for Tivoli
- Resource Manager, for resource management of users
- An installed and configured LDAP directory server. For a list of supported LDAP directory servers, see *IBM Tivoli Configuration Manager Release Notes*.

Table 12 provides the installation options that you can specify when you install the Enterprise Directory Query Facility component.

Table 12. Installation Options for the Enterprise Directory Query Facility Component

	Field Name	CLI Option
	Description	
•	Server host name	@ServerUrl@
	Specifies the host name of the LDAP server.	
•	Server port	@Server_port@
	Specifies the port that is used to connect to Enterprise Directory Query Facility. The default is 389.	
•	Server SSL port	@Server_ssl_port@
	Specifies the port that is used to connect to Enterprise Directory Query Facility when using SSL. The default is 636.	
•	Distinguished name	@Username@
	Specifies the distinguished name of the user with LDAP Administrator privileges. For example, the LDAP administrator for Microsoft Active Directory in the .swd.com domain would be specified as follows: `CN=Administrator,CN=Users,dc=SWD,dc=COM`	
•	Password	@Password@
	Specifies the password for the LDAP user.	
•	Access protocol	@Provider@
	Specifies the protocol used for enterprise directory connections. The default is `com.sun.jndi.ldap.LdapCtxFactory`.	
•	Naming context	@Context_name@
	Specifies the naming context in the enterprise directory tree level used to retrieve information with a query. For example, the naming context within Microsoft Active Directory that is required to make a query to obtain a list of users in the .swd.com domain would be specified as follows: `CN=Users,dc=SWD,dc=COM`	
•	Keystore path	@Keystore_path@
	Specifies the patch contain the certification repository (the keystore) that is used for SSL connections.	
•	Keystore password	@Keystore_passwd@
	Specifies the password associated with the keystore.	

After installing the Enterprise Directory Query Facility component, you must run the LDAP-specific script to extend the schema. For details, see "Running Enterprise Directory Query Facility Scripts" on page 69.

Inventory

The Inventory component depends on the previous installation of the following software:

- Tivoli Management Framework, version 4.3.1 or later
- Scalable Collection Service, version 4.3.1
- Java 1.4.2 for Tivoli
- Java RDBMS Interface Module, version 4.3.1
- Java Client Framework for Tivoli, version 4.3.1

Table 13 provides the installation options that you can specify when you install the Inventory component.

Table 13. Installation Options for the Inventory Component

	Field Name	CLI Option
	Description	
•	Data handler host	@INV_DATA_HOST@
	Specifies the name of the managed node that is the Inventory Data handler.	
•	MDist2 callback host	@INV_CB_HOST@
	Specifies the name of the managed node that is the Inventory callback host.	
•	Database vendor	@RDBMS_Vendor@
	Specifies the vendor name of the RDBMS that you are using for the configuration repository. • For DB2, use **DB2**. • For Informix, use **Informix**. • For Microsoft SQL Server, use **MS_SQL**. • For Oracle, use **Oracle**. • For Sybase, use **Sybase**.	
•	RIM host	@RDBMS_Host@
	Specifies the name of the managed node that you have configured to be the RIM host of the Tivoli region. If you want the Tivoli server to be the RIM host, you can use the default entry, **ALI_host**.	
•	Database ID	@RDBMS_DB_Name@
	Specifies the name of the configuration repository in the RDBMS. • For DB2, the name of the DB2 database; for a remote client that uses an alias, the alias name. • For Informix, use the name of the ODBC created for Inventory. If you create a remote client that uses an alias, use the alias name. • For Microsoft SQL Server, use the default value **inv_db**. If you create the database without using any of the supplied scripts, you can use any name for the repository. • For Oracle, the value of the ORACLE_SID variable, which is located in the `tnsnames.ora` file in the `$ORACLE_HOME/network/admin` directory. The default value that is set during the installation is **ORCL**. • For Sybase, use the default value **inv_db**. If you create the database without using any of the supplied scripts, you can use any name for the repository.	

Table 13. Installation Options for the Inventory Component (continued)

	Field Name	CLI Option
	Description	
•	Database home	@RDBMS_DB_Home@
	Specifies the path to the directory where the RDBMS server or client software is installed on the RIM host. • For DB2, use the value of the DB2DIR variable. • For Informix, use the value of the INFORMIXDIR variable on a UNIX RIM host, or use the path to the RDBMS server or client software on a Windows RIM host. • For Microsoft SQL Server, use the path to the RDBMS server or client software. • For Oracle, use the value of the ORACLE_HOME variable. • For Sybase, use the value of the SYBASE variable. When the RIM host and RDBMS server are on different machines, the value of SYBASE is the directory on the RIM host where the `interfaces` file is located.	
•	Server ID	@RDBMS_DB_Param_one@
	Specifies the vendor-specific information that enables the RDBMS to connect to the RIM host. • For DB2, use **tcpip**. • For Informix, use the value of the INFORMIXDIR variable. • For Microsoft SQL Server, use the host name of the machine where Microsoft SQL Server is installed. • For Oracle, use the value of the TWO_TASK variable in the `tnsnames.ora` file in the `$ORACLE_HOME/network/admin` directory. • For Sybase, use the value of the DSQUERY variable in the `interfaces` file.	
•	User name	@RDBMS_DB_UserName@
	Specifies the name of the owner of the configuration repository. • For DB2, use the name of the instance owner. • For Informix, use **informix**. • For Microsoft SQL Server, use the name of the user that owns the configuration repository. • For Oracle, use **invtiv** for a UNIX RIM host and **invtiv@***two_task* for a Windows RIM host, where *two_task* is the value of the TWO_TASK variable. • For Sybase, use **invtiv** or the name of the user who owns the configuration repository.	
•	Instance name (DB2 only)	@RDBMS_DB_Param_two@
	Specifies the name of the DB2 instance.	

Inventory Gateway

The Inventory Gateway component depends on the previous installation of the following software:

- Tivoli Management Framework, version 4.3.1.

During the installation of this component, you are not prompted for any installation options.

Patch Management

The Patch Management component depends on the previous installation of the following software:

- Tivoli Management Framework, version 4.3.1
- Java Client Framework for Tivoli, version
- Java 1.4.2 for Tivoli
- Java RDBMS Interface Module, version
- Activity Planner, version 4.3.1
- Software Distribution, version 4.3.1

Table 14 provides the installation options that you can specify when you install the Patch Management component.

Table 14. Installation Options for the Patch Management Component

	Field Name	CLI Option
	Description	
•	Managed node	@SrcHost_Name@
	Specifies the managed node where the WUA and qchain.exe files have been downloaded.	
•	Directory	@Wua_Path@
	Specifies the path of the directory where the WUA and qchain.exe files are located.	

Pristine Manager

The Pristine Manager component depends on the previous installation of the following software:

- Tivoli Management Framework, version 4.3.1.

Table 15 provides the installation options that you can specify when you install the Pristine Manager component.

Table 15. Installation Options for the Pristine Manager Component

	Field Name	CLI Option
	Description	
•	Database vendor	@RDBMS_Vendor@
	Specifies the vendor name of the RDBMS that you are using for the pristine repository. • For DB2, use **DB2**. • For Informix, use **Informix**. • For Microsoft SQL Server, use **MS_SQL**. • For Oracle, use **Oracle**. • For Sybase, use **Sybase**.	
•	RIM host	@RDBMS_Host@
	Specifies the name of the managed node that you have configured to be the RIM host of the Tivoli region. If you want the Tivoli server to be the RIM host, you can use the default entry, **ALI_host**.	

Table 15. Installation Options for the Pristine Manager Component (continued)

	Field Name	CLI Option
	Description	
•	Database ID	@RDBMS_DB_Name@
	Specifies the name of the `pristine` repository in the RDBMS. • For DB2, use the name of the DB2 server database created for Pristine Manager. If you created a remote client that uses an alias, use the alias name. • For Informix, use the name of the ODBC created for Pristine Manager. If you created a remote client that uses an alias, use the alias name. • For Microsoft SQL Server, use the default value **pristine**. If you create the database without using any of the supplied scripts, you can use any name for the repository. • For Oracle, use the value of the ORACLE_SID variable. This value is the Oracle instance ID and is located in the `tnsnames.ora` file in the `$ORACLE_HOME/network/admin` directory. The default value that is set during the installation is **ORCL**. • For Sybase, use the default value **pristine**. If you create the database without using any of the supplied scripts, you can use any name for the repository.	
•	Database home	@RDBMS_DB_Home@
	Specifies the path to the directory where the RDBMS server or client software is installed on the RIM host. • For DB2, use the value of the DB2DIR variable. • For Informix, use the value of the INFORMIXDIR variable on a UNIX RIM host, or use the path to the RDBMS server or client software on a Windows RIM host. • For Microsoft SQL Server, use the path to the RDBMS server or client software. • For Oracle, use the value of the ORACLE_HOME variable. • For Sybase, use the value of the SYBASE variable. If the RIM host is on a different machine than the RDBMS server, the value of SYBASE is the directory on the RIM host where the `interfaces` file is located.	
•	Server ID	@RDBMS_DB_Param_one@
	Specifies the vendor-specific information that enables the RDBMS to connect to the RIM host. • For DB2, use **tcpip**. • For Informix, use the value of the INFORMIXDIR variable. • For Microsoft SQL Server, use the host name of the machine where Microsoft SQL Server is installed. • For Oracle, use the value of the TWO_TASK variable that is located in the `tnsnames.ora` file in the `$ORACLE_HOME/network/admin` directory. • For Sybase, use the value of the DSQUERY variable in the `interfaces` file.	
•	Database user name	@RDBMS_DB_UserName@
	Specifies the name of the owner of the `pristine` repository. The default is **tivoli**. • For DB2, use the name of the instance owner of the `pristine` repository. • For Informix, specify the name of the user that owns the `pristine` repository. The default name is **tivoli**. • For Microsoft SQL Server, use the name of the user that owns the `pristine` repository. • For Oracle, use **tivoli** for a UNIX RIM host but use **tivoli@***two_task* for a Windows RIM host, where *two_task* is the value of the TWO_TASK variable. • For Sybase, specify the name of the user that owns the `pristine` repository. The default name is **tivoli**.	
•	Instance name (DB2 only)	@RDBMS_DB_Param_two@
	Specifies the name of the DB2 instance.	

Pristine Manager Gateway

The Pristine Manager Gateway component depends on the previous installation of the following software:

- Tivoli Management Framework, version 4.3.1.

During the installation of this component, you are not prompted for any installation options.

Resource Manager

The Resource Manager component depends on the previous installation of the following software:

- Tivoli Management Framework, version 4.3.1.

Table 16 provides the installation options that you can specify when you install the Resource Manager component when Inventory is not currently installed in the local Tivoli region. Resource Manager and Inventory share the same table space. When Resource Manager and Inventory do not share the same table space (because Resource Manager has its own table space), the repository used by Resource Manager is the trm repository. This information is reflected in Table 16.

Note: If you install Resource Manager when Inventory is already installed, you are asked to provide the values in Table 16 in a window. You do not need to provide these values again, as they have already been provided when Inventory was installed. If you do provide the values again, they will be ignored.

Table 16. Installation Options for the Resource Manager Component

	Field Name	CLI Option
	Description	
•	Database vendor	@RDBMS_Vendor@
	Specifies the vendor name of the RDBMS that you are using for the trm repository. • For DB2, use **DB2**. • For Informix, use **Informix**. • For Microsoft SQL Server, use **MS_SQL**. • For Oracle, use **Oracle**. • For Sybase, use **Sybase**.	
•	RIM host	@RDBMS_Host@
	Specifies the name of the managed node that you have configured to be the RIM host of the Tivoli region. If you want the Tivoli server to be the RIM host, you can use the default entry, **ALI_host**.	

Table 16. Installation Options for the Resource Manager Component (continued)

	Field Name	CLI Option
	Description	
•	Database ID	@RDBMS_DB_Name@
	Specifies the name of the configuration repository in the RDBMS. • For DB2, use the name of the DB2 database; for a remote client that uses an alias, the alias name. • For Informix, use the name of the ODBC created for Inventory. If you create a remote client that uses an alias, use the alias name. • For Microsoft SQL Server, use the default value **trm**. If you create the database without using any of the supplied scripts, you can use any name for the repository. • For Oracle, use the value of the ORACLE_SID variable, which is located in the `tnsnames.ora` file in the `$ORACLE_HOME/network/admin` directory. The installation default is **ORCL**. • For Sybase, use the default value **trm**. If you create the database without using any of the supplied scripts, you can use any name for the repository.	
•	Database home	@RDBMS_DB_Home@
	Specifies the path to the directory where the RDBMS server or client software is installed on the RIM host. • For DB2, use the value of the DB2DIR variable. • For Informix, use the value of the INFORMIXDIR variable on a UNIX RIM host, or use the path to the RDBMS server or client software on a Windows RIM host. • For Microsoft SQL Server, use the path to the RDBMS server or client software. • For Oracle, use the value of the ORACLE_HOME variable. • For Sybase, use the value of the SYBASE variable. When the RIM host and RDBMS server are on different machines, the value of SYBASE is the directory on the RIM host where the `interfaces` file is located.	
•	Server ID	@RDBMS_DB_Param_one@
	Specifies the vendor-specific information that enables the RDBMS to connect to the RIM host. • For DB2, use **tcpip**. • For Informix, use the value of the INFORMIXDIR variable. • For Microsoft SQL Server, use the host name of the machine where Microsoft SQL Server is installed. • For Oracle, use the value of the TWO_TASK variable in the `tnsnames.ora` file in the `$ORACLE_HOME/network/admin` directory. • For Sybase, use the value of the DSQUERY variable in the `interfaces` file.	
•	User name	@RDBMS_DB_UserName@
	Specifies the name of the owner of the configuration repository. • For DB2, the name of the instance owner. • For Informix, **informix**. • For Microsoft SQL Server, use the name of the user that owns the configuration repository. • For Oracle, **tivoli** for a UNIX RIM host and **tivoli@***two_task* for a Windows RIM host, where *two_task* is the value of the TWO_TASK variable. • For Sybase, **tivoli** or the name of the user who owns the configuration repository.	
•	Instance name (DB2 only)	@RDBMS_DB_Param_two@
	Specifies the name of the DB2 instance.	

Resource Manager Gateway

The Resource Manager Gateway component depends on the previous installation of the following software:

- Tivoli Management Framework, version 4.3.1.

During the installation of this component, you are not prompted for any installation options.

Scalable Collection Service

The Scalable Collection Service component depends on the previous installation of the following software:

- Tivoli Management Framework, version 4.3.1.

The Scalable Collection Service component is a patch image, not a product image.

During the installation of this component, you are not prompted for any installation options.

Software Distribution

The Software Distribution component depends on the previous installation of the following software:

- Tivoli Management Framework, version 4.3.1
- Inventory, version 4.3.1

  Software Distribution requires that the Inventory, version 4.3.1 component must be installed on the Tivoli management region.

During the installation of this component, you are not prompted for any installation options.

Software Distribution Gateway

The Software Distribution Gateway component depends on the previous installation of the following software:

- Tivoli Management Framework, version 4.3.1

During the installation of this component, you are not prompted for any installation options.

Software Package Editor

The Software Package Editor component depends on the previous installation of the following software:

- Tivoli Management Framework, version 4.3.1
- Java 1.4.2 for Tivoli
- Software Distribution, version 4.3.1.

During the installation of this component, you are not prompted for any installation options.

Query Directory for Microsoft Active Directory

The Query Directory for Microsoft Active Directory component depends on the previous installation of the following software:

- Tivoli Management Framework, version 4.3.1

Table 17 provides the installation options that you can specify when you install the Change Manager component.

Table 17. Installation Options for the Query Directory for Microsoft Active Directory Component

	Field Name	CLI Option
	Description	
•	Database vendor	@RDBMS_Vendor@
	Specifies the vendor name of the RDBMS that you are using for the `ad_db` repository. • For DB2, use **DB2**. • For Informix, use **Informix**. • For Microsoft SQL Server, use **MS_SQL**. • For Oracle, use **Oracle**. • For Sybase, use **Sybase**.	
•	RIM host	@RDBMS_Host@
	Specifies the name of the managed node that you have configured to be the RIM host of the Tivoli region. If you want the Tivoli server to be the RIM host, you can use the default entry, **ALI_host**.	
•	Database ID	@RDBMS_DB_Name@
	Specifies the name of the `ad_db` repository in the RDBMS. • For DB2, use the name of the DB2 server database created for Query Directory for Microsoft Active Directory. If you created a remote client that uses an alias, use the alias name. • For Informix, use the name of the ODBC created for Query Directory for Microsoft Active Directory. If you created a remote client that uses an alias, use the alias name. • For Microsoft SQL Server, use the default value **ad_db**. If you create the database without using any of the supplied scripts, you can use any name for the repository. • For Oracle, use the value of the ORACLE_SID variable. This value is the Oracle instance ID and is located in the `tnsnames.ora` file in the `$ORACLE_HOME/network/admin` directory. The default value that is set during the installation is **ORCL**. • For Sybase, use the default value **ad_db**. If you create the database without using any of the supplied scripts, you can use any name for the repository.	
•	Database home	@RDBMS_DB_Home@
	Specifies the path to the directory where the RDBMS server or client software is installed on the RIM host. • For DB2, use the value of the DB2DIR variable. • For Informix, use the value of the INFORMIXDIR variable on a UNIX RIM host, or use the path to the RDBMS server or client software on a Windows RIM host. • For Microsoft SQL Server, use the path to the RDBMS server or client software. • For Oracle, use the value of the ORACLE_HOME variable. • For Sybase, use the value of the SYBASE variable. If the RIM host is on a different machine than the RDBMS server, the value of SYBASE is the directory on the RIM host where the `interfaces` file is located.	

Table 17. Installation Options for the Query Directory for Microsoft Active Directory Component (continued)

	Field Name	CLI Option
	Description	
•	Server ID	@RDBMS_DB_Param_one@
	Specifies the vendor-specific information that enables the RDBMS to connect to the RIM host. • For DB2, use **tcpip**. • For Informix, use the value of the INFORMIXDIR variable. • For Microsoft SQL Server, use the host name of the machine where Microsoft SQL Server is installed. • For Oracle, use the value of the TWO_TASK variable that is located in the `tnsnames.ora` file in the `$ORACLE_HOME/network/admin` directory. • For Sybase, use the value of the DSQUERY variable in the `interfaces` file.	
•	Database user name	@RDBMS_DB_UserName@
	Specifies the name of the owner of the `ad_db` repository. The default is **ad_user**. • For DB2, use the name of the instance owner of the `ad_db` repository. • For Informix, specify the name of the user that owns the `ad_db` repository. The default name is **tivoli**. • For Microsoft SQL Server, use the name of the user that owns the `ad_db` repository. • For Oracle, use **tivoli** for a UNIX RIM host but use **tivoli@***two_task* for a Windows RIM host, where *two_task* is the value of the TWO_TASK variable. • For Sybase, specify the name of the user that owns the `ad_db` repository. The default name is **tivoli**.	
•	Instance name (DB2 only)	@RDBMS_DB_Param_two@
	Specifies the name of the DB2 instance.	

Query Directory for Microsoft Active Directory Command Line

The Query Directory for Microsoft Active Directory Command Line component depends on the previous installation of the following software:

- Tivoli Management Framework, version 4.3.1.

During the installation of this component, you are not prompted for any installation options.

Tivoli Provisioning Manager for Operating System Deployment integration

The Tivoli Provisioning Manager for Operating System Deployment integration depends on the previous installation of the following software:

- Tivoli Management Framework, version 4.3.1
- Activity Planner, version 4.3.1

Table 18 on page 48 provides the installation options that you can specify when you install the Tivoli Provisioning Manager for Operating System Deployment integration.

Table 18. Installation Options for the Tivoli Provisioning Manager for Operating System Deployment integration

	Field Name	CLI Option
	Description	
•	TPMforOSDeployment Server	@REMBO_MASTER@
	The name of the Tivoli Configuration Manager TMR server, where the Tivoli Provisioning Manager for OS Deployment component will be installed.	
•	Installation Type	@REMBO_INSTALLATION_TYPE@
	Specifies which Operating System Imaging Solution operations will be available on each Managed Node, where the Rembo plug-in is installed.	
•	USMT Path	@REMBO_USMT_PATH@
	The path where the USMT tool is installed.	

CM Extension for Tivoli License Manager

The CM Extension for Tivoli License Manager depends on the previous installation of the following software:

- Tivoli Management Framework, version 4.3.1
- Software Distribution, version 4.3.1

Table 19 provides the installation options that you can specify when you install the CM Extension for Tivoli License Manager.

Table 19. Installation Options for the CM Extension for Tivoli License Manager

	Field Name	CLI Option
	Description	
•	License Manager Administration Server address	@TLMServer@
	The License Compliance Manager administration server address (IP address or host name).	
•	License Manager Extension Name	@TLMExtRTName@
	The name of the License Manager Extension. The License Manager Extension allows the Administration server to recognize the Tivoli management region server as a License Compliance Manager runtime server. You will need to provide this name when you install IBM Tivoli License Compliance Manager, version 2.2 Fix Pack 1.	
•	Catalog Manager user name	@CatManUser@
	A user name with administrative rights to the DB2 database. You can log on as the tlmsrv user, which is created to enable the License Compliance Manager administration server to access the database, or as any other DB2 user that has read / write access rights to the SWCAT schema of the License Compliance Manager administration server database.	
•	Catalog manager password	@CatManPwd@
	The password of the catalog manager user.	

CM Endpoint Extension

The CM Endpoint Extension component depends on the previous installation of the following software:

- Tivoli Management Framework, version 4.3.1.

- Inventory Gateway, version 4.3.1

During the installation of this component, you are not prompted for any installation options.

IBM Tivoli Configuration Manager InstallShield Wizard

IBM Tivoli Configuration Manager provides two local InstallShield wizard programs:

- Server installation
- Desktop installation

Using the installation program, you can install directly from the CDs or copy the CD to a file system and mount that file system. The installation programs are as follows:

Server installation

The server installation program has a typical and a custom option. During a typical installation, the default values for many installation options are assumed, and fields for these options are not presented. During a custom installation, you can change the default values for the installation options. Independent of whether you select a typical or custom installation, not all the installation options shown in the tables in “Installation Options” on page 33 are presented. If a Tivoli environment does not exist on the machine where you want to install IBM Tivoli Configuration Manager, you use either the custom or typical server installation program. This installation program creates a Tivoli server for your configuration management environment by installing all components (typical) or selected components (custom), creating the required RIM objects, and optionally creating the databases used by the components of IBM Tivoli Configuration Manager.

If a Tivoli environment exists on the machine where you want to install IBM Tivoli Configuration Manager, the server installation program will install or upgrade your IBM Tivoli Configuration Manager components to the current level. The installation program cannot create the databases unless the RDBMS software is installed and configured on this system.

Because this installation program optionally creates the required databases, the installer is asked for the password for the database administrator (DBA) so that the admin and schema scripts can be run by the installation program. If the installer is not the DBA, when asked the level of database configuration, select **None** and click **Next**.

Even when the installer has the DBA password, you might need to perform some manual database operations before running the admin scripts to create the users and table spaces. For information about which admin scripts require manual work, see Chapter 4, “Working With Repositories and Queries,” on page 51.

To use this installation program, see “Server Installation” on page 84.

Desktop installation

This installation program installs Tivoli Desktop for Windows and the administrative interfaces provided by IBM Tivoli Configuration Manager.

To use this installation program, see “Desktop Installation” on page 117.

Installation Sequence for Components

Depending on whether you use the InstallShield wizard provided by IBM Tivoli Configuration Manager or the installation mechanisms provided by Tivoli Management Framework, the installation sequence is different.

The installation images used by this installation program are on various IBM Tivoli Configuration Manager and Tivoli Management Framework CDs. You are prompted to locate the appropriate CD and appropriate installation image during the installation or upgrade.

Installation Sequence Using IBM Tivoli Configuration Manager Mechanisms

If you plan to use the InstallShield wizard provided by IBM Tivoli Configuration Manager, follow your deployment plan and install the components in the following sequence:

1. Use the Server InstallShield wizard (seeChapter 5, “IBM Tivoli Configuration Manager Installation and Upgrade,” on page 75) provided by IBM Tivoli Configuration Manager to perform the following operations:
   - Create the Tivoli management region server (Tivoli server)
   - Creates a gateway on the Tivoli server
   - Install the required Java packages on the Tivoli server
   - Install the required IBM Tivoli Configuration Manager components and services on the Tivoli server
   - Run the scripts to create and configure the RIM databases used by IBM Tivoli Configuration Manager
   - Install the Inventory software signatures
   - Install Patch Management, if required.
2. If required, use the Desktop InstallShield wizard (see Chapter 6, “Desktop Installation,” on page 115) provided by IBM Tivoli Configuration Manager to perform the following operations on different machine to the machine in step 1.:
   - Install Tivoli Desktop for Windows
   - Install the required IBM Tivoli Configuration Manager administrative interfaces

   These operations are performed on a different machine to the server.

   At this point, you have a working Tivoli environment with a complete installation of IBM Tivoli Configuration Manager. You can now create managed nodes, gateways, and endpoints to create the remainder of your Tivoli region. Instructions for creating these resources are in *Tivoli Enterprise Installation Guide*.
3. Use the Tivoli Management Framework installation mechanisms or the InstallShield wizard to install IBM Tivoli Configuration Manager components on managed nodes and gateways.

Chapter 4. Working With Repositories and Queries

To store data in an RDBMS, you need to create a repository. To create repositories, you run admin and schema scripts. The applications communicate with the RDBMS through RIM objects. When you install IBM Tivoli Configuration Manager, you create the required RIM objects on systems that become known as RIM hosts.

Depending on your installation approach and your RDBMS choice, you might need to manually create the databases (the table spaces and view) in the RDBMS. You can create the databases before or after creating the RIM objects. If the requirements for the admin scripts are fulfilled, you will create the database using the installation program to install or upgrade IBM Tivoli Configuration Manager.

You must complete the following additional RDBMS configuration steps, depending on your configuration:

- "Creating DB2 table spaces" on page 53, which discusses requirements for databases, users, and passwords
- "Creating Informix table spaces" on page 54, which discusses requirements for databases, users, and passwords
- "Creating Microsoft SQL Server table spaces" on page 55, which discusses directory and file space requirements.
- "Creating Oracle table spaces" on page 56, which discusses database requirements.
- "Creating Sybase table spaces" on page 57, which discusses directory, file space, and device requirements.

The procedure and requirements for creating databases for each supported RDBMS is discussed in *Tivoli Enterprise Installation Guide*. For a list of supported RDBMS vendors, see *Tivoli Management Framework Release Notes*.

Running the Admin Scripts

Running an admin script creates the container for all the logical objects (users, views, and so forth) and creates the table space that stores all the physical data in the tables. The admin scripts used by IBM Tivoli Configuration Manager are located on IBM Tivoli Configuration Manager Installation, version 4.3.1 in the `/SQL/admin` directory.

The names of the admin script have the following format:

component`_`*vendor*`_admin.sql`

where:

component
: One of the following abbreviations for an IBM Tivoli Configuration Manager component:

  cm The abbreviation used by the admin scripts to create all the table spaces required by all the components of IBM Tivoli Configuration Manager. Running this script creates a single database with the required table spaces for each component. By default, this database

is cm_db. Having a single admin script allows the database administrator (DBA) to manage storage space on a component-by-component basis.

ccm The abbreviation used by the admin scripts for the Change Manager database. The admin script creates the required table spaces for the ccm repository.

inv The abbreviation used by the admin scripts for the Inventory and Resource Manager databases. The admin script creates the required table spaces for the inv_db repository.

mdist The abbreviation used by the admin scripts for the Distribution Status database. The admin script creates the required table spaces for the mdist2 repository.

plans The abbreviation used by the admin scripts for the Activity Planner database. The admin script creates the required table spaces for the planner repository.

pristine
The abbreviation used by the admin scripts for the Pristine Manager database. The admin script creates the required table spaces for the pristine repository.

adi The abbreviation used by the admin scripts for the Query Directory for Microsoft Active Directory. The admin script creates the required table spaces for the ad_db repository.

vendor One of the following abbreviations for supported RDBMS vendors:

db2 IBM DB2

infx Informix

ms_sql
Microsoft SQL Server

ora Oracle

syb Sybase

Table 20 on page 53 contains the databases and table spaces created by running the individual admin scripts. You can run the cm_*vendor*_admin.sql script to create all the databases and table spaces in a single database or modify this script to create only a subset of the databases and table spaces.

For example, to create the ccm database on a separate server, that is another database, the DBA can remove or comment out the SQL command related to the ccm database from the cm_*vendor*_admin.sql script. The DBA can then run the cm_*vendor*_admin.sql script and the ccm_*vendor*_admin.sql script against the appropriate RDBMS servers or databases.

Table 20. The Databases and Table Spaces Created By Running the Admin Scripts

Component	Database name	Table space name	Table space size	Log file size[1]	User name	Password
Inventory	inv_db	inv_ts	1024 MB	128 MB	invtiv	tivoli
Change Manager	ccm	ccm_ts	128 MB	16 MB	tivoli	tivoli
Activity Planner	planner	planner_ts	128 MB	16 MB	planner	planner
Distribution Status	mdist2	mdist2_ts	128 MB	16 MB	mdstatus	mdstatus
Pristine Manager	pristine	pristine_ts	128 MB	16 MB	pristine	pristine
Query Directory for Microsoft Active Directory	ad_db	ad_ts	128 MB	16 MB	ad_user	tivoli

[1] The log file size for an Oracle database is the system default size instead of the size listed in the table. An Oracle database allocates sufficient system log space when the **CREATE DATABASE** command is run. The provided admin scripts do not create any additional log space.

The `cm_vendor_admin.sql` script, without modification, creates all the table spaces shown in Table 20, creates a single log file of 176 MB, and creates all the users in the cm_db database. Each RDBMS provides utilities to move tables to different table spaces after they are created. If you want to move tables to different table spaces, see the vendor documentation.

The log files are created at 12.5% of the size of the database. The recommendation of database vendors is that the log files should be from 10% to 25% of the database size. If necessary, the DBA can allocate additional log space after installation.

Creating DB2 table spaces

The DB2 admin scripts create the required table spaces.

Requirement: The **db2** admin scripts do not create the default databases. You must use the **CREATE DATABASE** command to create the databases, and use the **CATALOG DATABASE** command to catalog the database before running the admin script.

The **db2** admin scripts create the table space and allocate the log space. The admin scripts do not create or catalog the databases. The size of the DB2 log file is measured in 4 KB pages. Therefore, 4 MB of log space would be as follows:

```
4 MB * 1024 KB/MB * 4 KB/page = 1024 pages
```

Requirement:

In DB2 databases, users are operating system users. The provided admin scripts do not create the required users. Although the admin scripts are to be run by a user with DB2 administration privileges. The db2 users with the passwords listed in Table 20, must exist on the local system. The default values are shown in the table. You can change these values before you start the installation. If the db2 users listed do not exist before the installation, the provided installation program will not fully complete.

Additionally, these users must be either:

- Previously defined on the system running the DB2 server as an authorized user (using the user management tool)
- Added as the user on the GRANT statement in the admin script.

If you did not run the admin scripts during the installation, complete the following steps:

1. From the IBM Tivoli Configuration Manager Installation, version 4.3.1, copy the following files from the `/SQL/admin` directory to a temporary directory on the RIM host:
   - `ccm_db2_admin.sql`
   - `inv_db2_admin.sql`
   - `mdist_db2_admin.sql`
   - `plans_db2_admin.sql`
   - `pristine_db2_admin.sql`
   - `adi_db2_admin.sql missing`

   If DB2 is installed on a z/OS® host, you must copy the following MVS™ scripts, located in the `/SQL/admin` directory to a temporary directory on the RIM host:
   - `ccm_db2_mvs_admin.sql`
   - `inv_db2_mvs_admin.sql`
   - `mdist_db2_mvs_admin.sql`
   - `plans_db2_mvs_admin.sql`
   - `pristine_db2_mvs_admin.sql`
   - `adi_db2_mvs_admin.sql`
2. Connect to the RDBMS server:

   `db2 connect to` *`database`* `user` *`name`* `using` *`password`*

   where *database* is the name or alias of the database in the system database directory, *name* is the user name of the instance owner of the database, and *password* is the password associated with the user.
3. Run the database admin scripts to create the database, to write output to the screen, and to write the output to the associated log files:

   `db2 -f` *`script_name`*`.sql -o -t -z` *`log_name`*`.log`

   where *script_name* is the name of the admin script and *log_name* is the name of the log file. Repeat this step for each admin script.

Creating Informix table spaces

Note: The InstallShield wizard does not support running admin and schema scripts for Informix.

The Informix admin scripts create:

- The database for the component (Activity Planner, Change Manager, Distribution Status Console, and Pristine Manager)
- The user to access the database

For more details about creating databases and database users, see the Informix documentation.

Requirement:

In Informix databases, users are operating system users. The provided admin scripts do not create the required users. The admin scripts are to be run by a user

with Informix administration privileges. The default users with the default passwords, as listed in Table 20 on page 53, must exist on the local system exactly as listed or installation using the provided installation program will not fully complete.

Complete the following steps, either before or after the installation:

1. From the IBM Tivoli Configuration Manager Installation, version 4.3.1, copy the following files from the /SQL/admin directory to a temporary directory on the RIM host:
   - mdist_infx_admin.sql
   - plans_infx_admin.sql
   - ccm_infx_admin.sql
   - inv_infx_admin.sql
   - pristine_infx_admin.sql
   - adi_infx_admin.sql
2. Run the database admin scripts to create the database, to write output to the screen, and to write the output to the associated log files:

   dbaccess - *script_name*

   where *script_name* is the path to the script, and the name of the script.

To complete database configuration, continue with "Installing Informix Schemas" on page 60.

Creating Microsoft SQL Server table spaces

The Microsoft SQL Server admin scripts create the required table spaces.

Requirement: Before running the **ms_sql** admin scripts, ensure that the directory where the database is to be created already exists and that it has sufficient space. You can edit the admin script by changing the default directory to an existing directory with sufficient space in the database.

The **ms_sql** admin scripts create files for the *db_name***.mdf** database object, the *component***_ts.ndf** file group, and the *component***_log.ldf** log file. These files are created in the default data directory (c:\Program Files\Microsoft SQL Server\MSSQL\data). The admin scripts create the database and default users.

The database automatically grows when space is needed and available. The admin script must be run by the sa user.

If you did not run the admin scripts during the installation, complete the following steps:

1. From the IBM Tivoli Configuration Manager Installation, version 4.3.1, copy the following files from the /SQL/admin directory to a temporary directory on the RIM host:
   - ccm_ms_sql_admin.sql
   - inv_ms_sql_admin.sql
   - mdist_ms_sql_admin.sql
   - plans_ms_sql_admin.sql
   - pristine_ms_sql_admin.sql
   - adi_ms_sql_admin.sql

2. From the temporary directory on the RIM host, run the admin scripts and log the output:

   ```
   isql -U sa -P password -S server_name -d database_name
   -i script_name.sql -o log_name.log
   ```

   where *password* is the password for the sa user, *server_name* is the name of the MSSQL server, *database_name* is the name of the database, *script_name* is the name of the admin script, and *log_name* is the name of the log file. Repeat this step for each admin script.

RIM objects now use ODBC to connect to the RDBMS server, therefore a System Data Source Name (ODBC connection) must be created, as follows:

1. Click **Start** → **Settings** → **Control Panel**
2. Double-click on **Data Sources (ODBC)**. In Windows 2000, double-click **Administrative Tools** then **Data Sources (ODBC)**
3. Select the **System DSN** tab, then click **Add**.
4. Scroll down to select SQL Server.
5. Click **Finish**. The Create a New Data Source to SQL Server dialog is displayed.
6. Type in the name of the database in the **Name** field and select the server from the **Server** pull-down menu.
7. Click **Next**. Select the ″With SQL Server authentication using a login ID and password entered by the user″ radio button. Deselect the ″Connect to SQL Server to obtain default settings for the additional configuration options″ checkbox.
8. Click **Next**. Do not change any of the default database settings.
9. Click **Next**. Do not change any of the default language settings.
10. Click **Finish**. The ODBC Microsoft SQL Server Setup window is displayed showing the configuration you have created.
11. Click **OK**. The Create a New Data Source to SQL Server dialog is redisplayed. It will contain the new datasource that you have created.

Note: When using the InstallShield wizard to install or upgrade IBM Tivoli Configuration Manager (Chapter 5, “IBM Tivoli Configuration Manager Installation and Upgrade,” on page 75), you must configure the ODBC driver before you start the installation or upgrade.

Creating Oracle table spaces

The Oracle admin scripts create the required table spaces.

Note: Oracle instant client is not supported when performing an installation using the InstallShield wizard. Oracle instant client cannot be used to run database sql scripts against the database, it can be used only to establish a RIM connection with the database.

Requirement: The **ora** admin scripts do not create the default databases. Oracle databases are created using environment variables and initialization files. The admin scripts cannot discover the values for these settings. Therefore, you must create the databases, using the **CREATE DATABASE** command, with the appropriate name before running the admin scripts.

The **ora** admin scripts use the Oracle defaults to create the needed table spaces and users, but not the default databases. The admin scripts create the *component***_ts.dbf** data files in the default Oracle directories. Note that these directories vary depending on the operating system.

The admin script must be run by the sys user.

If you did not run the admin scripts during the installation, complete the following steps:

1. From the IBM Tivoli Configuration Manager Installation, version 4.3.1, copy the following files from the `/SQL/admin` directory to a temporary directory on the computer system where the Oracle client is installed:
   - `ccm_ora_admin.sql`
   - `inv_ora_admin.sql`
   - `mdist_ora_admin.sql`
   - `plans_ora_admin.sql`
   - `pristine_ora_admin.sql`
   - `adi_ora_admin.sql`
2. The sys user must log in as **sysdba**. Therefore the admin scripts are run as follows:

   sqlplus "sys/*sys_password***@***server* **as sysdba" @***script_name*

   where:

   sys_password
   The password for the sys user.

   server The name of the Oracle server

   script_name
   The name of the admin script to run.

   The quotation marks (″) are important.

   Note: For Oracle 8.*x*, the password for the sys user cannot be the Oracle default password. When using the default password, you will receive an unrelated error.

Creating Sybase table spaces

The Sybase admin scripts create the required table spaces.

Requirement: Before running the **syb** admin scripts, ensure that the directory where the database is to be created already exists and that it has sufficient space. You can edit the admin script by changing the default directory to an existing directory with sufficient space in the database.

The **syb** admin scripts create devices where the table spaces, database, and users are created. In Sybase, the devices are numbered. The admin scripts uses two devices. The admin script reads the last number used and increments it by one. By default, there are 10 available devices, so ensure that there are enough available devices for use by the admin scripts.

Device sizes are specified in 2 kilobyte (KB) pages, so a device of 128 megabytes (MB) is calculated as follows:

```
128 MB * 1024 KB/MB * 1 page/2 KB = 65536 pages
```

The table space files created are as follows:

- *component*_**ts.dat**
- *component*_**log.dat**

The default data directory depends on the operating system. The following is the default by operating system:

For Windows

```
c:\sybase\data
```

For UNIX

```
/data/sybase
```

This directory must exist on the database server before the creation of the database, or the directory is edited in the admin script to an existing directory with sufficient space.

The admin script also creates the database and default users.

The admin script must be run by the sa user.

If you did not run the admin scripts during the installation, complete the following steps:

1. From the IBM Tivoli Configuration Manager Installation, version 4.3.1, copy the following files from the /SQL/admin directory to a temporary directory on the RIM host:
   - ccm_syb_admin.sql
   - inv_syb_admin.sql
   - mdist_syb_admin.sql
   - plans_syb_admin.sql
   - pristine_syb_admin.sql
   - adi_syb_admin.sql
2. From the temporary directory on the RIM host, run the admin scripts and log the output:

   ```
   isql -U sa -P password -S server_name -d database_name
   -i script_name.sql -o log_name.log
   ```

   where *password* is the password for the sa user, *server_name* is the name of the Sybase server, *database_name* is the name of the database, *script_name* is the name of the admin script, and *log_name* is the name of the log file. Repeat this step for each admin script.

Running the Schema Scripts

Running the schema scripts creates the tables and views in the allocated table spaces created by running the provided or modified admin scripts. For a new installation, the schema scripts are located on IBM Tivoli Configuration Manager Installation, version 4.3.1 in the /SQL/schema directory. For an upgrade, the schema scripts are located on IBM Tivoli Configuration Manager Installation, version 4.3.1 in the /SQL/migr directory.

Installing DB2 Schemas

Configuring the DB2 RDBMS consists of running several schema scripts, each creating tables in the DB2 RDBMS. The schema scripts are as follows:

inv_db2_schema.sql
Installs the inv_db repository schema, which defines its tables and views.

h_inv_db2_schema.sql
Installs the inventory history tables for the configuration repository. (This script is optional. It must be run subsequent to the inv_db2_schema.sql script.)

h_inv_db2_patch_mgmt.sql
Installs the Patch Management history tables for the configuration repository. (This script is optional. It must be run subsequent to the inv_db2_schema.sql script.)

plans_db2_schema.sql
Installs the planner repository schema, which defines its tables and views.

pristine_db2_schema.sql
Installs the pristine repository schema, which defines its tables and views.

ccm_db2_schema.sql
Installs the ccm repository schema, which defines its tables and views.

mdist_db2_schema.sql
Installs the mdist2 repository schema, which defines its tables and views.

adi_db2_schema.sql
Installs the adi_db repository schema, which defines its tables and views.

If you did not run the schema scripts during the installation, complete the following steps:

1. From the IBM Tivoli Configuration Manager Installation, version 4.3.1, copy the following files from the /SQL/schema directory to a temporary directory on the RIM host:
   - inv_db2_schema.sql
   - h_inv_db2_schema.sql
   - h_inv_db2_patch_mgmt.sql
   - plans_db2_schema.sql
   - pristine_db2_schema.sql
   - ccm_db2_schema.sql
   - mdist_db2_schema.sql
   - adi_db2_schema.sql
2. Connect to the RDBMS server:

   db2 connect to *database* user *name* using *password*

   where *database* is the name or alias of the database in the system database directory, *name* is the user name of the instance owner of the database, and *password* is the password associated with the user.
3. Run the database schema scripts to create the database and write output to the screen and to associated log files:

   db2 -f *script_name*.sql -o -t -z *log_name*.log

   where *script_name* is the name of the schema script and *log_name* is the name of the log file. Repeat this step for each schema script.
4. Test that the schema was installed.

Note: The above procedure is for a new installation. The syntax for an upgrade is the same as for the new installation.

Installing Informix Schemas

Configuring the Informix RDBMS consists of running several schema scripts as well as creating the database and the database user.

The schema scripts for installing the configuration repository are as follows:

inv_infx_schema.sql
Installs the `inv_db` repository schema, which defines its tables and views.

h_inv_infx_schema.sql
Installs the inventory history tables for the configuration repository. (This script is optional. It must be run subsequent to the inv_infx_schema.sql.)

h_inv_infx_patch_mgmt.sql
Installs the Patch Management history tables for the configuration repository.. (This script is optional. It must be run subsequent to the inv_infx_schema.sql.)

plans_infx_schema.sql
Installs the `planner` repository schema, which defines its tables and views.

pristine_infx_schema.sql
Installs the `pristine` repository schema, which defines its tables and views.

ccm_infx_schema.sql
Installs the `ccm` repository schema, which defines its tables and views.

mdist_infx_schema.sql
Installs the `mdist2` repository schema, which defines its tables and views.

adi_infx_schema.sql
Installs the `adi_db` repository schema, which defines its tables and views.

After creating the repositories in the Informix RDBMS, complete the following steps:

1. Verify that you have at least 20,000 locks in the `onconfig` file before running the schema script. This is the minimum required locks.
2. From the IBM Tivoli Configuration Manager Installation, version 4.3.1, copy the following files from the `/SQL/schema` directory to a temporary directory on the Informix server:
   - `inv_infx_schema.sql`
   - `h_inv_infx_schema.sql`
   - `h_inv_infx_patch_mgmt.sql`
   - `plans_infx_schema.sql`
   - `pristine_infx_schema.sql`
   - `ccm_infx_schema.sql`
   - `mdist_infx_schema.sql`
   - `adi_infx_schema.sql`
3. From the temporary directory on the Informix server, run the schema scripts:
   `dbaccess` *`db`*`@$`*`informix_server script_name`*`.sql >>` *`log_name`*`.log $2>$1`
   where *db* is the name of the repository, *informix_server* is the server instance, *script_name* is the name of the schema script, and *log_name* is the name of the log file. Repeat for each schema script.
4. Test that the schema was installed.

Installing Microsoft SQL Server Schemas

Configuring the Microsoft SQL Server RDBMS consists of running several schema scripts, each creating tables in the SQL Server RDBMS. The schema scripts are as follows:

inv_ms_sql_schema.sql
Installs the inv_db repository schema, which defines its tables and views.

h_inv_ms_sql_schema.sql
Installs the inventory history tables for the configuration repository. (This script is optional. It must be run subsequent to the inv_ms_sql_schema.sql.)

h_inv_ms_sql_patch_mgmt.sql
Installs the Patch Management history tables for the configuration repository. (This script is optional. It must be run subsequent to the inv_ms_sql_schema.sql.)

plans_ms_sql_schema.sql
Installs the planner repository schema, which defines its tables and views.

pristine_ms_sql_schema.sql
Installs the pristine repository schema, which defines its tables and views.

ccm_ms_sql_schema.sql
Installs the ccm repository schema, which defines its tables and views.

mdist_ms_sql_schema.sql
Installs the mdist2 repository schema, which defines its tables and views.

adi_ms_sql_schema.sql
Installs the adi_db repository schema, which defines its tables and views.

If you did not run the schema scripts during the installation, complete the following steps:

1. From the IBM Tivoli Configuration Manager Installation, version 4.3.1, copy the following files from the /SQL/schema directory to a temporary directory on the RIM host:
   - inv_ms_sql_schema.sql
   - h_inv_ms_sql_schema.sql
   - h_inv_ms_sql_patch_mgmt.sql
   - plans_ms_sql_schema.sql
   - pristine_ms_sql_schema.sql
   - ccm_ms_sql_schema.sql
   - mdist_ms_sql_schema.sql
   - adi_ms_sql_schema.sql
2. From the temporary directory on the RIM host, run the schema scripts and log the output:

   ```
   isql -U name -P password -S server_name -d databaser_name
   -i script_name.sql -o log_name.log
   ```

   where *name* is the user created when the admin scripts were run, *password* is the password for the *name* user, *server_name* is the name of the MSSQL server, *database_name* is the name of the database, *script_name* is the name of the admin script, and *log_name* is the name of the log file. Repeat this step for each admin script.
3. Change the passwords for invtiv, planner, tivoli (for ccm repository), mdstatus, and ad_user users. Use the appropriate isql command to change the user

password for the database, and use the **wsetrimpw** command to change the passwords in the RIM object. These two passwords must be the same. For information about using isql, see the Microsoft SQL Server documentation.

4. Test that the schema was installed.
5. Log out of the isql session:

   ```
   exit
   ```

Installing Oracle Schemas

Configuring the Oracle RDBMS consists of running several schema scripts, each creating required tables in the Oracle RDBMS.

Note: Oracle instant client is not supported when performing an installation using the InstallShield wizard. Oracle instant client cannot be used to run database sql scripts against the database, it can be used only to establish a RIM connection with the database.

The schema scripts are as follows:

inv_ora_schema.sql
Installs the `inv_db` repository schema, which defines its tables and views.

h_inv_ora_schema.sql
Installs the inventory history tables for the configuration repository. (This script is optional. It must be run subsequent to the inv_ora_schema.sql.)

h_inv_ora_patch_mgmt.sql
Installs the Patch Management history tables for the configuration repository. (This script is optional. It must be run subsequent to the inv_ora_schema.sql.)

plans_ora_schema.sql
Installs the `planner` repository schema, which defines its tables and views.

pristine_ora_schema.sql
Installs the `pristine` repository schema, which defines its tables and views.

ccm_ora_schema.sql
Installs the `ccm` repository schema, which defines its tables and views.

mdist_ora_schema.sql
Installs the `mdist2` repository schema, which defines its tables and views.

adi_ora_schema.sql
Installs the `adi_db` repository schema, which defines its tables and views.

If you did not run the schema scripts during the installation, complete the following steps:

1. From the IBM Tivoli Configuration Manager Installation, version 4.3.1, copy the following files from the `/SQL/schema` directory to a temporary directory on the computer system where the Oracle client is installed:
   - `inv_ora_schema.sql`
   - `h_inv_ora_schema.sql`
   - `h_inv_ora_patch_mgmt.sql`
   - `plans_ora_schema.sql`
   - `pristine_ora_schema.sql`
   - `ccm_ora_schema.sql`
   - `mdist_ora_schema.sql`

- adi_ora_schema.sql

2. Run the schema scripts associated with the Inventory components by completing the following steps:
   a. From this directory, start a SQL*Plus session:
      ```
      sqlplus invtiv/password
      ```
      where *password* is the RDBMS password set for the RDBMS user invtiv.
   b. Change the password for the user invtiv. Use the appropriate SQL*Plus command to change the password. Use the **wsetrimpw** command to notify the RIM object of this password change. For information about using SQL*Plus, see the Oracle documentation.
   c. Specify which log file to write information to:
      ```
      spool inv_ora_schema.log
      ```
   d. Run the script to install the tables and views:
      ```
      @inv_ora_schema.sql
      ```
      The script installs the tables and views. The success and failure of the SQL statements are written to the log.
   e. Specify which log file to write information to:
      ```
      spool h_inv_ora_schema.log
      ```
   f. Run the script to install the historical tables and views:
      ```
      @h_inv_ora_schema.sql
      ```
      The script installs the historical tables and views. The success and failure of the SQL statements are written to the log.
   g. Run the script to install the patch management historical tables and views:
      ```
      @h_inv_ora_patch_mgmt.sql
      ```
      The script installs the historical tables and views. The success and failure of the SQL statements are written to the log.
   h. Log out of the SQL*Plus session:
      ```
      quit
      ```
3. Run the schema scripts associated with the Activity Planner components by completing the following steps:
   a. From this directory, start a SQL*Plus session:
      ```
      sqlplus planner/password
      ```
      where *password* is the RDBMS password set for the RDBMS user planner.
   b. Change the password for the user planner. Use the appropriate SQL*Plus command to change the password. Use the **wsetrimpw** command to notify the RIM object of this password change. For information about using SQL*Plus, see the Oracle documentation.
   c. Specify which log file to write information to:
      ```
      spool plans_ora_schema.log
      ```
   d. Run the script to install the tables and views:
      ```
      @plans_ora_schema.sql
      ```
      The script installs the tables and views. The success and failure of the SQL statements are written to the log.
   e. Log out of the SQL*Plus session:

```
quit
```

4. Run the schema scripts associated with the Change Manager components by completing the following steps:
   a. From this directory, start a SQL*Plus session:
      ```
      sqlplus ccm/password
      ```
      where *password* is the RDBMS password set for the RDBMS user tivoli.
   b. Change the password for the user tivoli. Use the appropriate SQL*Plus command to change the password. Use the **wsetrimpw** command to notify the RIM object of this password change. For information about using SQL*Plus, see the Oracle documentation.
   c. Specify which log file to write information to:
      ```
      spool ccm_ora_schema.log
      ```
   d. Run the script to install the tables and views:
      ```
      @ccm_ora_schema.sql
      ```
      The script installs the tables and views. The success and failure of the SQL statements are written to the log.
   e. Log out of the SQL*Plus session:
      ```
      quit
      ```
5. Run the schema scripts associated with the Distribution Status console by completing the following steps:
   a. From this directory, start a SQL*Plus session:
      ```
      sqlplus mdstatus/password
      ```
      where *password* is the RDBMS password set for the RDBMS user mdstatus.
   b. Change the password for the user mdstatus. Use the appropriate SQL*Plus command to change the password. Use the **wsetrimpw** command to notify the RIM object of this password change. For information about using SQL*Plus, see the Oracle documentation.
   c. Specify which log file to write information to:
      ```
      spool mdist_ora_schema.log
      ```
   d. Run the script to install the tables and views:
      ```
      @mdist_ora_schema.sql
      ```
      The script installs the tables and views. The success and failure of the SQL statements are written to the log.
   e. Log out of the SQL*Plus session:
      ```
      quit
      ```
6. Run the schema scripts associated with the Pristine Manager by completing the following steps:
   a. From this directory, start a SQL*Plus session:
      ```
      sqlplus pristine/password
      ```
      where *password* is the RDBMS password set for the RDBMS user pristine.
   b. Change the password for the user pristine. Use the appropriate SQL*Plus command to change the password. Use the **wsetrimpw** command to notify the RIM object of this password change. For information about using SQL*Plus, see the Oracle documentation.
   c. Specify which log file to write information to:

```
spool pristine_ora_schema.log
```

d. Run the script to install the tables and views:

```
@pristine_ora_schema.sql
```

The script installs the tables and views. The success and failure of the SQL statements are written to the log.

e. Log out of the SQL*Plus session:

```
quit
```

7. Test that the schema was installed.
8. Run the schema scripts associated with the Query Directory for Microsoft Active Directory by completing the following steps:
   a. From this directory, start a SQL*Plus session:

```
sqlplus ad_user/password
```

where *password* is the RDBMS password set for the RDBMS user ad_user.

   b. Change the password for the user ad_user. Use the appropriate SQL*Plus command to change the password. Use the **wsetrimpw** command to notify the RIM object of this password change. For information about using SQL*Plus, see the Oracle documentation.
   c. Specify which log file to write information to:

```
spool adi_ora_schema.log
```

   d. Run the script to install the tables and views:

```
@adi_ora_schema.sql
```

The script installs the tables and views. The success and failure of the SQL statements are written to the log.

   e. Log out of the SQL*Plus session:

```
quit
```

Installing Sybase Schemas

Configuring the Sybase RDBMS consists of running several schema scripts, each creating required tables in the Sybase RDBMS. The schema scripts are as follows:

inv_syb_schema.sql
Installs the configuration repository schema, which defines its tables and views.

h_inv_syb_schema.sql
Installs the inventory history tables for the configuration repository. (This script is optional. It must be run subsequent to the inv_syb_schema.sql.)

h_inv_syb_patch_mgmt.sql
Installs the Patch Management history tables for the configuration repository. (This script is optional. It must be run subsequent to the inv_syb_schema.sql.)

plans_syb_schema.sql
Installs the `planner` repository schema, which defines its tables and views.

pristine_syb_schema.sql
Installs the `pristine` repository schema, which defines its tables and views.

ccm_syb_schema.sql
Installs the `ccm` repository schema, which defines its tables and views.

mdist_syb_schema.sql
Installs the mdist2 repository schema, which defines its tables and views.

adi_syb_schema.sql
Installs the adi_db repository schema, which defines its tables and views.

In you did not run the schema scripts during the installation, complete the following steps:

1. From the IBM Tivoli Configuration Manager Installation, version 4.3.1, copy the following files from the /SQL/schema directory to a temporary directory on the RIM host:
   - inv_syb_schema.sql
   - h_inv_syb_schema.sql
   - h_inv_syb_patch_mgmt.sql
   - plans_syb_schema.sql
   - pristine_syb_schema.sql
   - ccm_syb_schema.sql
   - mdist_syb_schema.sql
   - adi_syb_schema.sql
2. From the temporary directory on the RIM host, run the schema scripts and log the output:

   ```
   isql -U name -P password -S server_name -d database_name
   -i script_name.sql -o log_name.log
   ```

   where *name* is the user created when the admin scripts were run, *password* is the password for the *name* user, *server_name* is the name of the Sybase server, *database_name* is the name of the database, *script_name* is the name of the schema script, and *log_name* is the name of the log file. Repeat this step for each schema script.
3. Change the passwords for invtiv, planner, tivoli, mdstatus, and ad_user users. Use the appropriate isql command to change the user password for the database, and use the **wsetrimpw** command to change the passwords in the RIM object. These two passwords must be the same. For information about using isql, see the Sybase documentation.
4. Test that the schema was installed.
5. Log out of the isql session:

   ```
   exit
   ```

Upgrading Database Scripts

You can upgrade from a previous version, either:

- IBM Tivoli Configuration Manager Version 4.2.2
- IBM Tivoli Configuration Manager Version 4.2.3

If you do perform an upgrade, you will then have to upgrade the databases and upgrade the plug-ins for the components listed. Both upgrades will take the current level of the components to version 4.3.1. In the two sections below, <*database*> specifies the vendor name of the RDBMS that you are using for the repository:

- For DB2, use **db2**.
- For DB2 on z/OS, use **db2_mvs**.
- For Informix, use **Infx**.

- For Microsoft SQL Server, use **ms_sql**.
- For Oracle, use **ora**.
- For Sybase, use **syb**.

Upgrade and migration considerations

The upgrade is based on the following Tivoli Management Framework backward compatibility rules:

- Any application built with previous Tivoli Management Framework versions still works after you upgrade Tivoli Management Framework from version 3.7x to version 4.3.1.
- Any application built with Tivoli Management Framework, version 4.3.1 does not work with previous Tivoli Management Framework versions.
- A 4.3.1 Tivoli region can be interconnected to non-4.3.1 Tivoli region, starting from version 3.7x.
- Within the same Tivoli region, you can have managed nodes at Tivoli Management Framework, version 4.3.1, Tivoli Management Framework, version 41x and Tivoli Management Framework, version 37x levels.

You can migrate to IBM Tivoli Configuration Manager version 4.3.1, starting from IBM Tivoli Configuration Manager version 4.2.2 and IBM Tivoli Configuration Manager version 4.2.3. If you migrate from earlier IBM Tivoli Configuration Manager versions, you must perform additional steps to migrate from the starting release to version 4.2.3 or 4.2.2.

The upgrade can be performed using the classical procedure based on Tivoli Management Framework, the InstallShield MultiPlatform (ISMP) installation on the supported platforms, or the Tivoli Software Installation Service (SIS) on the supported platforms.

The IBM Tivoli Configuration Manager Version 4.3.1 release does not contain enhancements that require changes in the Inventory schema. The Inventory schema upgrade modifies only the schema from the starting IBM Tivoli Configuration Manager release to the latest 4.2.3 maintenance level.

To upgrade the Inventory schema, apply the same procedure used when installing a IBM Tivoli Configuration Manager fix pack.

The images of IBM Tivoli Configuration Manager Version 4.3.1 contain all the .SQL scripts released with any 4.2.2 and 4.2.3 fix pack, up to 4.2.2-TIV-TCM-FP0006. You must run a subset of these scripts depending on the database vendor and the starting IBM Tivoli Configuration Manager release or fix pack.

Upgrading From IBM Tivoli Configuration Manager version 4.2.2

If you upgrade from IBM Tivoli Configuration Manager Version 4.2.2, you must migrate the databases to version 4.3.1 and update the plug-ins. For more details about the plug-ins, see “Registering and Upgrading Plug-ins” on page 143.

Run the following steps if you want to migrate from a Tivoli Configuration Manager Version 4.2.2 to a Tivoli Configuration Manager Version 4.3.1 environment:

1. Run the scriptsh_inv_*dbvendor*_upgrade_422_423.sql and inv_*dbvendor*_upgrade_422_423.sql, where

dbvendor

Is one of the supported repositories.

2. Edit the appropriate *dbvendor*%inv%423_FP0%.sql script and search for the 422_423 string. If the string is found, follow carefully the instructions.
3. Run all %inv%423_FP0*y*.sql scripts, where *y* is the Tivoli Configuration Manager 4.2.3 fix pack level you have downloaded.

   For example, if you downloaded Tivoli Configuration Manager version 4.2.3 fix pack 6, run the following scripts:

   - *dbvendor*%423_FP01.sql
   - *dbvendor*%423_FP02.sql
   - *dbvendor*%423_FP03.sql
   - *dbvendor*%423_FP04.sql.
   - *dbvendor*%423_FP05.sql.
   - *dbvendor*%423_FP06.sql.

Upgrading From IBM Tivoli Configuration Manager version 4.2.3

If you upgrade from IBM Tivoli Configuration Manager version 4.2.3, you must migrate the databases to version 4.3.1 and update the plug-ins. For more details about the plug-ins, see "Registering and Upgrading Plug-ins" on page 143.

Run the following steps if you want to migrate from a Tivoli Configuration Manager version 4.2.3 to a Tivoli Configuration Manager version 4.3.1 environment:

1. Install IBM Tivoli Configuration Manager, version 4.3.1. All the scripts required for upgrading from your current level to version 4.3.1 are automatically installed.
2. Run all the %inv%423_FP0%.sql scripts available for your *dbvendor*, where *dbvendor* is the shortname for the database. If you have already installed and configured one or more previous fix packs, you do not need to run the related scripts again.

   For example, if you are at Tivoli Configuration Manager Version 4.2.3 fix pack 2 level, and you install IBM Tivoli Configuration Manager, version 4.3.1, run the following scripts:

   - *dbvendor*%423_FP03.sql
   - *dbvendor*%423_FP04.sql
   - *dbvendor*%423_FP05.sql
   - *dbvendor*%423_FP06.sql

   Table 21 lists the SQL scripts, released with the different fix packs, to run for updating the **Inventory schema**:

Table 21. SQL scripts for updating the **Inventory schema**

	Oracle	DB2	MSSQL	Sybase	Informix	DB2 MVS	DB2 MVS custom
inv_*db*_423_FP01.sql	X	X	X	X	X	X	X
inv_*db*_423_FP02.sql	X	X	X	X	X	X	X
inv_*db*_423_FP03.sql	X	X	X	X	X	X	X
inv_*db*_423_FP04.sql	X	X	X	X	X	X	X

Table 21. SQL scripts for updating the **Inventory schema** *(continued)*

	Oracle	DB2	MSSQL	Sybase	Informix	DB2 MVS	DB2 MVS custom
inv_*db*_423_FP05.sql	X	X	X	X	X	X	X
inv_*db*_423_FP06.sql	X	X	X	X	X	X	X

Table 22 lists the SQL scripts, released with the different fix packs, to run for updating the **Historical Inventory schema**:

Table 22. SQL scripts for updating the **Historical Inventory schema**

	Oracle	DB2	MSSQL	Sybase	Informix	DB2 MVS	DB2 MVS custom
h_inv_*db*_423_FP01.sql	X	X	X	X	X	X	X
h_inv_*db*_423_FP02.sql	X	X	X	X	X	X	X
h_inv_*db*_423_FP03.sql	X	X	X	X	X	X	X
h_inv_*db*_423_FP04.sql	X	X	X	X	X	X	X
h_inv_*db*_423_FP05.sql	X	X	X	X	X	X	X
h_inv_*db*_423_FP06.sql	X	X	X	X	X	X	X

Running Enterprise Directory Query Facility Scripts

To enable Enterprise Directory Query Facility user management, you must run the Lightweight Directory Access Protocol (LDAP) script after installing the Enterprise Directory Query Facility component. These LDAP scripts are in LDAP Data Interchange Format (LDIF). A directory server uses files in LDIF to describe a directory and directory entries in text format. LDIF is used to exchange data and synchronize data between LDAP servers. For additional information, see your LDAP documentation.

Each of the LDAP scripts extends the enterprise directory schema. These scripts are located in the `$BINDIR/TAS/DirQuery/SCRIPTS` directory on the Tivoli server. You must copy the file from the Tivoli server to the LDAP server and run the script locally so that you can run queries from the LDAP server against Enterprise Directory Query Facility.

For Microsoft Active Directory
`Adupd.ldf`

For IBM SecureWay
`IBMupd.ldf`

For Novell Directory Server
`NDSupd.ldf`

Running the Novell Directory Server Script

The `NDSUPD.ldf` file updates the NDS schema by adding a class and three attributes. This script can be used in two different ways:

- Using the command line for the import-convert-export facility (ICE) on a Netware console

  The ICE command line has a wide set of parameters to import/export a schema configuration on a Netware DS. The generic usage is the following:

```
ice general_options -S[LDIF | LDAP | DELIM | LOAD | SCH] source_options
-D[LDIF | LDAP | DELIM] destination_options
```

For example, the following command:

```
ice -l sys:\tmp\ice.out -SLDIF -f sys:\tmp\NDSUPD.ldf -v -DLDAP -v -d
cn=admin,o=my_context -w my_passwd
```

runs the NDSUPD.ldf script to update the schema on the local server using the authenticated user **admin** and logging every output on the sys:\tmp\ice.out file.

Note: Make sure the server is set to allow a simple authentication otherwise you will get a ″Strong Authentication required″ error when running the previous command. This kind of setting can be changed as follows:

1. From within NWADMIN select the LDAP group Object.
2. From the Details, General page select **Allow Clear Text Passwords**.

   This option allows the transmission of bind requests that include passwords over unencrypted connections.

- Using the nds import/export wizard in the Netware ConsoleOne interface:
  1. In ConsoleOne select **Wizard → NDS Import/Export**
  2. Click **Import LDIF File** then click **Next**.

     Type the name of the LDIF file containing the data you want to import.
  3. Click **Next**, then click **Advanced** to set other LDIF source handler options.

     Select the LDAP server where the data will be imported.
  4. Click **Next**, then click **Finish** to begin the LDIF import.

Running Common RDBMS Commands

This section provides information about common RDBMS commands, by RDBMS. These commands can be run from either the RDBMS client or server. These commands are useful while working with the RDBMS software to create and maintain databases. These commands are not comprehensive, but are those for performing basic, but necessary, operations against the database. For a complete listing of commands and additional details about the provided comments, see the RDBMS documentation.

DB2 Commands

There are several commands that are important when using the DB2 RDBMS. For additional information about these and other database commands, see the DB2 documentation. These commands are used for the following operations:

Start a DB2 interactive session

To start an interactive session, enter the follow command:

```
db2
```

Catalog the DB2 server node

To catalog the DB2 server node, enter the following command:

```
db2 catalog tcpip node db2node remote hostname server service_name
```

where *db2node* is the name of the system where the DB2 client is installed (which must be unique in your node directory list), *hostname* is the fully qualified name of the system where the DB2 server is installed, and *service_name* is the connection port name as defined in the services file.

Catalog remote DB2 databases

To catalog a remote database, enter the following command:

```
db2 catalog database db_name as alias_name at node db2node
```

where *db_name* is the name of the remote database, *alias_name* is the name of the client instance, and *db2node* is the name of the system where the DB2 client is installed.

Connect to the DB2 server

To connect to a DB2 server, enter the following command:

```
db2 connect to database user name using password
```

where *database* is the name or alias of the database in the system database directory, *name* is the user name of the instance owner of the database, and *password* is the password for the previous user.

Run scripts

To run a script, enter the following command:

```
db2 -f script_name -o -t -z log_name
```

where *script_name* is the name of the script and *log_name* is the name of the log file.

End a DB2 session

To log out of an interactive session, enter the following command:

```
quit
```

Informix Commands

There are several commands that are important when using the Informix RDBMS. For additional information about these and other database commands, see the Informix documentation.

To run a script, enter the following command:

```
dbaccess db@$informix_server script_name >> log_name $2>$1
```

where *db* is the name of the database, *informix_server* is the server instance, *script_name* is the name of the script, and *log_name* is the name of the log file.

Microsoft SQL Server Commands

There are several commands that are important when using the Microsoft SQL Server RDBMS. For additional information about these and other database commands, see the Microsoft SQL Server documentation. These commands are used to perform the following operations:

Start an isql interactive session

To start an interactive session, enter the following command:

```
isql
```

Run scripts

To run a script, enter the following command:

```
isql -U user -P password -S server_name -d database_name
-i script_name.sql -o log_name.log
```

where:

user The owner of the database. To run admin scripts, the user is the sa

user. The admin script creates the database owner for the repository. When you run the schema scripts, the user must be the database owner.

password
The password for the sa user.

server_name
The name of the MSSQL server.

database_name
The name of the database.

script_name
The name of the script.

log_name
The name of the log file.

End an isql session
To log out of an isql session, enter the following command:

```
exit
```

Oracle Commands

There are several commands that are important when using the Oracle RDBMS. For additional information about these and other database commands, see the Oracle documentation. These commands are used to perform the following operations:

Start a SQL*Plus interactive session
To start an interactive SQL*Plus session, enter the following command:

```
sqlplus system/password
```

where *password* is the RDBMS password set for the RDBMS user system.

Specify log files
To specify a log file, enter the following command:

```
spool log_file.log
```

where *log_file* is the name of the log file. You must specify a log file before running an SQL script if you want to retain log history.

Run scripts
To run a script, enter the following command:

```
@script_name.sql
```

where *script_name* is the name of the script.

End a SQL*Plus session
To log out of a SQL*Plus session, enter the following command:

```
quit
```

Sybase Commands

There are several commands that are important when using the Sybase RDBMS. For additional information about these and other database commands, see the Sybase documentation. These commands are used to perform the following operations:

Start an isql interactive session
To start an interactive session, enter the following command:

```
isql
```

Run scripts

To run a script, enter the following command:

```
isql -U user -P password -S server_name -d database_name
-i script_name.sql -o log_name.log
```

where:

user The owner of the database. To run admin scripts, the user is the sa user. The admin script creates the database owner for the repository. When you run the schema scripts, the user must be the database owner.

password
The password for the sa user.

server_name
The name of the Sybase server.

database_name
The name of the database.

script_name
The name of the script.

log_name
The name of the log file.

End an isql session

To log out of an isql session, enter the following command:

```
exit
```

Chapter 5. IBM Tivoli Configuration Manager Installation and Upgrade

This chapter describes how to install or upgrade the components of IBM Tivoli Configuration Manager using the InstallShield wizard. The InstallShield wizard allows you to perform an installation, either:

- When you do not have any existing Tivoli environment, component, or product on your system, you can use one of the following installation methods:
  - "Typical Server Installation" on page 84

    Use this option for a simple installation, when default values are used. You can also perform a silent install for typical installations. See "IBM Tivoli Configuration Manager Silent Installation" on page 112.
  - "Custom Server Installation" on page 90

    Use the custom option for a complex installation, or when you do not want to use the default values. You will have to define the parameters used in the installation.
- When you have an existing Tivoli environment, and want to install IBM Tivoli Configuration Manager, or upgrade IBM Tivoli Configuration Manager to the latest version. Use the "Server Upgrade" on page 104.

This chapter also describes how to install IBM Tivoli Configuration Manager using the silent installation method (see "IBM Tivoli Configuration Manager Silent Installation" on page 112), and how to uninstall IBM Tivoli Configuration Manager (see "IBM Tivoli Configuration Manager Uninstall" on page 113).

Using the InstallShield wizard, you can:

- Create a new Tivoli management region server (Tivoli server) and install the appropriate IBM Tivoli Configuration Manager components.
- Install the appropriate IBM Tivoli Configuration Manager components on an existing Tivoli management region server (Tivoli server).
- Upgrade IBM Tivoli Configuration Manager from Version 4.2.2 or 4.2.3 to version 4.3.1.

Note: You can also install IBM Tivoli Configuration Manager components using the following methods:

- Using Tivoli Software Installation Service, where you select which products to install on which machines. See "Installing and Upgrading Using Tivoli Software Installation Service" on page 139.

  Note: The InstallShield wizard does not recognize any installation that has been performed using Tivoli Software Installation Service.
- Using the Tivoli desktop, where you select which product and patches to install on which machine. See "Installing and Upgrading Using the Tivoli Desktop" on page 140.
- Using **winstall** and **wpatch** commands provided by Tivoli Management Framework, where you specify which products and patches to install on which machine. See "Installing and Upgrading Using the Command Line" on page 140.

- Using Tivoli Management Framework to manually install the components provided by IBM Tivoli Configuration Manager. See “Installation Sequence Using Tivoli Management Framework Mechanisms” on page 137.
- Using Software Distribution to install components of IBM Tivoli Configuration Manager that are delivered as SPBs (see “Installing and Upgrading Using Software Distribution” on page 141).

To help you determine your installation mechanism as well as know what is required during the installation depending on installation mechanism, use the information in “Which Server Installation?.”

Which Server Installation?

Complete the following worksheet to help you select the type of installation for the server components of IBM Tivoli Configuration Manager.

1. For which type of Tivoli environment are you creating the Tivoli server?

   __ Simple—An environment for device management or other simple configurations, a testing or demonstration environment, or a training environment. Use the installation program provided by IBM Tivoli Configuration Manager (see “Server Installation” on page 84).

   __ Complex—An environment managing hundreds to thousands of endpoints. Use either:

   – The installation program provided by IBM Tivoli Configuration Manager (see “Server Installation” on page 84).

   – The installation mechanisms provided by Tivoli Management Framework or Tivoli Software Installation Service (see Appendix A, “Installation Mechanisms Provided by Tivoli Management Framework,” on page 137).

2. Install and configure the RDBMS software that you are going to use.

   Depending on the RDBMS, you will need to perform additional configuration for the installation program to complete successfully. For details, see Chapter 4, “Working With Repositories and Queries,” on page 51.

   Did you complete the additional RDBMS configuration?

   __ Yes

   __ No

   If you selected No, review the specific requirements in one of the following sections:

   - “Creating DB2 table spaces” on page 53, which discusses requirements for databases, users, and passwords
   - “Creating Informix table spaces” on page 54, which discusses requirements for databases, users, and passwords
   - “Creating Microsoft SQL Server table spaces” on page 55, which discusses directory and file space requirements.
   - “Creating Oracle table spaces” on page 56, which discusses database requirements.
   - “Creating Sybase table spaces” on page 57, which discusses directory, file space, and device requirements.

3. Which components and services do you want to install?
   - __ Activity Planner
   - __ Change Manager
   - __ Enterprise Directory Query Facility
   - __ Inventory
   - __ Patch Management
   - __ Pristine Manager
   - __ Resource Manager
   - __ Software Distribution
   - __ Web Interface
   - __ Query Directory for Microsoft Active Directory
   - __ Query Directory for Microsoft Active Directory - Command Line
   - __ Tivoli Provisioning Manager for Operating System Deployment integration
   - __ CM Extension for Tivoli License Manager
   - __ CM Endpoint Extension

   If you selected all of these components and services and plan to have a simple environment, use the provided installation program and install through the **Typical** option.

   If you selected some of these components and services and plan to have a simple environment, use the provided installation program and install through the **Custom** option.
4. Which installation mechanism do you plan to use?
   - __ Typical option of provided installation program

     For the typical option, go to “Typical Server Installation” on page 84.
   - __ Custom option of provided installation program

     For the custom option, go to “Custom Server Installation” on page 90.
   - __ For the upgrade option, go to “Server Upgrade” on page 104.
   - __ Tivoli Management Framework

     For Tivoli Management Framework, go to “Installation Sequence Using Tivoli Management Framework Mechanisms” on page 137.

Components Installed

The following components can be installed, configured, or created:

- Tivoli Management Framework

  To support a single server installation, a Tivoli gateway is also created on this machine. Tivoli Management Framework installation also includes:

  - Distribution Status console

    The Distribution Status console tracks software distributions and other profile distributions.

    The installation of the Distribution Status console creates the `mdist2` RIM object.

    The installation of the Distribution Status console requires the following Java components that are provided by Tivoli Management Framework:
  - Java 1.4.2 for Tivoli
  - Java RDBMS Interface Module
  - Java Client Framework for Tivoli
  - Java Help 1.0

  These Java components are used by several of the other IBM Tivoli Configuration Manager components that are installed during a typical or custom installation.
- Web Interface
- Activity Planner

  This installation creates the `planner` RIM object.
- Change Manager

  This installation creates the `ccm` RIM object.
- Inventory and Inventory Gateway

  The installation of the Inventory component creates the `inv_query` and `invdh_1` RIM objects. These RIM objects should *not* be on the Tivoli server. Use the **wmvrim** command (as documented in *Tivoli Management Framework Reference Manual*) to move them to another managed node after you have installed this managed node. The installation of the Inventory component also installs the Scalable Collection Service. This collects inventory scan results and all results for the Web Gateway component.
- Resource Manager and Resource Manager Gateway
- Software Distribution and Software Distribution Gateway
- Software Package Editor
- Enterprise Directory Query Facility
- Pristine Manager
- Pristine Manager Gateway
- Patch Management
- Query Directory for Microsoft Active Directory
- CM Extension for Tivoli License Manager
- Tivoli Provisioning Manager for Operating System Deployment integration

The installation of Tivoli Management Framework creates the Tivoli server.

The typical and custom installations create a gateway with a TCP/IP 9494 port. The gateway created is named <*hostname*>-gw. All RIM objects are created on the Tivoli server. To move a RIM object to another managed node, use the **wmvrim** command as documented in *Tivoli Management Framework Reference Manual*.

Note: During a typical installation, English language support is installed. If you select a different language to be used for the installation with the InstallShield wizard, support for this additional language is also installed. For language support in other locales, you might need to install the other locales after the installation has finished.

Component Prerequisites

The component prerequisites listed in Table 23 must be installed before starting the installation.

Table 23. Server Component Prerequisites

This component...	Is on this CD...	Requires this prerequisite software to be installed ...	Which is on this CD ...
Activity Planner	IBM Tivoli Configuration Manager Server, version 4.3.1	Tivoli Management Framework, version 4.3.1	Tivoli Management Framework CD 1 of 2, version 4.3.1
		Java Client Framework for Tivoli, version 4.3.1	Tivoli Management Framework CD 2 of 2, version 4.3.1
		Java 1.4.2 for Tivoli	Tivoli Management Framework CD 2 of 2, version 4.3.1
		Java RDBMS Interface Module, version 4.3.1	Tivoli Management Framework CD 2 of 2, version 4.3.1
		One of the supported databases (DB2, Informix, Microsoft SQL Server, Oracle, or Sybase)	Not provided with the IBM Tivoli Configuration Manager CDs
Change Manager	IBM Tivoli Configuration Manager Server, version 4.3.1	Tivoli Management Framework, version 4.3.1	Tivoli Management Framework CD 1 of 2, version 4.3.1
		Java Client Framework for Tivoli, version 4.3.1	Tivoli Management Framework CD 2 of 2, version 4.3.1
		Java 1.4.2 for Tivoli	Tivoli Management Framework CD 2 of 2, version 4.3.1
		Java RDBMS Interface Module, version 4.3.1	Tivoli Management Framework CD 2 of 2, version 4.3.1
		Activity Planner, version 4.3.1	IBM Tivoli Configuration Manager Server, version 4.3.1
		One of the supported databases (DB2, Informix, Microsoft SQL Server, Oracle, or Sybase)	Not provided with the IBM Tivoli Configuration Manager CDs

Table 23. Server Component Prerequisites (continued)

This component...	Is on this CD...	Requires this prerequisite software to be installed ...	Which is on this CD ...
Enterprise Directory Query Facility	IBM Tivoli Configuration Manager Server, version 4.3.1	Tivoli Management Framework, version 4.3.1	Tivoli Management Framework CD 1 of 2, version 4.3.1
		Java 1.4.2 for Tivoli	Tivoli Management Framework CD 2 of 2, version 4.3.1
		Resource Manager, for resource management of users	IBM Tivoli Configuration Manager Server, version 4.3.1
		An installed and configured LDAP directory server. For a list of supported LDAP directory servers, see *IBM Tivoli Configuration Manager Release Notes*.	Not provided with the IBM Tivoli Configuration Manager CDs
Inventory and Inventory Gateway	IBM Tivoli Configuration Manager Server, version 4.3.1	Tivoli Management Framework, version 4.3.1	Tivoli Management Framework CD 1 of 2, version 4.3.1
		Scalable Collection Service, version 4.3.1	IBM Tivoli Configuration Manager Server, version 4.3.1
		Java 1.4.2 for Tivoli	Tivoli Management Framework CD 2 of 2, version 4.3.1
		Java Client Framework for Tivoli, version 4.3.1	Tivoli Management Framework CD 2 of 2, version 4.3.1
		One of the supported databases (DB2, Informix, Microsoft SQL Server, Oracle, or Sybase)	Not provided with the IBM Tivoli Configuration Manager CDs

Table 23. Server Component Prerequisites (continued)

This component...	Is on this CD...	Requires this prerequisite software to be installed ...	Which is on this CD ...
Patch Management	IBM Tivoli Configuration Manager Server, version 4.3.1	Tivoli Management Framework, version 4.3.1	Tivoli Management Framework CD 1 of 2, version 4.3.1
		Java Client Framework for Tivoli, version 4.3.1	Tivoli Management Framework CD 2 of 2, version 4.3.1
		Java 1.4.2 for Tivoli	Tivoli Management Framework CD 2 of 2, version 4.3.1
		Java RDBMS Interface Module, version 4.3.1	Tivoli Management Framework CD 2 of 2, version 4.3.1
		Activity Planner, version 4.3.1	IBM Tivoli Configuration Manager Server, version 4.3.1
		Software Distribution, version 4.3.1	IBM Tivoli Configuration Manager Server, version 4.3.1
Pristine Manager and Pristine Manager Gateway	IBM Tivoli Configuration Manager Server, version 4.3.1	Tivoli Management Framework, version 4.3.1	Tivoli Management Framework CD 1 of 2, version 4.3.1
		One of the supported databases (DB2, Informix, Microsoft SQL Server, Oracle, or Sybase)	Not provided with the IBM Tivoli Configuration Manager CDs
Software Distribution and Software Distribution Gateway	IBM Tivoli Configuration Manager Server, version 4.3.1	Tivoli Management Framework, version 4.3.1	Tivoli Management Framework CD 1 of 2, version 4.3.1
		Inventory, version 4.3.1 Software Distribution requires that the Inventory, version 4.3.1 component must be installed on the Tivoli management region.	IBM Tivoli Configuration Manager Server, version 4.3.1

Table 23. Server Component Prerequisites (continued)

This component...	Is on this CD...	Requires this prerequisite software to be installed ...	Which is on this CD ...
Software Package Editor	IBM Tivoli Configuration Manager Server, version 4.3.1	Tivoli Management Framework, version 4.3.1	Tivoli Management Framework CD 1 of 2, version 4.3.1
		Java 1.4.2 for Tivoli	Tivoli Management Framework CD 2 of 2, version 4.3.1
		Software Distribution, version 4.3.1	IBM Tivoli Configuration Manager Server, version 4.3.1
Tivoli Management Framework	Tivoli Management Framework CD 1 of 2, version 4.3.1	None	None
Web Interface	IBM Tivoli Configuration Manager Server, version 4.3.1	Tivoli Management Framework, version 4.3.1	Tivoli Management Framework CD 1 of 2, version 4.3.1
Query Directory for Microsoft Active Directory	IBM Tivoli Configuration Manager Server, version 4.3.1	Tivoli Management Framework, version 4.3.1	Tivoli Management Framework CD 1 of 2, version 4.3.1
		Java 1.4.2 for Tivoli	Tivoli Management Framework CD 2 of 2, version 4.3.1
CM Extension for Tivoli License Manager	IBM Tivoli Configuration Manager Server, version 4.3.1	Tivoli Management Framework, version 4.3.1	Tivoli Management Framework CD 1 of 2, version 4.3.1
		Software Distribution, version 4.3.1	IBM Tivoli Configuration Manager Server, version 4.3.1
Provisioning Manager for Operating System Deployment	IBM Tivoli Configuration Manager Server, version 4.3.1	Tivoli Management Framework, version 4.3.1	Tivoli Management Framework CD 1 of 2, version 4.3.1
		Activity Planner, version 4.3.1	IBM Tivoli Configuration Manager Server, version 4.3.1

Note: For more information on the components, refer to “Installation Options” on page 33.

Starting the InstallShield Wizard

Before starting the InstallShield wizard, read the information about the installation you are planning to perform. The InstallShield wizard requires 120 MB of available disk space in the `/tmp` directory.

The Server InstallShield wizard programs are located in the `root` directory of the IBM Tivoli Configuration Manager Installation, version 4.3.1.

The general procedure for starting the installation programs is as follows:

On UNIX systems

From the IBM Tivoli Configuration Manager Installation, version 4.3.1 CD use the following procedure:

- Change to the `root` directory containing the installation program.
- Enter:

  `./`*`file`*`.bin`

  where *file* is the name of the file that starts the installation program. For each supported UNIX operating system, there is a different installation program:

  AIX setup_aix.bin

  HP-UX
  setup_hpux.bin

  Linux on zSeries
  setup_linux_390.bin

  Linux on x86
  setup_linux_intel.bin

  Solaris SPARC
  setup_solaris.bin

Note: The InstallShield Wizard is not supported on the following UNIX operating systems:

- Sun Solaris Operating Environment on x86, version 10
- Linux® on iSeries / pSeries

If you do not have the required 120 MB of available disk space in the temporary directory (normally `/tmp` on most UNIX, or `/var/tmp` on Solaris) and you want to use another directory, use the following procedure:

- Change to the directory containing the installation program.
- Enter:

  `./`*`file`*`.bin -is:tempdir `*`directory`*

  where *file* is the name of the file that starts the InstallShield wizard, and *directory* is a directory which has sufficient disk space.

On Windows systems

From the IBM Tivoli Configuration Manager Installation, version 4.3.1, run the `setup.exe` file.

If you do not have the required 120 MB of available disk space and you want to use another directory on another disk, use the following procedure:

- Change to the directory containing the installation program.
- Enter:

  `setup.exe -is:tempdir `*`directory`*

  where *directory* is the disk drive and directory which has sufficient disk space..

Server Installation

The Server InstallShield wizard installs Tivoli Management Framework, which creates the Tivoli server and installs components of IBM Tivoli Configuration Manager.

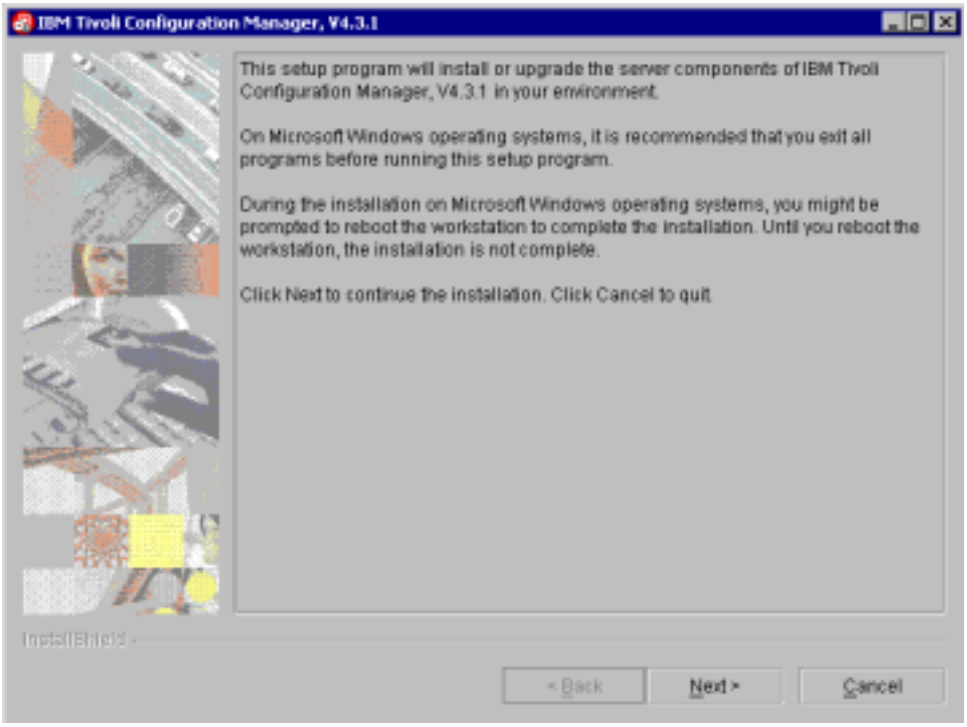


Figure 9. Server installation program window

This installation program can be used on all platforms supported as a Tivoli server. For details about which platforms are supported as a Tivoli server, see *Tivoli Management Framework Release Notes*.

This section describes the three types of installation:

- "Typical Server Installation"
- "Custom Server Installation" on page 90
- "Server Upgrade" on page 104

Note: If running a database with multiple instances that requires the login to specify @instance_name, you should perform a Custom server installation rather than the Typical server installation.

Typical Server Installation

Use the following procedure to install IBM Tivoli Configuration Manager using the typical installation method:

1. Insert the IBM Tivoli Configuration Manager Installation, version 4.3.1 in the CD-ROM drive. Start the installation (see "Starting the InstallShield Wizard" on page 82).

   The InstallShield wizard starts.

2. Select the language in which you want the wizard to be displayed, and click **OK**. English and the language selected are installed. For language support in other locales, you might need to install them after the installation has finished.
3. Read the welcome information. Note that on supported Windows platforms, you will be required to perform a reboot during the installation. Click **Next**. The License Agreement window is displayed.
4. Read the license agreement, select the acceptance radio button, and click **Next**.

   The Discovering Installed Software window is briefly displayed while IBM Tivoli Configuration Manager checks for already installed IBM Tivoli Configuration Manager software.The Destination directory window is then displayed.

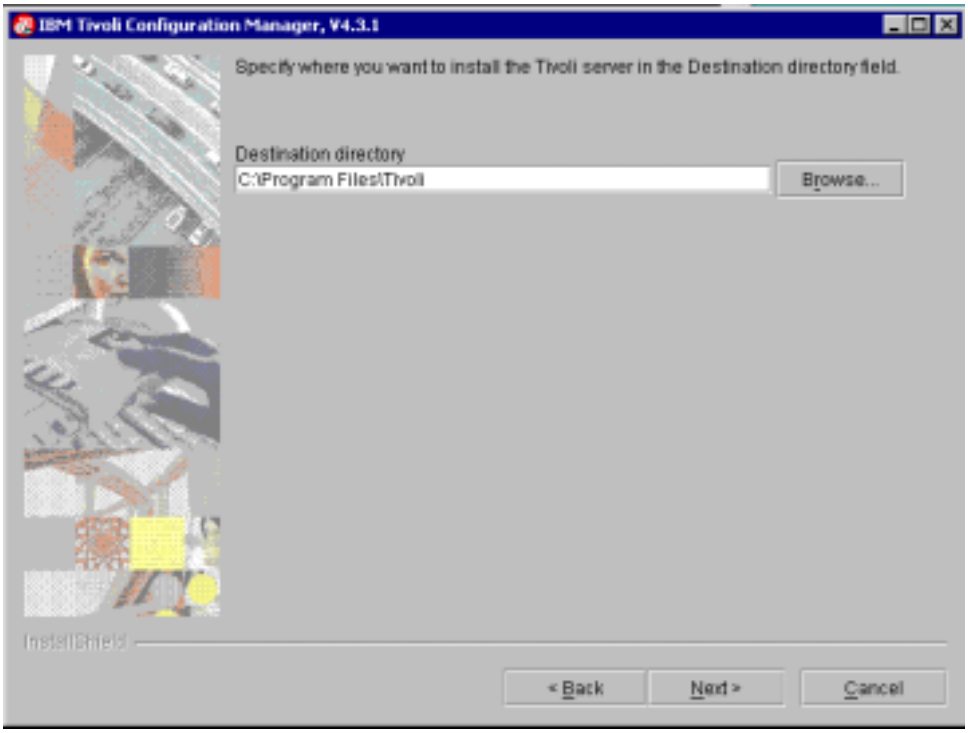


Figure 10. Destination Directory Window

5. Click **Browse** to install the Tivoli Server in a different directory, or **Next** to accept the default installation directory.

   The Select Installation window is then displayed.

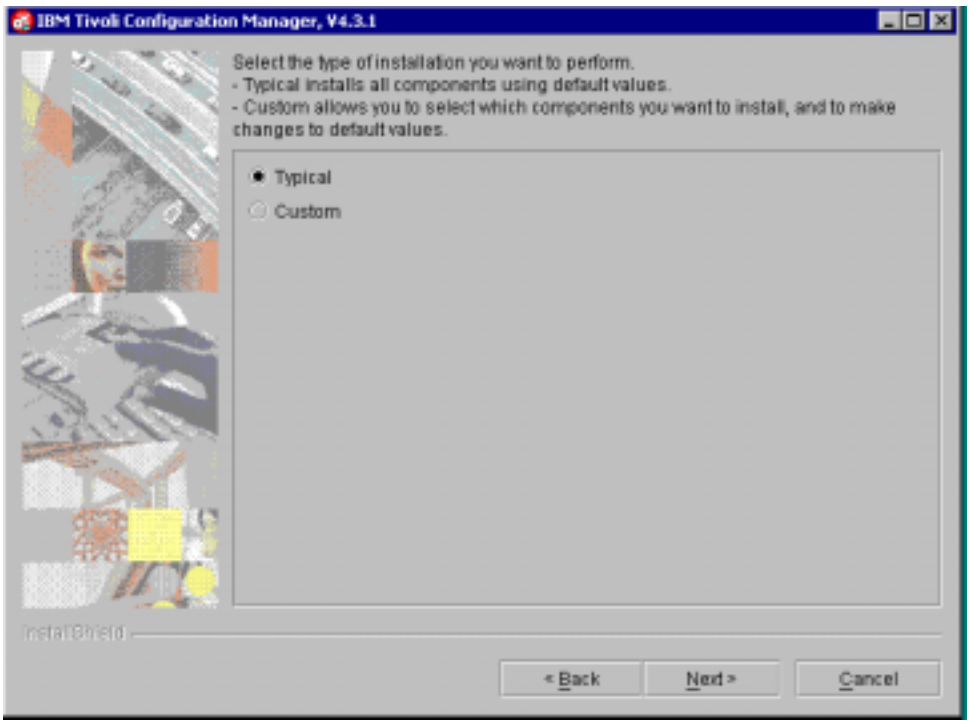


Figure 11. Select Installation Window

6. Click the **Typical** radio button, and click **Next**.

   IBM Tivoli Configuration Manager performs an analysis of your environment. When the analysis is complete, the Repository Configuration window is displayed.

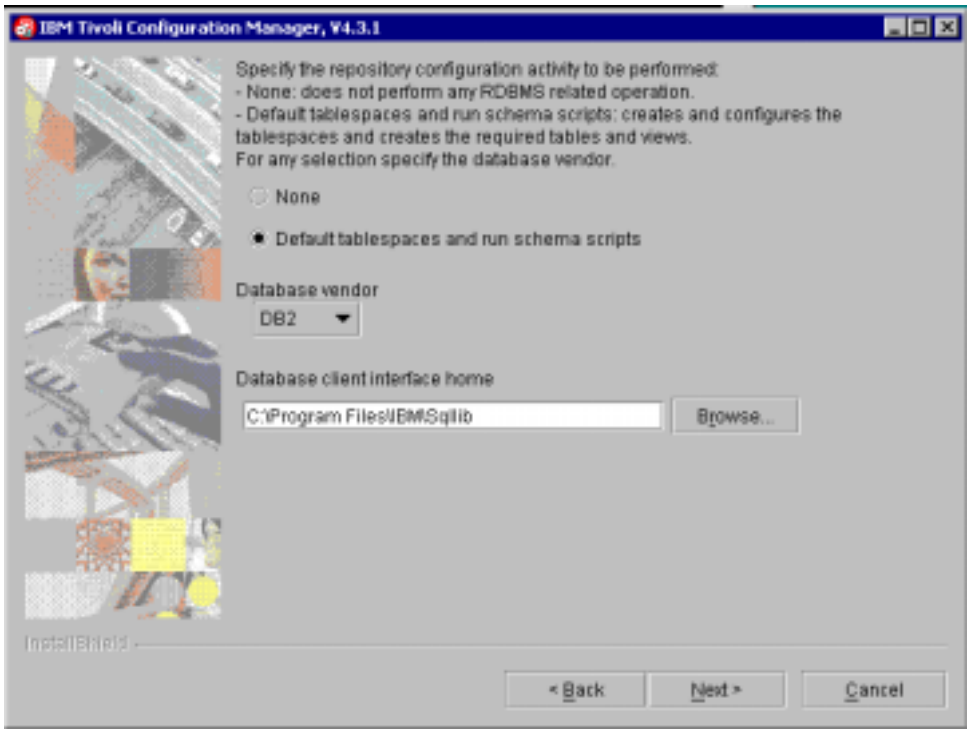


Figure 12. Repository Configuration Window — Typical Installation

7. Provide the following information:
   - The type of configuration:
     – **None**

       This creates the RIM object, but does not perform any database configuration. The following steps will not be performed
       - The admin scripts to create the users and table spaces. See “Running the Admin Scripts” on page 51 for information on how to manually run admin scripts.
       - The schema scripts. See “Running the Schema Scripts” on page 58 for information on how to manually run schema scripts.
       - The registration of the plug-ins. See “Registering and Upgrading Plug-ins” on page 143 for information on how to manually register plug-ins.

       If you select **None** and at the end of the installation, any of the planner, pristine, ccm, or inventory RIM objects are not working, you need to manually perform the steps in “Completing a Server Installation” on page 125.
     – **Default table spaces and run schema scripts**

       This creates the RIM object and configures the database. A local RDBMS client with a working connection must exist.
   - The database vendor

     Select one of the following:
     – DB2
     – Sybase
     – Informix
     – Oracle
     – Microsoft SQL

     Note: If you select Microsoft SQL, you must configure the ODBC driver before you start the installation. See “Creating Microsoft SQL Server table spaces” on page 55 for more information.

     For all database vendors, the database used is named cm_db. If you are running DB2, the cm_db database must exist before you continue with the installation. If you select Informix, **None** is automatically selected for the configuration option, and the Database client interface home field is not available. You provide all the information required in the Typical RDBMS and RIM Configuration window.
   - Database client interface home.

     The directory where the commands used by the RDBMS client are located.

   Click **Next**. The Typical RDBMS and RIM Configuration window is displayed.

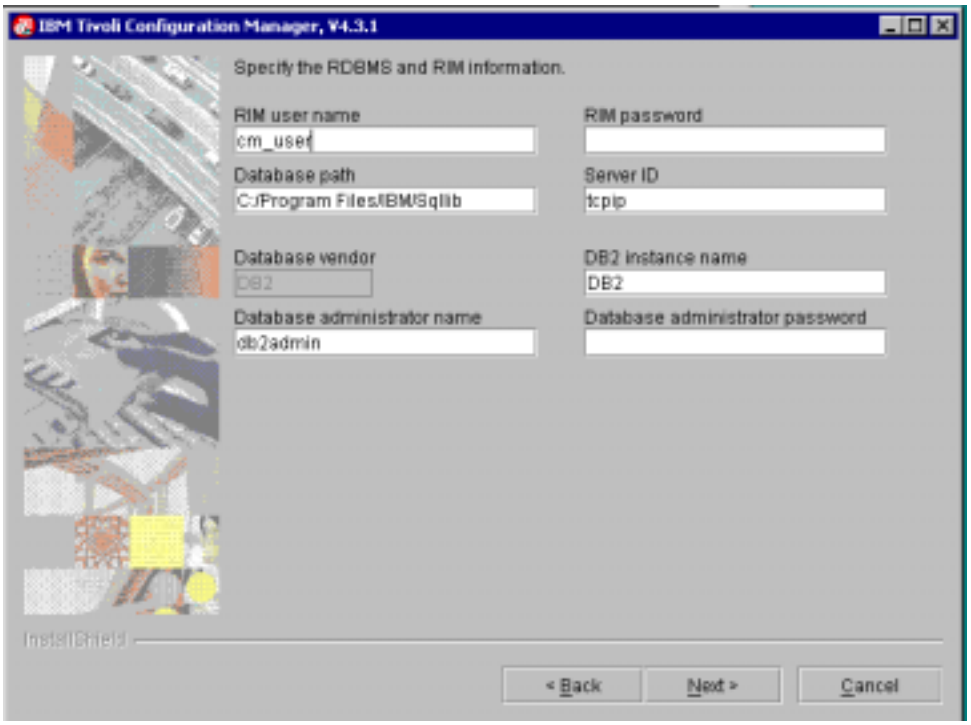


Figure 13. Typical RDBMS and RIM Configuration window

8. Fill in the following information:
   - Database path

     The directory on the RIM host where the RDBMS software is installed. Maps to the Database home option.
   - Server ID

     Specifies the vendor-specific information that enables the RDBMS to connect to the RIM host.
     - For DB2, use **tcpip**.
     - For Informix, use the value of the INFORMIXDIR variable.
     - For Microsoft SQL Server, use the host name of the machine where Microsoft SQL Server is installed.
     - For Oracle, use the value of the TWO_TASK variable that is located in the `tnsnames.ora` file in the `$ORACLE_HOME/network/admin` directory.
     - For Sybase, use the value of the DSQUERY variable in the `interfaces` file.
   - DB2 instance name

     Maps to the Instance name (DB2 only) option, otherwise this is not available.
   - RIM user name

     Maps to the User name option.
   - RIM password

     The password associated with the specified RIM user
   - Database administrator name

     Only available if you have selected the Default table spaces and run schema scripts radio button on Figure 12 on page 86.
   - Database administrator password

Only available if you have selected the Default table spaces and run schema scripts radio button on Figure 12 on page 86.

Notes:

a. The typical installation creates the cm_db database and assigns the RIM user name and passwords, that you provided in the RDBMS and RIM Configuration window (Figure 13 on page 88), to the RIM objects used by the following six components:
   - "Activity Planner" on page 34
   - "Change Manager" on page 36
   - "Inventory" on page 39
   - Distribution Status Console. See the Tivoli Enterprise Installation Guide for more information.
   - "Pristine Manager" on page 41
   - "Query Directory for Microsoft Active Directory" on page 45

b. The typical installation does not create the cm_db database for DB2 or Informix.

9. Click **Next**.

   IBM Tivoli Configuration Manager analyses your environment. When the analysis is complete, a window shows the installation operations that will be performed.

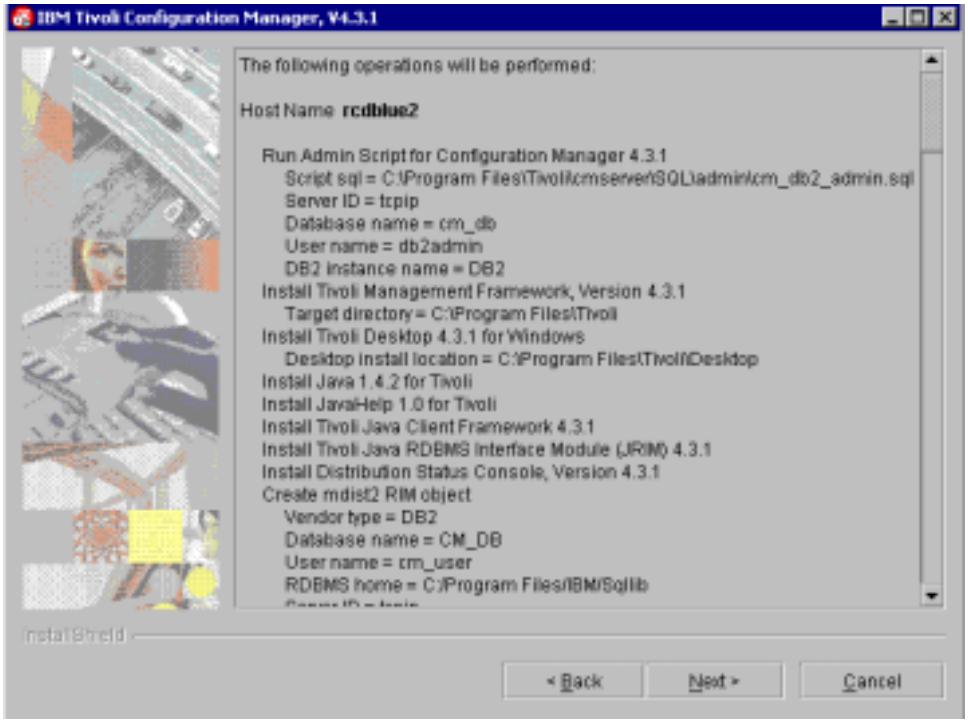


Figure 14. Installation operations window

10. Review the installation operations and settings, then click **Next**. The installation starts, and a window indicates the overall progress of the installation.

    Note: If the installation cannot find required installation images, you are prompted with a Locate the Installation Image window where you

specify the location of the required installation image. The window prompts you to do one of the following:

- Insert an installation CD and navigate to the CD drive containing the CD
- If you are installing from a local copy of the CD image, navigate to the directory containing the copy of the image.

Locate the image and click **Open** to continue the installation.

On Windows, complete the following steps. On UNIX, go to step 14.

11. When this portion of the installation completes on Windows, the Select When to Restart to Complete the Installation window is displayed.
12. Click **Now** and then click **Finish** to reboot the system.
13. After the system reboots, and the InstallShield wizard restarts, select the installation language again, and click **OK** to continue the installation.
14. When the installation completes, an Installation Summary window is displayed.

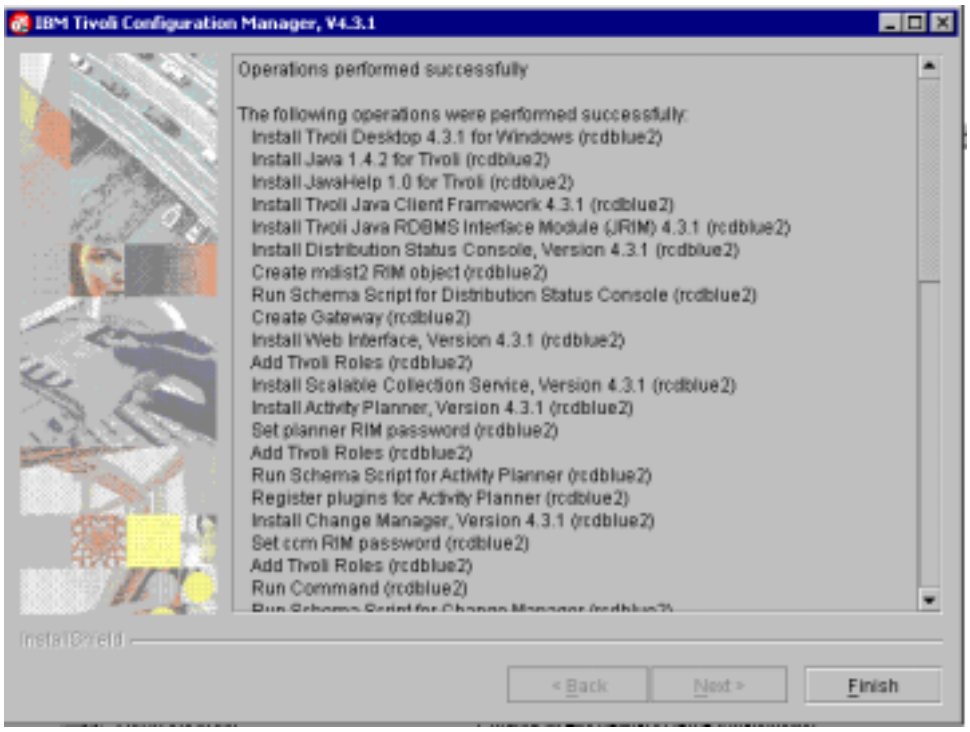


Figure 15. Installation Summary window

This window shows a successful installation or contains a list of which items failed to install and the reasons for those failures.

15. Click **Finish** to close the InstallShield wizard. If you want to further check that the installation has correctly installed the components you selected, refer to “Verifying an Installation” on page 135.

Custom Server Installation

Use the following procedure to install IBM Tivoli Configuration Manager using the custom installation method:

1. Insert the IBM Tivoli Configuration Manager Installation, version 4.3.1 in the CD-ROM drive. Start the installation (see “Starting the InstallShield Wizard” on page 82).
2. Select the language in which you want the wizard to be displayed, and click **OK**.
3. Read the welcome information and click **Next**.
4. Read the license agreement, select the acceptance radio button, and click **Next**.

   If a Tivoli management region server is not installed, the Destination Directory window (Figure 10 on page 85) is displayed. Either click **Browse** to install the Tivoli Server in a different directory, or **Next** to accept the default installation directory.

   The Select Installation window (Figure 11 on page 86) is then displayed.
5. Click the **Custom** radio button.

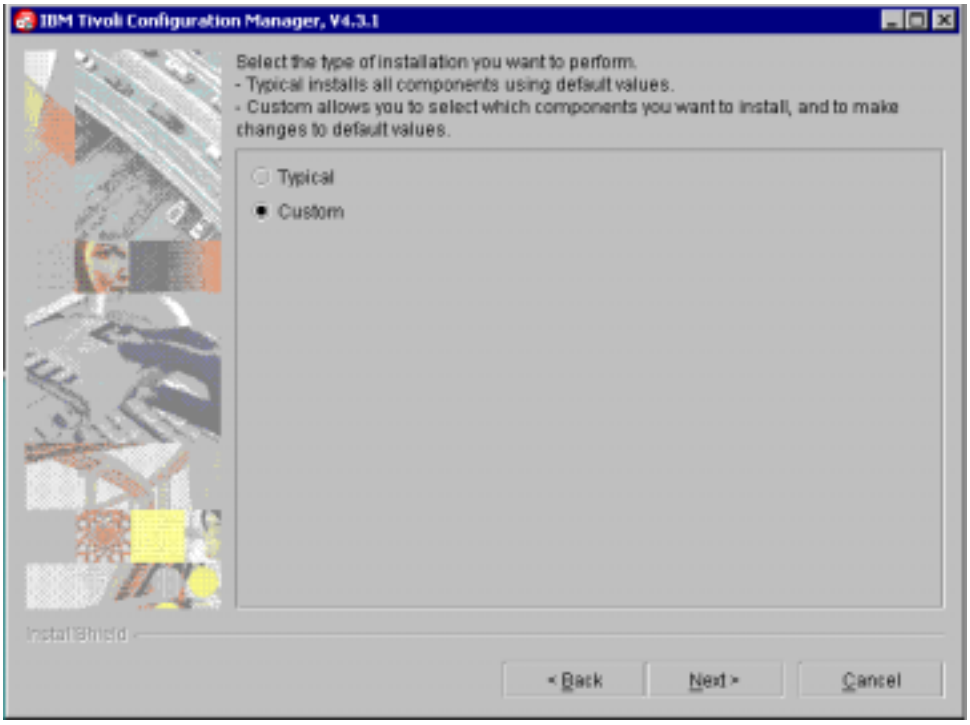


Figure 16. Custom server installation Window

   For information about the components, see “Components Installed” on page 77.
6. Click **Next**.

   The Install Components window is displayed.

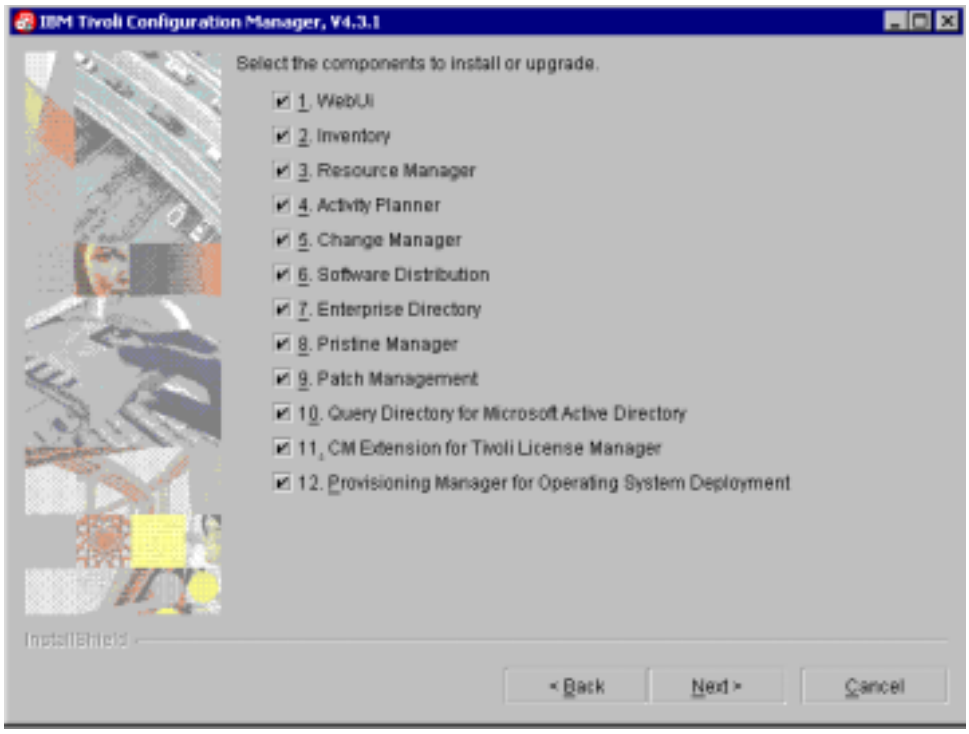


Figure 17. Install Components Window

For information about the components, see “Components Installed” on page 77.

7. Select the components to be deployed in the Tivoli server, then click **Next**. The Install Additional Languages window is displayed.

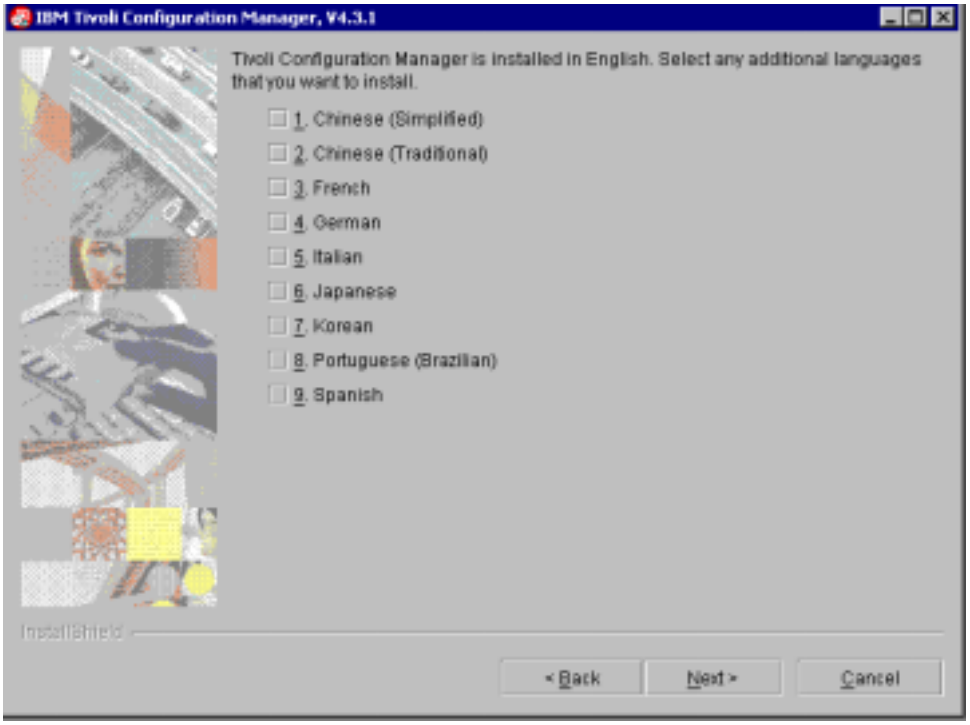


Figure 18. Install Additional Languages Window

Note: Uninstall the Japanese language pack for version 4.2.1, if present, before installing the Japanese language pack.

8. Select the additional languages to install and click **Next**.

   IBM Tivoli Configuration Manager performs an initial analysis of your environment. When the analysis is complete the Repository Configuration window is displayed.

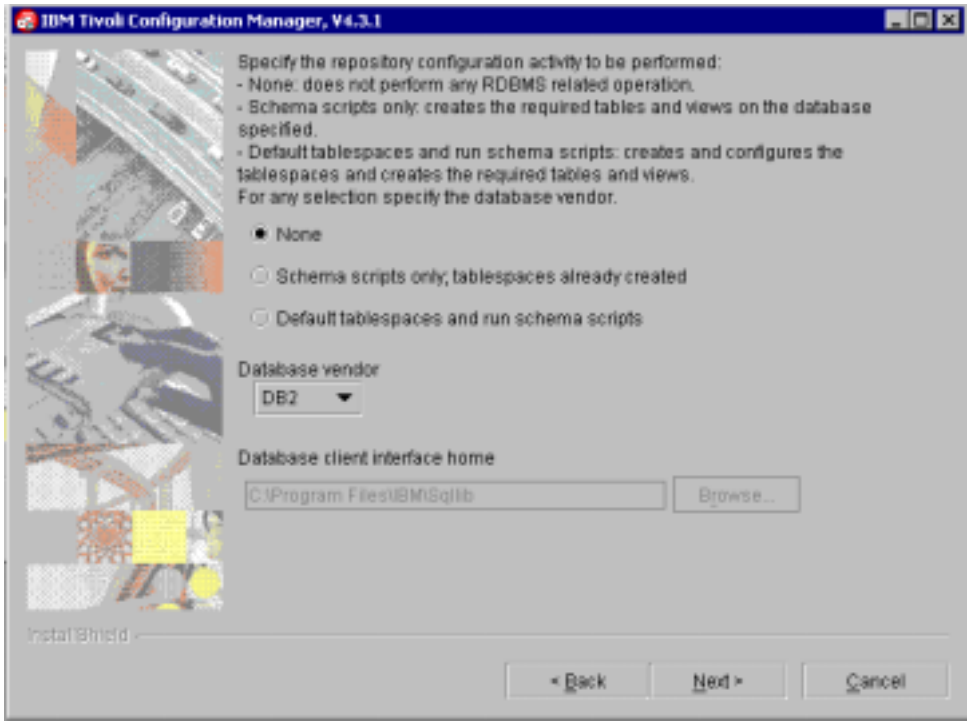


Figure 19. Repository Configuration Window — Custom Installation

9. Provide the following information:
   - The type of configuration:
     – **None**

       This creates the RIM object, but does not perform any database configuration. The following steps will not be performed
       - The admin scripts to create the users and table spaces. See "Running the Admin Scripts" on page 51 for information on how to manually run admin scripts.
       - The schema scripts. See "Running the Schema Scripts" on page 58 for information on how to manually run schema scripts.
       - The registration of the plug-ins. See "Registering and Upgrading Plug-ins" on page 143 for information on how to manually register plug-ins.

       If you select **None** and at the end of the installation, any of the planner, pristine, ccm, or inventory RIM objects are not working, you need to manually perform the steps in "Completing a Server Installation" on page 125.
     – **Schema scripts only; table spaces already created**

       Select this option if the table spaces have been created in the database. Running schema scripts creates the tables and views in the allocated table spaces. A local RDBMS client with a working connection must exist.
     – **Default table spaces and run schema scripts**

       This creates the RIM object and configures the database. A local RDBMS client with a working connection must exist.
   - The database vendor.

     Select one of the following:
     – DB2

- Sybase
- Informix
- Oracle
- Microsoft SQL

Note: If you select Microsoft SQL, you must configure the ODBC driver before you start the installation. See “Creating Microsoft SQL Server table spaces” on page 55 for more information.

If you select Informix, **None** is automatically selected for the configuration option, and the Database client interface home field is not available. You provide all the information required in the Typical RDBMS and RIM Configuration window.

- Database client interface home. The directory where the commands used by the RDBMS client are located

Click **Next**. The Custom RDBMS and RIM Configuration window is displayed. This window is shown for each IBM Tivoli Configuration Manager component that needs a RIM, so if you selected to install all IBM Tivoli Configuration Manager components, this window is displayed five times (once for each component). Each time the window is displayed for a IBM Tivoli Configuration Manager component, the default values are different to reflect that the RIM is different.

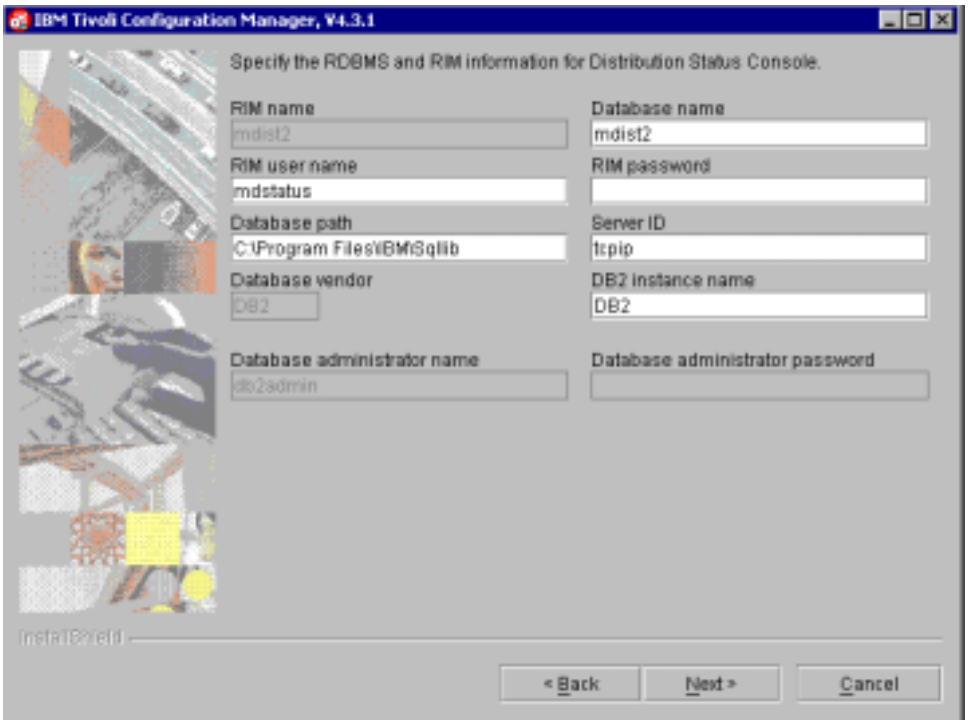


Figure 20. Custom RDBMS and RIM Configuration Window

When the installation has completed, you can check the creation of the RIM objects as described in “Verify RIM object creation” on page 135.

10. Fill in the following information (see the tables showing the “Installation Options” on page 33 for the five database components):
    - Database name

Maps to the Database ID option. If you are using DB2, the DB2 database must exist before you continue with the next step.

- RIM user name

  Maps to the User name option
- RIM password

  The password associated with the specified RIM user
- Database path

  The directory on the RIM host where the RDBMS software is installed. Maps to the Database home option
- Server ID

  Specifies the vendor-specific information that enables the RDBMS to connect to the RIM host.
  - For DB2, use **tcpip**.
  - For Informix, use the value of the INFORMIXDIR variable.
  - For Microsoft SQL Server, use the host name of the machine where Microsoft SQL Server is installed.
  - For Oracle, use the value of the TWO_TASK variable that is located in the `tnsnames.ora` file in the `$ORACLE_HOME/network/admin` directory.
  - For Sybase, use the value of the DSQUERY variable in the `interfaces` file.
- Database vendor
- DB2 instance name

  Maps to the Instance name (DB2 only) option, otherwise this is not available.
- Database administrator name

  Only available if you have selected the Default table spaces and run schema scripts radio button on the Figure 12 on page 86.
- Database administrator password

  Only available if you have selected the Default table spaces and run schema scripts radio button on the Figure 12 on page 86.

11. Click **Next**.

    If you are installing the Activity Planner or the Enterprise Directory Query Facility component, you must supply further information:

    - Activity Planner requires a username and password

      Note: You cannot use the root username on UNIX or the Administrator username on Windows

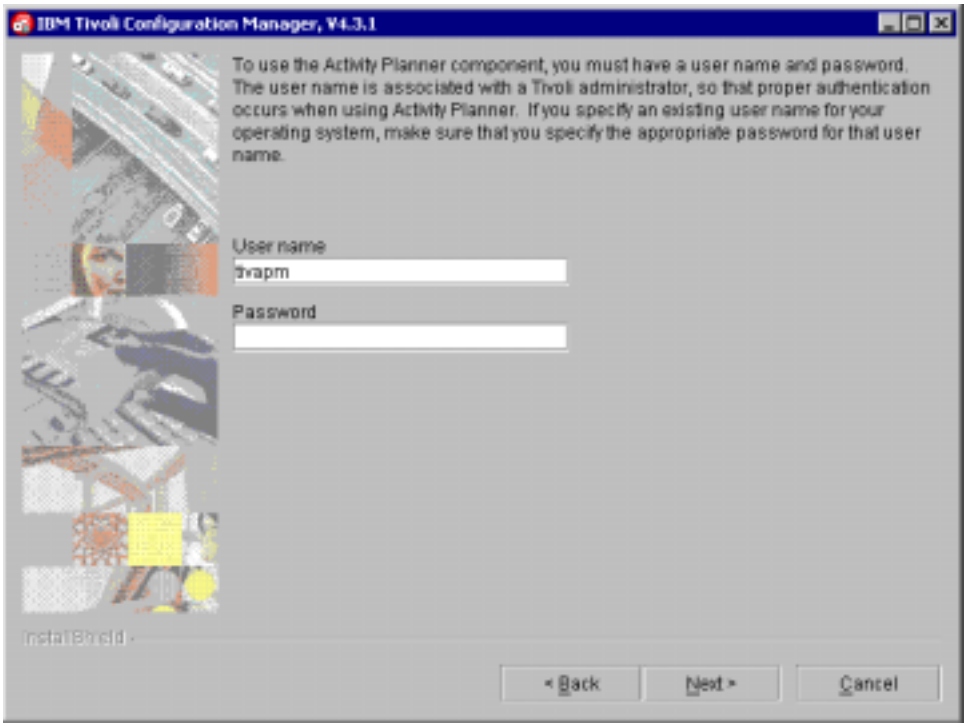


Figure 21. Activity Planner Configuration Window

Click **Next**.

- If you are installing Patch Management, you must configure some options. Specify the following information:
  - Managed node

    Specify the managed node where the WUA and qchain.exe files have been downloaded. You have three options:
    - Select **Do not specify a managed node** if you do not want to import software packages for distributing WUA and qchain.exe files.
    - Select one of the existing managed nodes that are listed in the window.
    - Select **New managed node**, then type in the name of the managed node.
  - Directory

    Type the path of the directory where the WUA and qchain.exe files are located.

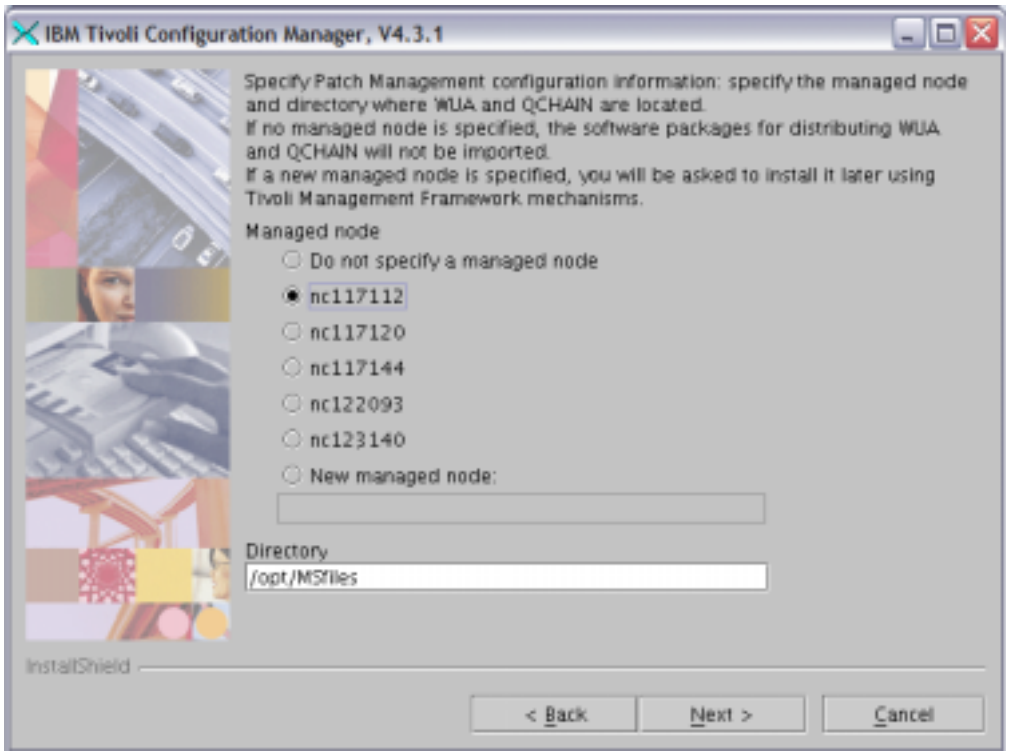


Figure 22. Patch Management Configuration Information Window

Click **Next**.

- Specify on which managed node the IBM Tivoli Configuration Manager Automation Server is, or will be, installed. You have three options:
  - Select **Do not specify a managed node** if you do not want the IBM Tivoli Configuration Manager Automation Server to be configured with IBM Tivoli Configuration Manager components.
  - Select one of the existing Windows 2003 managed nodes that are listed in the window. In Figure 23 on page 99 one managed node is listed, named Aciotti.
  - Select **New managed node**, then type in the name of the managed node when the server is to be installed.

Note: The InstallShield wizard does not install the IBM Tivoli Configuration Manager Automation Server. For more information about the IBM Tivoli Configuration Manager Automation Server, see the *IBM Tivoli Configuration Manager Patch Management Guide*.

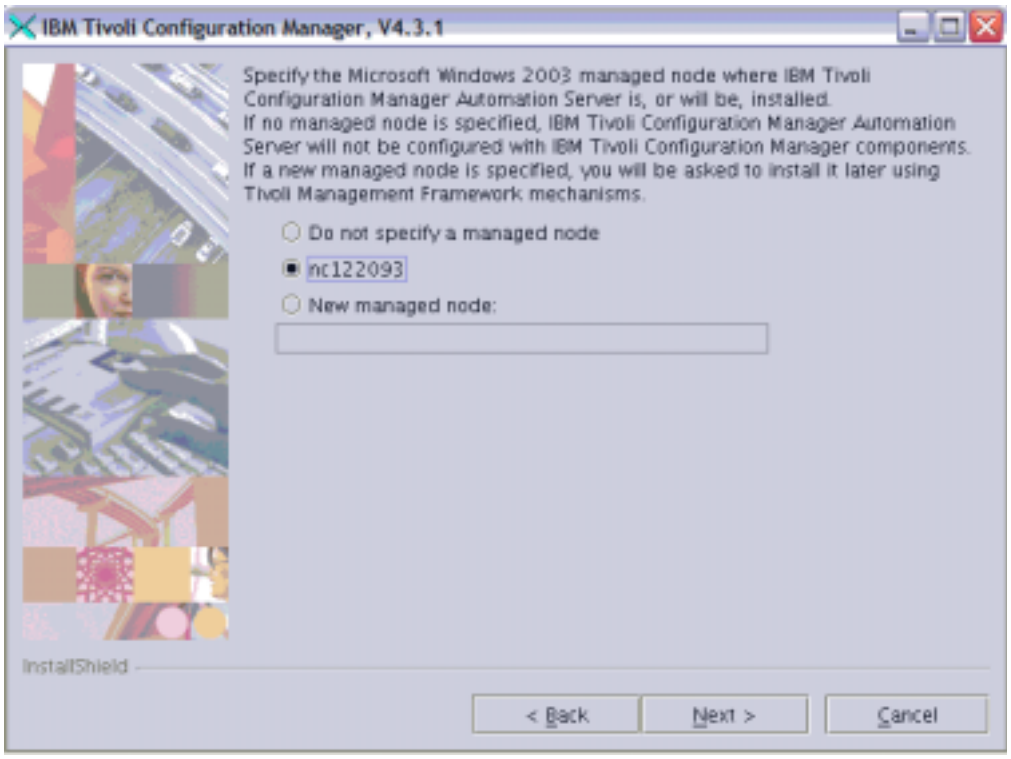


Figure 23. Patch Management Managed Node Installation Window

Click **Next**.

- Enterprise Directory Query Facility requires you to select whether an LDAP is to be configured:

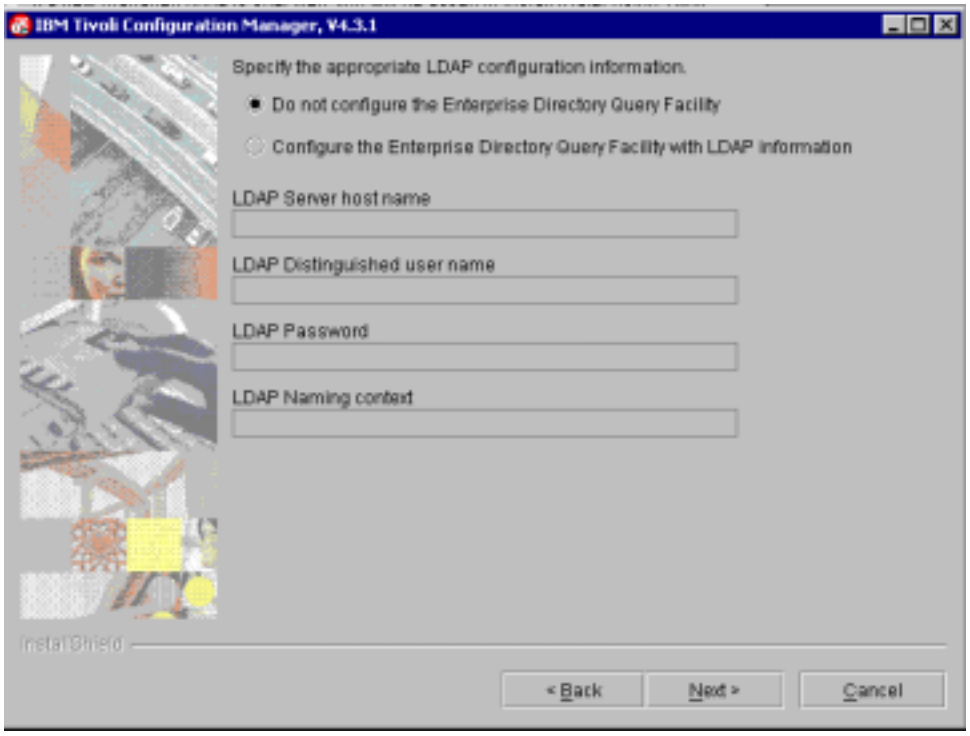


Figure 24. Enterprise Directory Query Facility Configuration Window

a. Select either:

   __ **Do not configure Enterprise Directory Query Facility**

   __ **Configure the Enterprise Directory Query Facility with LDAP information**

b. If you select **Configure the Enterprise Directory Query Facility with LDAP information**, provide the following information in the appropriate fields:

   – LDAP server host name

   – LDAP distinguished user name

     The distinguished name of the user with LDAP Administrator privileges

   – LDAP password

     The password for the specified distinguished user

   – LDAP naming context

     The naming context in the enterprise directory tree level used to retrieve information with a query

c. Click **Next**.

Ensure that the password you specify does not contain a special character at the end.

IBM Tivoli Configuration Manager analyses your environment. When the analysis is complete, a window shows the installation operations that will be performed.

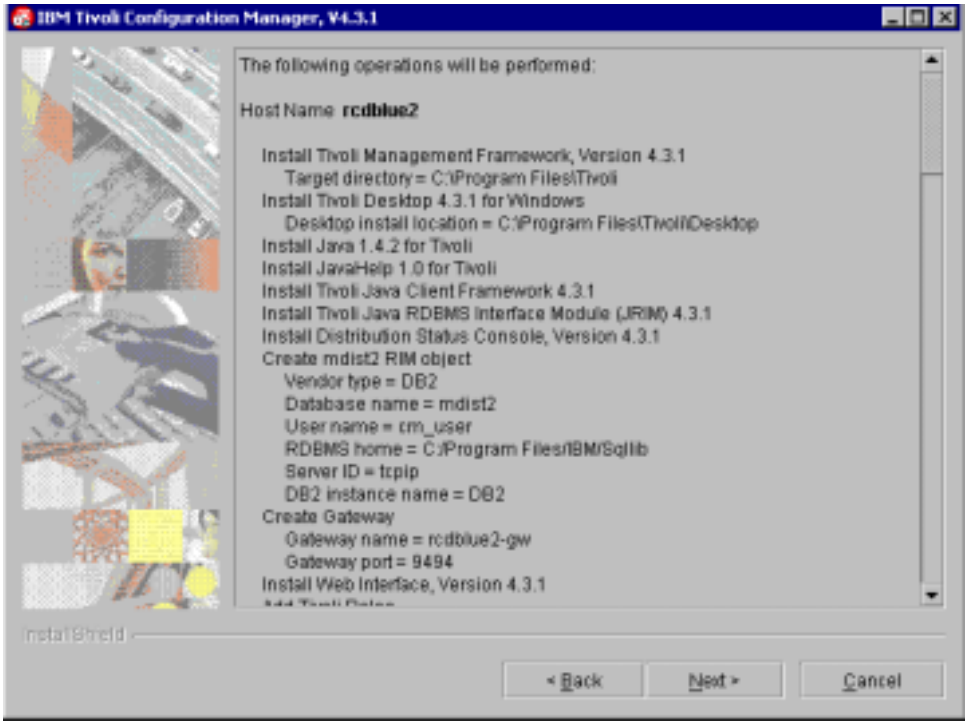


Figure 25. Installation options window

Click **Next**. The Depot window is displayed.

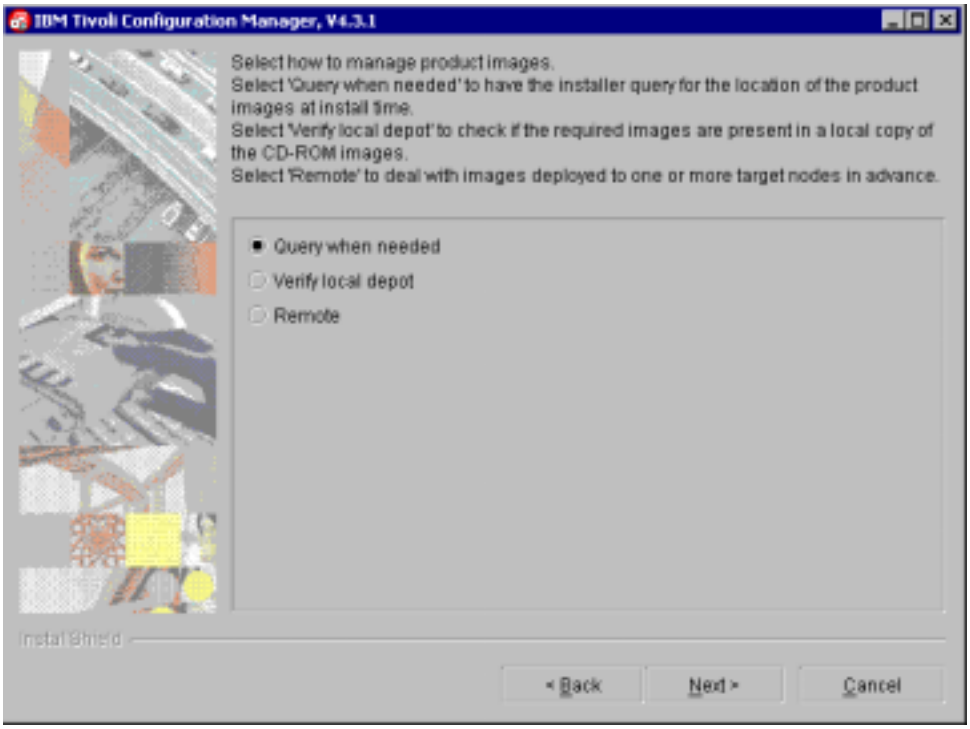


Figure 26. Depot Window

There are three options:

- Query when needed

The InstallShield wizard will query for the location of product images when it needs them. You will have to observe the installation process and respond to the prompts. This is the default setting.

- Verify local depot

  The InstallShield wizard prompts for the top directory to where the installation images have been copied. The InstallShield wizard then searches all subdirectories of the specified directory, to verify that all images are present in the location you specified. If an image is not found, the InstallShield wizard will query for the location of the missing product image. Later, you are able to perform the installation unattended.

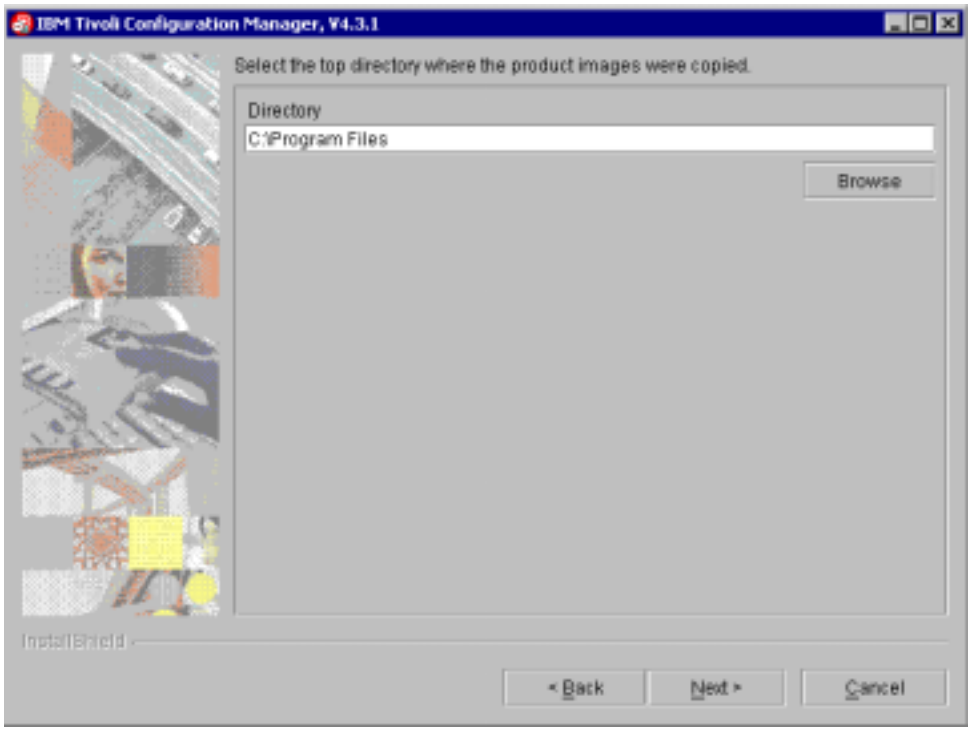


Figure 27. Installation images directory window

- Remote

  Use this option if images are deployed on a managed node before you start the installation. Two sample files, `indexmap.XML`, and `nodesmap.XML` are included on the IBM Tivoli Configuration Manager Server, version 4.3.1 CD. The files have to be copied from the /CONFIG directory to the path <*install_directory*>/cmserver, where *install_directory* is the directory in which IBM Tivoli Configuration Manager, version 4.3.1 is installed. You have to customize the two files as follows:

  – `nodesmap.XML`

    This contains the source nodes where the installation images are located. For each source node listed, there is a list of target nodes which will obtain the installation images from that source node.

  – `indexmap.XML`

    For each source node listed in the `nodesmap.XML` file, this contains the source node directory path for each index filename of the components

that will be installed on the target nodes. The source node directory path for each index file consists of the <*nodeprefix*> concatenated with the <*indexpath*> entry.

This installation allows you to copy the installation images from the Tivoli server to a server local to where the images will be installed. From this server, the images can be installed to target workstations by issuing only the install command from the Tivoli server.

12. Review the installation settings and click **Next**. The Step List window is displayed.

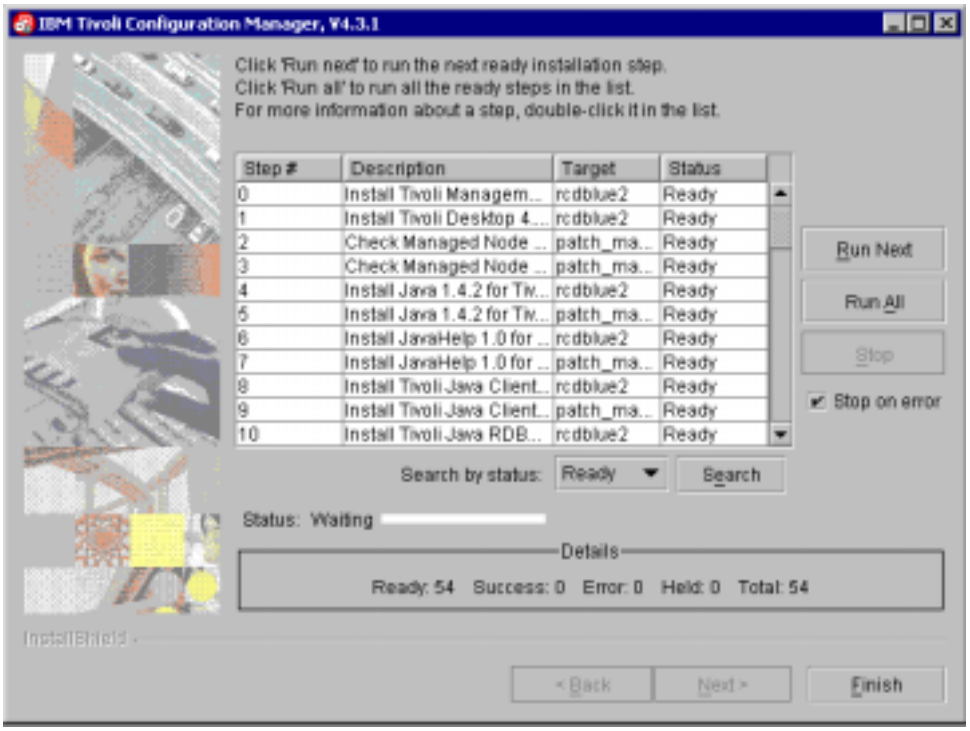


Figure 28. Step List Window

From the Step List window you can change some values, for example the gateway port, the gateway name. Change the status value to **Held** for those steps you do not want to run, for example, if you do not want to register the plug-in for Change Manager because you have not configured the RIM object, or if you want to suspend an installation.

13. Click **Run next** to start the next step in the list with a status set to Ready. Click **Run all** to run all steps in the list with a status set to Ready.

Note: If the installation cannot find required installation images, you are prompted with a Locate Images window where you specify the location of the required installation image. If this window is displayed, locate the image and click **OK** to continue the installation.

For more information about this window, or if any of the steps are not in the Success state after the installation, refer to “Using the Step List” on page 127.

Note: If you click **Stop**, the stop command will not be performed until the currently running step has completed.

On Windows, complete the following steps. On UNIX, go to step 17 on page 104.

14. On Windows, installation of Tivoli Management Framework may require a reboot. If a reboot is required, a window is displayed warning you that a reboot is necessary. Click **Next**, then, on the following window **Select When to Reboot to Complete the Installation** is displayed.
15. Click **Now** and then click **Finish** to reboot the system.
16. After the system reboots, and the InstallShield wizard restarts, select the installation language again, and click **OK** to continue the installation.
17. When all steps are in the Success state, the installation has completed. Click **Finish** to close the InstallShield wizard.
18. If you want to create the Tivoli region managed nodes and endpoints, refer to Appendix A, "Installation Mechanisms Provided by Tivoli Management Framework," on page 137. If you want to further check that the installation has correctly installed the components you selected, refer to "Verifying an Installation" on page 135.

Server Upgrade

If a Tivoli environment exists on the machine where you want to install IBM Tivoli Configuration Manager, the server upgrade program will install or upgrade your IBM Tivoli Configuration Manager components to the current level. The installation program cannot create the databases unless the RDBMS software is installed and configured on this system.

When upgrading the environment you can choose between a series of upgrade sequences, depending on your needs.

If you plan on upgrading the whole Tivoli Management Framework environment before the IBM Tivoli Configuration Manager environment, you can apply the following sequence:

1. Tivoli Management Framework servers
2. Tivoli Management Framework gateways
3. Tivoli Management Framework endpoints
4. IBM Tivoli Configuration Manager gateways
5. IBM Tivoli Configuration Manager servers

If you plan on upgrading the Tivoli Management Framework environment at the same time as the IBM Tivoli Configuration Manager environment, you can apply the following sequence:

1. Tivoli Management Framework servers
2. Tivoli Management Framework gateways
3. IBM Tivoli Configuration Manager gateways
4. Tivoli Management Framework endpoints
5. IBM Tivoli Configuration Manager servers

If you plan on upgrading the Tivoli Management Framework environment at the same time as the IBM Tivoli Configuration Manager environment while maintaining a mixed environment for a certain amount of time, perform the steps listed below. This procedure is especially effective in large environments.

1. Upgrade the Tivoli Management Framework servers.
2. Upgrade the Tivoli Management Framework gateways.
3. Upgrade the IBM Tivoli Configuration Manager gateways.

4. On the Tivoli server, run the wlevlmeth script with the -a option for the upgraded gateways. The script enables the gateway to download back-level Inventory methods to the upgraded endpoints. This procedure allows the upgraded endpoints to communicate with the Configuration Manager server. The wlevlmeth script is located in the /utils folder on CD 5.
5. Upgrade a subset of the Tivoli Management Framework endpoints connected to the upgraded gateways. You can keep the remaining endpoints at the previous level.
6. Upgrade the Inventory and Software Distribution gateways on the remaining managed nodes and gateways.
7. Upgrade all endpoints to version 4.3.1.
8. Upgrade the IBM Tivoli Configuration Manager servers.
9. On the Tivoli server, run the wlevlmeth script with the -r option for the upgraded gateways. The script prevents the gateway from downloading back-level Inventory methods to the upgraded endpoints.

Use the information in Table 24 to know which components will be upgraded. Java Client Framework defines a managed node where any version of Java Client Framework is installed.

Table 24. Managed Resource State after an Upgrade

	Tivoli server	**Managed node**	**Gateway**	**Java Client Framework**
Tivoli Management Framework [1]	Upgraded	Upgraded		
Java 1.4.2 for Tivoli	Installed	Installed[2]		Installed
Java Help 1.0 for Tivoli	Installed	Installed[2]		Installed
Java Client Framework for Tivoli	Installed	Installed[2]		Installed
Java RDBMS Interface Module	Installed			Installed
Activity Planner	Installed or upgraded	Installed[2]. Upgraded when Version 4.2.2 or Version 4.2.3 is detected.		Upgraded
Change Manager	Installed or upgraded	Upgraded when Version 4.2.2 or Version 4.2.3 is detected.		Upgraded
Distribution Status console	Installed or upgraded			Upgraded
Enterprise Directory Query Facility	Installed or upgraded			
Inventory	Installed or upgraded	Upgraded when Inventory, Version 4.2.2 or Version 4.2.3, is detected		

Table 24. Managed Resource State after an Upgrade (continued)

	Tivoli server	**Managed node**	**Gateway**	**Java Client Framework**
Inventory Gateway			Installed or upgraded	
Patch Management	Installed or upgraded	Installed	Upgraded if Patch Management, version 4.2.3 is detected	
Pristine Manager	Installed or upgraded			
Pristine Manager Gateway			Installed or upgraded	
Resource Manager	Installed or upgraded			
Resource Manager Gateway			Installed or upgraded	
Scalable Collection Service	Installed	Installed		
Software Distribution	Installed or upgraded	Installed[2]. Upgraded when Version 4.2.2 or Version 4.2.3 is detected.		
Software Distribution Gateway			Installed or upgraded	
Software Package Editor	Installed or upgraded	Upgraded when Version 4.2.2 or Version 4.2.3 is detected.		Upgraded
Web Interface	Installed or upgraded			
Query Directory for Microsoft Active Directory	Installed or upgraded	Upgraded when Query Directory for Microsoft Active Directory, version 4.2.3 is detected		
Query Directory for Microsoft Active Directory - Command Line Interface	Installed or upgraded	Upgraded whenQuery Directory for Microsoft Active Directory - Command Line, version 4.2.3 is detected		

Table 24. Managed Resource State after an Upgrade (continued)

	Tivoli server	**Managed node**	**Gateway**	**Java Client Framework**
Tivoli Provisioning Manager for Operating System Deployment integration	Installed or upgraded	Upgraded when Tivoli Provisioning Manager for Operating System Deployment integration, version 4.2.3 is detected		
CM Extension for Tivoli License Manager	Installed or upgraded	Upgraded when CM Extension for Tivoli License Manager, version 4.2.3 is detected		
CM Endpoint Extension	Installed or upgraded	Upgraded when CM Endpoint Extension , version 4.2.3 is detected		

Notes:

1. Tivoli Management Framework is always upgraded if a version older than Version 4.3.1 is found.
2. Only on the managed node that is defined as the IBM Tivoli Configuration Manager Automation Server

Use the following procedure to upgrade IBM Tivoli Configuration Manager using the InstallShield wizard:

1. Insert the IBM Tivoli Configuration Manager Installation, version 4.3.1 in the CD-ROM drive. Start the installation (see "Starting the InstallShield Wizard" on page 82).
2. Select the language in which you want the wizard to be displayed, and click **OK**.
3. Read the welcome information and click **Next**.

   The Resume Installation window (Figure 29 on page 128) is displayed if a previous uncompleted installation is detected.

   Choose to either:

   - Resume installation

     Displays the step list (Figure 28 on page 103). This lets you continue the previous installation. In this case, continue with step 13 on page 103 of the Custom Server Installation procedure.

   - Continue installation flow

     Displays the License Agreement window for you to start a new installation. In this case, continue with step 4 of this procedure.
4. Read the license agreement, select the acceptance radio button, and click **Next**.

The Discovering Installed Software window is displayed while IBM Tivoli Configuration Manager checks for already installed Tivoli Management Framework software.

If a version of Tivoli Management Framework is found that is older than Version 4.3.1, a window is displayed informing you that the discovered software must be upgraded to meet the prerequisites. Click **Next** to accept the upgrade.

The Select Managed Nodes window is displayed when there is a Tivoli management region Server and at least one managed node.

5. If there are multiple nodes in the environment, you can choose on which node the upgrade will be performed. If you do not want to perform the upgrade on a managed node, deselect it in the list. The Tivoli server cannot be deselected.

   Click **Next**. The Install Components window is displayed (Figure 17 on page 92).

6. Select the components to upgrade or install and click **Next**.

   If you select a component that has not been previously installed, the windows relevant to that component are displayed.

   The Install Additional Languages window is displayed (Figure 18 on page 93).

7. Select the additional languages to install and click **Next**.

   IBM Tivoli Configuration Manager performs an initial analysis of your environment. When the analysis is complete, the Repository Configuration window is displayed (Figure 19 on page 94) if the repository needs to be installed.

8. If required, provide the following information:
   - The type of configuration:
     - **None**

       This creates the RIM object, but does not perform any database configuration. The following steps will not be performed
       - The admin scripts to create the users and table spaces. See "Running the Admin Scripts" on page 51 for information on how to manually run admin scripts.
       - The schema scripts. See "Running the Schema Scripts" on page 58 for information on how to manually run schema scripts.
       - The registration of the plug-ins. See "Registering and Upgrading Plug-ins" on page 143 for information on how to manually register plug-ins.

       If you select **None** and at the end of the installation, any of the planner, pristine, ccm, or inventory RIM objects are not working, you need to manually perform the steps in "Completing a Server Installation" on page 125.
     - **Schema scripts only; table spaces already created**

       Select this option if the table spaces have been created in the database. Running schema scripts creates the tables and views in the allocated table spaces. A local RDBMS client with a working connection must exist.
     - **Default table spaces and run schema scripts**

       This creates the RIM object and configures the database. A local RDBMS client with a working connection must exist.
   - The database vendor.

Note: If you select Microsoft SQL, you must configure the ODBC driver before you start the upgrade. See "Creating Microsoft SQL Server table spaces" on page 55 for more information.

- Database client interface home. The directory where the commands used by the RDBMS client are located

Click **Next**. The Custom RDBMS and RIM Configuration window is displayed (similar to Figure 20 on page 95) if the RDBMS needs to be configured. This window is shown only for applications that need a fresh install and not for applications already installed, or for those that will be upgraded. Any RDBMS that requires an upgrade must be configured manually, before the InstallShield wizard upgrade has completed. See Chapter 4, "Working With Repositories and Queries," on page 51.

9. If required, fill in the following information:
   - Database name

     Maps to the Database ID option
   - RIM user name

     Maps to the User name option
   - RIM password

     The password associated with the specified RIM user
   - Database path

     The directory on the RIM host where the RDBMS software is installed. Maps to the Database home option
   - Server ID

     Specifies the vendor-specific information that enables the RDBMS to connect to the RIM host.
     - For DB2, use **tcpip**.
     - For Informix, use the value of the INFORMIXDIR variable.
     - For Microsoft SQL Server, use the host name of the machine where Microsoft SQL Server is installed.
     - For Oracle, use the value of the TWO_TASK variable that is located in the `tnsnames.ora` file in the `$ORACLE_HOME/network/admin` directory.
     - For Sybase, use the value of the DSQUERY variable in the `interfaces` file.
   - Database vendor
   - DB2 instance name

     Maps to the Instance name (DB2 only) option, otherwise this is not available.
   - Database administrator name

     Only available if you have selected the Default table spaces and run schema scripts radio button on the Figure 12 on page 86.
   - Database administrator password

     Only available if you have selected the Default table spaces and run schema scripts radio button on the Figure 12 on page 86.
10. Click **Next**.

    If you do not have Activity Planner or Enterprise Directory Query Facility installed before you start the upgrade, and you selected them during the installation, you must now configure the components. The Configuration windows for Activity Planner (Figure 21 on page 97) or Enterprise Directory Query Facility (Figure 24 on page 100) are displayed if the component needs

to be configured. If you have a previous version of Activity Planner or Enterprise Directory Query Facility installed before you start the upgrade, the existing configuration settings are retained, so you do not need to configure these components. In this case, the Configuration windows for Activity Planner or Enterprise Directory Query Facility are not displayed.

If you upgrade Activity Planner, the existing `apm.ini` file is renamed to `apm.ini.ori`. If you customized the `apm.ini` file before the upgrade, you can copy the customization from the `apm.ini.ori` file to the new upgraded `apm.ini` file.

IBM Tivoli Configuration Manager then analyses your environment. When the analysis is complete, a window shows the installation operations that will be performed.

11. Review the installation settings and click **Next**. The Depot window is displayed (Figure 26 on page 101).

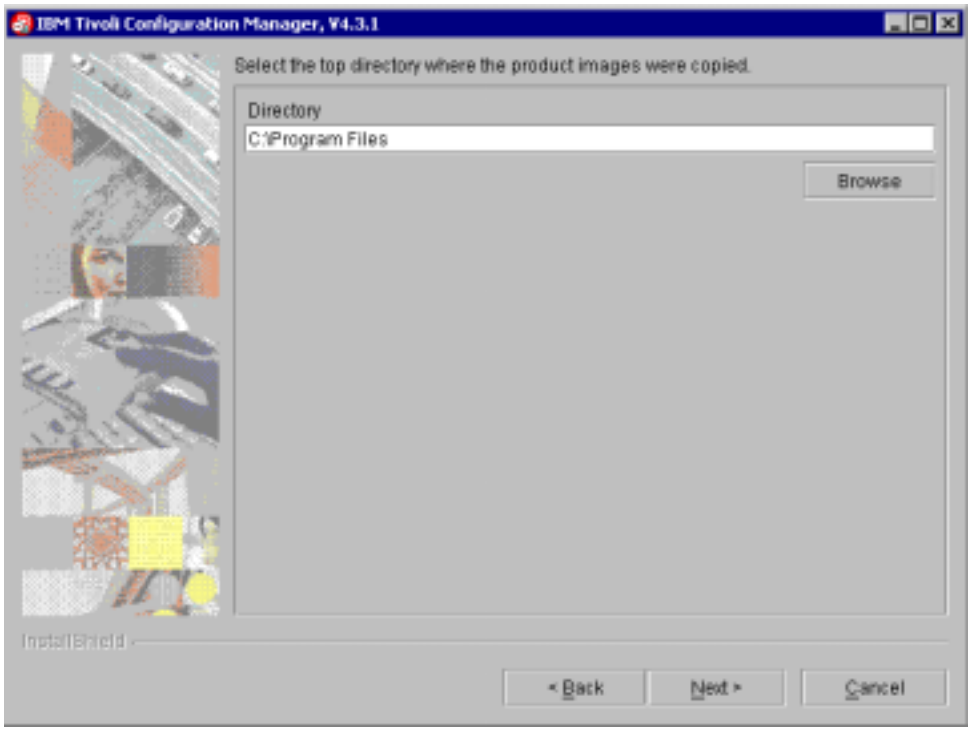
    There are three options:

    - Query when needed

      The InstallShield wizard will query for the location of product images when it needs them. You will have to observe the installation process and respond to the prompts. This is the default setting.

    - Verify local depot

      The InstallShield wizard prompts for the top directory to where the installation images have been copied. The InstallShield wizard then searches all subdirectories of the specified directory, to verify that all images are present in the location you specified. If an image is not found, the InstallShield wizard will query for the location of the missing product image. Later, you are able to perform the installation unattended.



    - Remote

Use this option if images are deployed on a managed node before you start the installation. Two sample files, `indexmap.XML`, and `nodesmap.XML` are included on the IBM Tivoli Configuration Manager Installation, version 4.3.1 CD. The files have to be copied from the /CONFIG directory to the path <*install_directory*>/cmserver, where *install_directory* is the directory in which IBM Tivoli Configuration Manager, version 4.3.1 is installed. You have to customize the two files as follows:

– `nodesmap.XML`

  This contains the source nodes where the installation images are located. For each source node listed, there is a list of target nodes which will obtain the installation images from that source node.

– `indexmap.XML`

  For each source node listed in the `nodesmap.XML` file, this contains the source node directory path for each index filename of the components that will be installed on the target nodes. The source node directory path for each index file consists of the <nodeprefix> concatenated with the <indexpath> entry.

This installation allows you to copy the installation images from the Tivoli server to a server local to where the images will be installed. From this server, the images can be installed to target workstations by issuing only the install command from the Tivoli server.

12. Click **Next**. The Step List window is displayed (Figure 28 on page 103).

    From the Step List window you can change some values, for example the gateway port, the gateway name. Change the status value to **Held** for those steps you do not want to run, for example, if you do not want to register the plug-in for Change Manager because you have not configured the RIM object, or if you want to suspend an installation.

13. Click **Run next** to start the next step in the list with a status set to Ready. Click **Run all** to run all steps in the list with a status set to Ready.

    For more information about this window, or if any of the steps are not in the Success state after the installation, refer to "Using the Step List" on page 127.

    Note: If the installation cannot find required installation images, you are prompted with a Locate Images window where you specify the location of the required installation image. If this window is displayed, locate the image and click **OK** to continue the installation.

14. Click **Finish**.

15. If you want to create the your Tivoli region managed nodes and endpoints, refer to Appendix A, "Installation Mechanisms Provided by Tivoli Management Framework," on page 137. If you want to further check that the installation has correctly installed the components you selected, refer to "Verifying an Installation" on page 135.

Note: You must now:

- Migrate the existing database schema. See "Upgrading Database Scripts" on page 66 for details of the scripts to be upgraded
- Run the upgrade scripts, described in "Installing and Upgrading Query Libraries" on page 142, to upgrade the pervasive queries.

IBM Tivoli Configuration Manager Silent Installation

Use this option for a simple installation, when default values are used. This installation performs silent install for typical installations. Use the following procedure to perform an unattended installation from a command line:

1. The installation images used by this installation are on the following CDs:
   - IBM Tivoli Configuration Manager Server, version 4.3.1
   - IBM Tivoli Configuration Manager National Language Support, version 4.3.1
   - Tivoli Management Framework 1 of 2, version 4.3.1
   - Tivoli Management Framework 2 of 2, version 4.3.1
   - Tivoli Management Framework Language Support, version 4.3.1

   Create an installation directory, then create a subdirectory for each of the installation CDs. In turn, place each CD in the CD-ROM drive, and copy the images from each CD to its own subdirectory of the installation directory. The name you choose for the installation directory must be specified in the `server.rsp` file.
2. Copy the `server.rsp` file from the root directory of the IBM Tivoli Configuration Manager Server, version 4.3.1 to the installation directory.
3. Edit the `server.rsp` file to customize the values appropriate to your installation.
4. Start the installation with the command:

   setup_name `-options` *Absolute_Path*`/server.rsp -silent`

   where:

   setup_name
   Is one of

   AIX setup_aix.bin

   HP-UX
   setup_hpux.bin

   Linux on zSeries
   setup_linux_390.bin

   Linux intel
   setup_linux_intel.bin

   Solaris
   setup_solaris.bin

   Windows
   setup.exe

   Absolute_Path
   Is the path, including the drive letter to the location of the response file.

   Note: The InstallShield Wizard is not supported on the following UNIX operating systems:
   - Sun Solaris Operating Environment on x86, version 10
   - Linux on iSeries/pSeries
5. When the installation completes, a log file, named `cmserver.log`, is written in the temporary directory of the machine on which IBM Tivoli Configuration Manager has been installed. The log file contains the results of the installation. If you want to further check that the installation has correctly installed the components you selected, refer to “Verifying an Installation” on page 135.

IBM Tivoli Configuration Manager Uninstall

For Server installations performed using the InstallShield wizard, you can uninstall the components using the Add/Remove program feature on Windows. This feature is available only for the Server installation program on Windows. For UNIX and software installed using any of the other provided installation programs, you need to use the Tivoli Management Framework commands or utilities to uninstall products and resources (see the *Tivoli Management Framework Reference Manual* for more information).

When using the Add/Remove programs feature on Windows, only those components installed using the provided installation program are removed. In other words, if you created managed nodes or other Tivoli resources and installed components on these resources, they are not removed from those systems.

For UNIX

Remove all directories created during the installation.

For Windows

Use the following procedure to uninstall IBM Tivoli Configuration Manager:

- From the Control Panel, Click **Add/Remove Programs**. Scroll down the list of software and highlight IBM Tivoli Configuration Manager, version 4.3.1. Click **Add/Remove**.

  The Confirm IBM Tivoli Configuration Manager Removal window is displayed.
- Click **Enter** to uninstall IBM Tivoli Configuration Manager, version 4.3.1.

Chapter 6. Desktop Installation

This chapter describes how to install or upgrade the Desktop components of IBM Tivoli Configuration Manager on supported Windows platforms, using the InstallShield wizard. The Desktop components of IBM Tivoli Configuration Manager are:

- Tivoli Desktop for Windows
- Desktop administrative interfaces:
  - Activity Planner GUI
  - Distribution Status console
  - Change Manager GUI
  - Inventory GUI
- Java components, which installs the following:
  - Java 1.4.2 for Tivoli
  - Java RDBMS Interface Module
  - Java Client Framework for Tivoli
  - JavaHelp 1.0 for Tivoli
- Software Package Editor, if an endpoint is detected.

To help you determine your installation mechanism as well as know what is required during the installation, use the following information:

- If you use the InstallShield wizard provided by IBM Tivoli Configuration Manager and you want additional language support for the Tivoli Desktop, install the additional language support by running the setup program provided on the Tivoli Management Framework Language Support, version 4.3.1 CD.
- If you use the Tivoli Desktop for Windows installation followed by the installation of components using software package blocks (SPBs), for the components and services of IBM Tivoli Configuration Manager, install the additional language support by installing the SPBs provided on IBM Tivoli Configuration Manager Desktop, version 4.3.1 CD. Refer to the *Tivoli Management Framework Reference Manual* for more information.
- IBM Tivoli Configuration Manager Desktop, version 4.3.1 can only connect to a Tivoli management region server with IBM Tivoli Configuration Manager, version 4.3.1 installed. Connection to a Tivoli management region server using IBM Tivoli Configuration Manager, version 4.2.2, or Version 4.2.3 is not supported.

Component Prerequisites

The following component prerequisites must be installed before starting the installation. These component prerequisites are installed automatically if they are not present before the installation when you use the InstallShield wizard to install the desktop. The components are located on the following CDs:

- IBM Tivoli Configuration Manager Desktop, version 4.3.1
  - Tivoli Desktop for Windows
  - Activity Planner GUI
  - Distribution Status console
  - Change Manager GUI

  - Inventory GUI
  - Software Package Editor
- Tivoli Management Framework 2 of 2, version 4.3.1
  - Java 1.4.2 for Tivoli
  - Java Help 1.0
  - Java Client Framework 4.3.1
  - Java RDBMS Interface Module 4.3.1

The Desktop component prerequisites are listed in Table 25

Table 25. Desktop Component Prerequisites

This component...	**Requires this prerequisite software to be installed...**
Tivoli Desktop for Windows	None
Java 1.4.2 for Tivoli	None
Java Help 1.0	None
Java Client Framework 4.3.1	None
Java RDBMS Interface Module 4.3.1	None
Activity Planner GUI	Java 1.4.2 for Tivoli
	Java Client Framework 4.3.1
	Java RDBMS Interface Module 4.3.1
Distribution Status console	Java 1.4.2 for Tivoli
	Java Help 1.0
	Java Client Framework 4.3.1
	Java RDBMS Interface Module 4.3.1
Change Manager GUI	Java 1.4.2 for Tivoli
	Java Help 1.0
	Java Client Framework 4.3.1
	Java RDBMS Interface Module 4.3.1
Inventory GUI	Java 1.4.2 for Tivoli
	Java Client Framework 4.3.1
	Java RDBMS Interface Module 4.3.1
Software Package Editor	A Tivoli endpoint at the Tivoli Management Framework, version 4.3.1
	Java 1.4.2 for Tivoli

Note: For more information on the components, refer to “Installation Options” on page 33

Locating the InstallShield Wizard Installation Program

The Desktop installation program is located in the `root` directory of the IBM Tivoli Configuration Manager Desktop, version 4.3.1.

This installation program installs Tivoli Desktop for Windows and the administrative interfaces provided by IBM Tivoli Configuration Manager. The Tivoli desktop contains icons that are used to launch these administrative interfaces.

To use this installation program, see "Desktop Installation."

Starting the InstallShield Wizard

Before starting the installation program, read the information about the installation you are planning to perform. The installation program requires 120 MB of available disk space.

The general procedure for starting the installation programs is as follows:

From the IBM Tivoli Configuration Manager Desktop, version 4.3.1, run the `setup.exe` file.

Desktop Installation

The Desktop installation program installs Tivoli Desktop for Windows and the IBM Tivoli Configuration Manager administrative interfaces. This installation can be used on supported Windows operating systems only.

To install Tivoli Desktop for Windows on Windows Server 2003, perform the following steps:

1. Open the Desktop directory on CD 3 of the IBM Tivoli Configuration Manager Desktop CD.
2. Run **setup.exe**.

When the Tivoli Desktop installation is complete, you can install components that are provided as software package blocks, located under the `cd3\SPB` directory, using Software Distribution.

Refer to the IBM Tivoli Configuration Manager Release Notes for the latest information.

The images used by this installation program are on the IBM Tivoli Configuration Manager Desktop, version 4.3.1.

To install Tivoli Desktop for Windows on supported Windows operating systems without using the InstallShield wizard, open the Desktop directory on cd 3 of the IBM Tivoli Configuration Manager Desktop CD (`cd3\desktop`), then run `setup.exe`. When the Tivoli Desktop installation is complete, you can install components that are provided as SPBs (located in the directory `cd3\SPB`), using Software Distribution (see the section Installing Components using Software Package Blocks for more information).

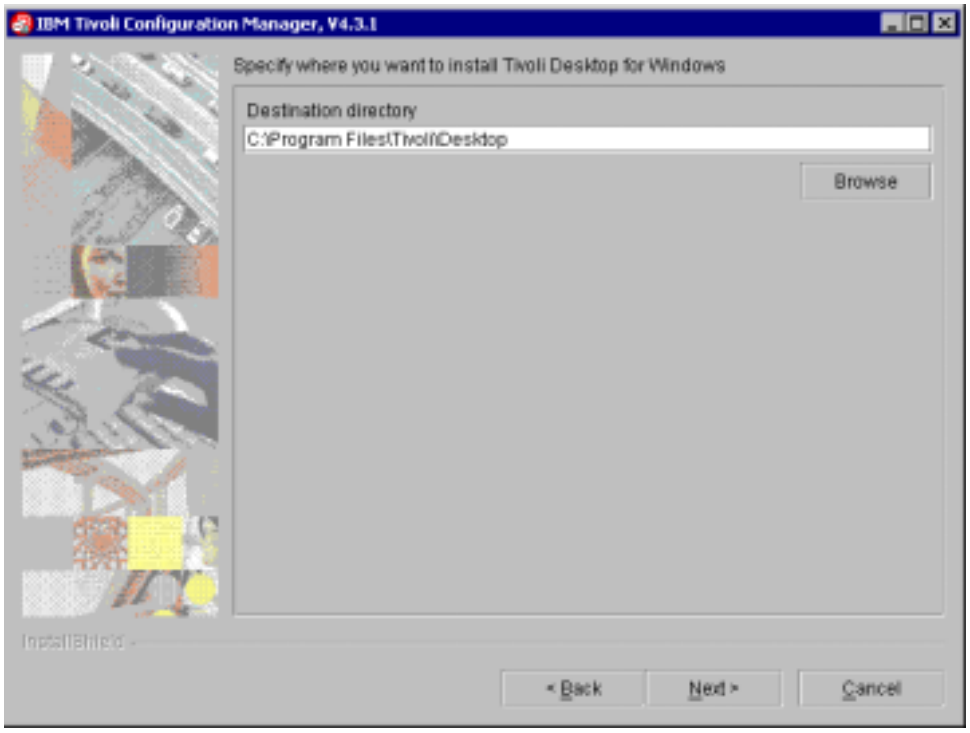
Installation Procedure

The following information is required during a desktop installation.

1. Insert the IBM Tivoli Configuration Manager Desktop, version 4.3.1 in the CD-ROM drive. Start the installation (see "Starting the InstallShield Wizard").
2. Select the language in which you want the wizard to be displayed, and click **OK**.
3. Read the welcome information and click **Next**.

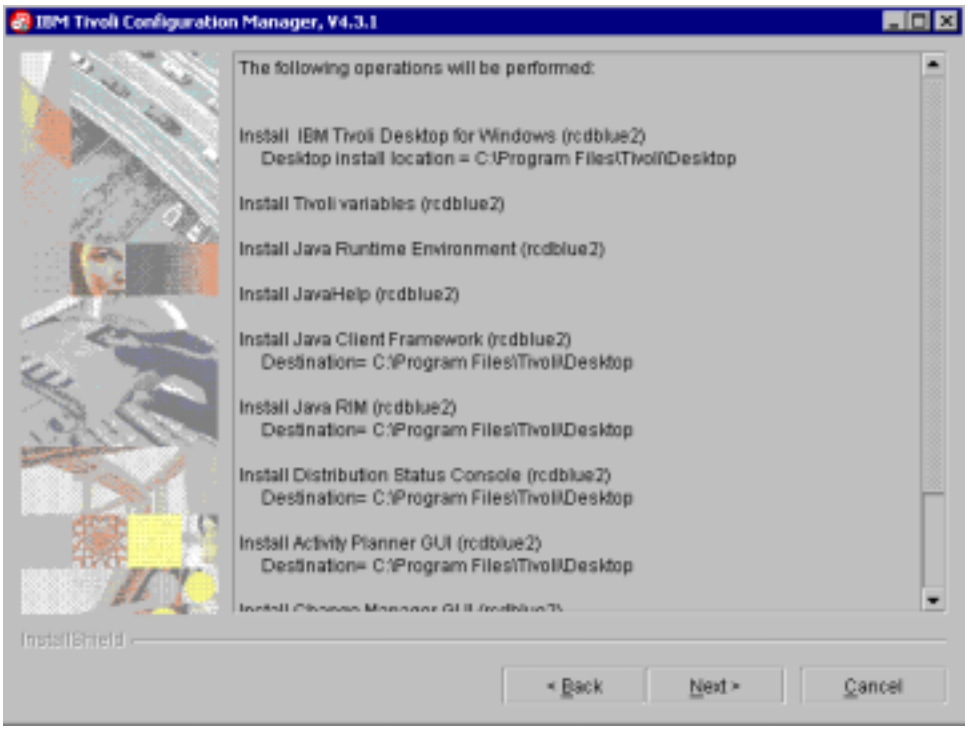
4. Read the license agreement, select the acceptance radio button, and click **Next**.

   IBM Tivoli Configuration Manager checks for installed software. When the check is complete, the Destination directory window is displayed.

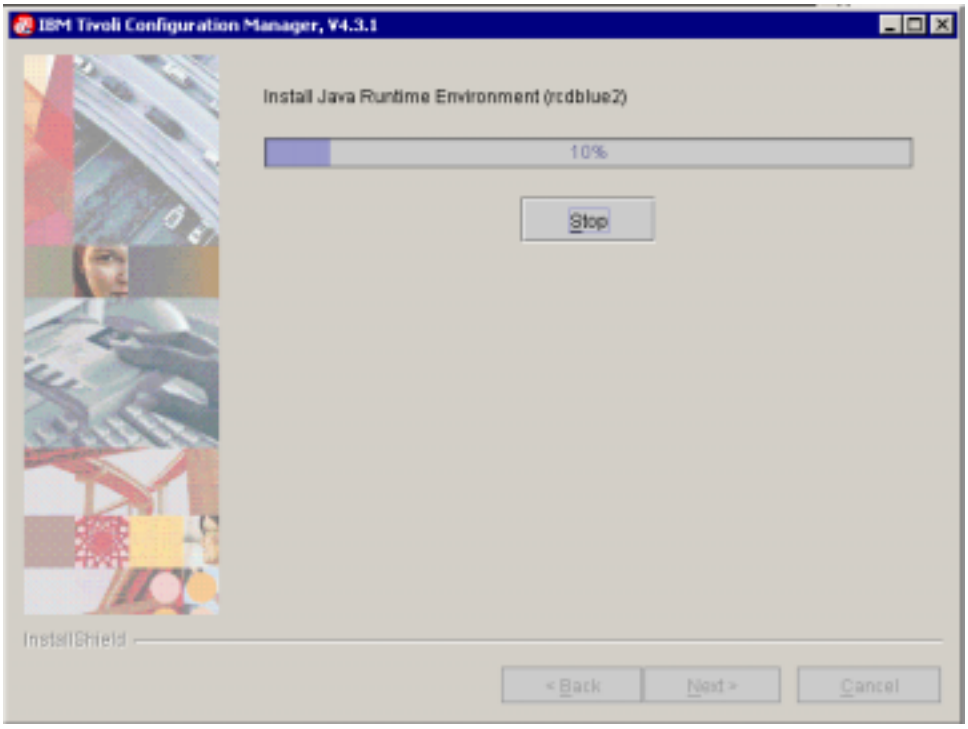


5. Select the directory where you want to install Tivoli Desktop for Windows. Click **Browse** to search for a different directory to the one shown in the Destination Directory window. When the Destination Directory window shows the correct directory, click **Next**.

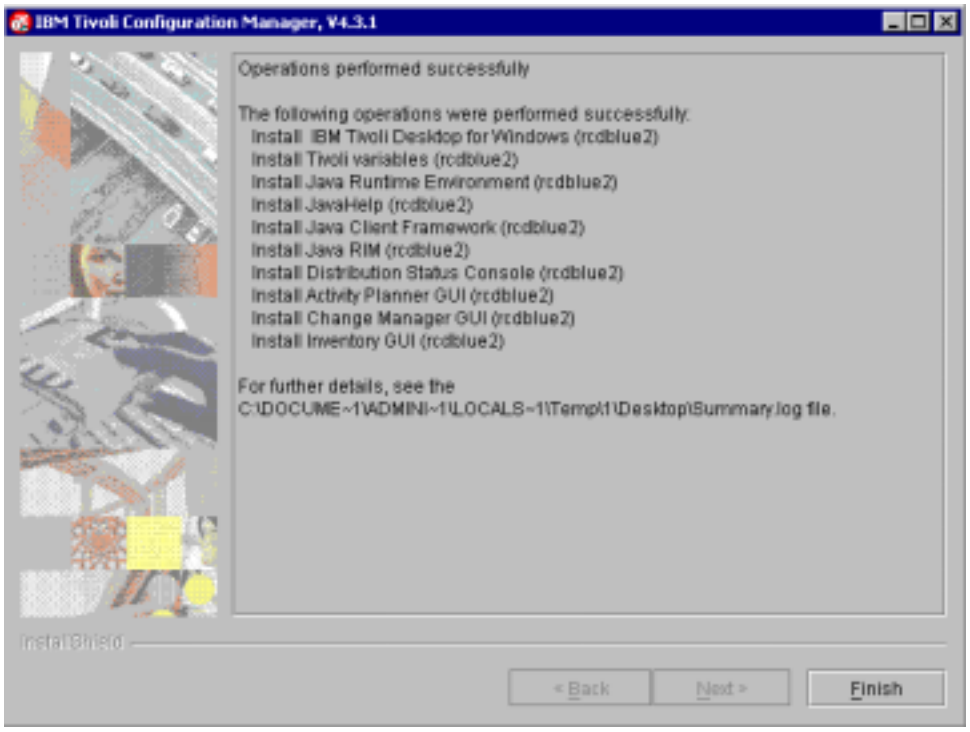
   If a valid version of Tivoli endpoint is detected, you are asked if you want to install or upgrade the Software Package Editor. Select the **Yes** or **No** radio button, and click **Next**. The Review Settings window is displayed.



6. Review the installation settings and click **Next**. The installation has started.



7. When the installation completes, a list of completed operations is displayed. This information shows a successful installation or contains a list of which items failed to install and the reasons for those failures.



If an operation fails during an installation, the Diagnose Failure window is displayed. See "Diagnosing a Failed Installation" on page 127 for more information.

8. Click **Finish**.

Upgrading Tivoli Desktop for Windows

The procedure for an upgrade is the same as for the installation procedure, except that the Destination Directory window is not displayed.

Note: If the Desktop for Tivoli Management Framework, version 4.1.1 is already installed, an upgrade to Version 4.3.1 is performed.

Tivoli Desktop for Windows Silent Installation

Use the following procedure to perform an unattended installation from a command line:

1. Insert the IBM Tivoli Configuration Manager Desktop, version 4.3.1 in the CD-ROM drive.
2. Copy the `desktop.rsp` file from the root directory of the CD to the installation directory.
3. Edit the `desktop.rsp` file to customize the values appropriate to your installation.
4. Start the installation with the command:

   `setup.exe -options` *`Absolute_Path`*`/desktop.rsp -silent`

   where *Absolute_Path* is the path, including the drive letter to the location of the response file.
5. When the installation completes, a log file, named `desktop.log`, is written in the temporary directory of the machine on which Tivoli Desktop for Windows has been installed. The log file contains the results of the installation.

Uninstalling Tivoli Desktop for Windows

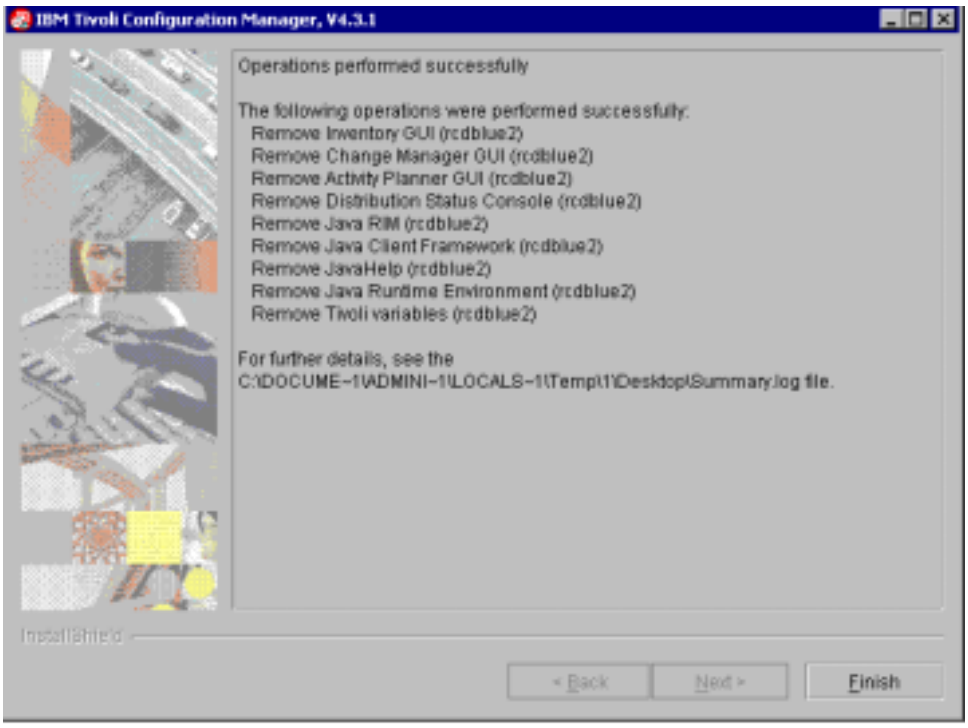
To uninstall Tivoli Desktop for Windows and all desktop components, you must first uninstall the desktop components, and then uninstall the Tivoli Desktop.

Use the following procedure to uninstall Tivoli Desktop for Windows:

1. Enter the following command to remove the desktop components:

   ```
   setup.exe -remove
   ```

   The Confirm that you want to uninstall the Desktop Component window is displayed.
2. Click **Next**. A window is displayed showing the progress of the uninstallation. All the Administrative interfaces are uninstalled. The details for uninstalling the Administrative interfaces are shown on the following window that is displayed when the uninstallation has completed. This window shows an example of the results of the uninstallation.



3. Click **Finish** to complete the uninstallation of the desktop components.
4. To remove the Tivoli Desktop, from the **Start** menu in Windows, select **Settings**, then **Control Panel**. Click **Add/Remove Programs**, then highlight the Tivoli Desktop entry and click **Change/Remove** to start the InstallShield Wizard for Tivoli Desktop.

Note: The uninstallation process does not uninstall the following directories and contents:

apm This directory is created after the installation.

ccm This directory is created after the installation.

swdis This directory is shared with other resources.

The directories are located in the same directory that was used for the installation of Tivoli Desktop for Windows. You must manually delete these directories.

Chapter 7. Maintaining and Troubleshooting a Configuration Management Environment

This chapter includes information that helps you manage your configuration management environment as well as perform routine maintenance. This chapter contains the following topics:

- "Resources Cannot be Found in the Tivoli Environment" on page 133

  Provides information about how to troubleshoot a request collection,rc=-1 general error.
- "Collecting Diagnostic Information" on page 134

  Provides information about how to collect diagnostic information in the event that you need to contact Customer Support.
- "Installing Software Signatures" on page 135

  Provides information about installing and updating software signatures.
- "Verifying an Installation" on page 135

  Provides information about how to verify that the installation has been performed correctly.

Testing Schemas

When installing the schema outside of the provided installation program, you can check the log file for success or failure. The log file, however, contains many SQL messages. Some of these messages are harmless, but some could indicate potential problems. Additionally, you could run the following RDBMS commands, and manually compare these against those documented in *IBM Tivoli Configuration Manager Database Schema Reference*.

For DB2

Run the following scripts, as required:

Tables	`select name from sysibm.systables where type='T'`
Views	`select name from sysibm.systables where type='V'`
Triggers	`select name from sysibm.systriggers`
All	`select name from sysibm.systables where type in ('T','V') union select name from sysibm.systriggers`

For Informix

Run the following scripts, as required:

Tables	`select tabname from systables where tabtype='T'`
Views	`select tabname from systables where tabtype='V'`
Triggers	`select trigname from systriggers`
All	`select tabname from systables where tabtype in ('T','V') union select trigname from systrigger`

Note: When tables names are created in the Informix database, the names are changed to lowercase. When performing the compare operation, use a case-insensitive compare operation.

For Microsoft SQL Server

Run the following scripts, as required:

Tables	`select name from sysobjects where xtype='U'`
Views	`select name from sysobjects where xtype='V'`
Triggers	`select name from sysobjects where xtype='TR'`
All	`select name from sysobjects where type in ('U','V','TR')`

For Oracle

Run the following scripts, as required:

Tables	`select object_name from sys.user_objects where object_type='TABLE'`
Views	`select object_name from sys.user_objects where object_type='VIEW'`
Triggers	`select object_name from sys.user_objects where object_type='TRIGGER'`
All	`select object_name from sys.user_objects where object_type in ('TABLE','VIEW','TRIGGER')`

For Sybase

Run the following scripts, as required:

Tables	`select name from sysobjects where xtype='U'`
Views	`select name from sysobjects where xtype='V'`
Triggers	`select name from sysobjects where xtype='TR'`
All	`select name from sysobjects where type in ('U','V','TR')`

Registering Enterprise Directory Query Facility Resources

For resource management of endpoints as users, you need to install both the Resource Manager and Enterprise Directory Query Facility components. Because the installation of the Enterprise Directory Query Facility component runs the **wresource** command, you should install the Resource Manager component before installing the Enterprise Directory Query Facility component. If you installed the Enterprise Directory Query Facility component before installing the Resource Manager component, you *must* run the `update_trm_query.sh` script. The script is located in the `$BINDIR/TAS/DirQuery/SCRIPTS` directory. For additional information about the **wresource** command, see *IBM Tivoli Configuration Manager User's Guide for Deployment Services*.

Completing a Server Installation

If, during a Server installation, you selected **None** in the Repository Configuration window (Figure 12 on page 86 or Figure 19 on page 94, depending on whether you are performing a typical or custom installation), you need to manually perform the following steps:

1. Ensure that the RIM objects are working. See Chapter 4, "Working With Repositories and Queries," on page 51.
2. Register the Activity Planner plug-ins by running the `reg_swd_plugin.sh`, `reg_inv_plugin.sh`, and `reg_tl_plugin.sh` scripts in the `$BINDIR/TME/APM/SCRIPTS` subdirectory. See "Registering and Upgrading Plug-ins" on page 143.

   Perform this step if there were no plug-ins registered before the installation.
3. Register the Change Manager plug-ins by running the `reg_swd_plugin.sh` and `reg_invscan_plugin.sh` scripts in the `$BINDIR/TME/CCM/SCRIPTS` subdirectory. See "Registering and Upgrading Plug-ins" on page 143.

   Perform this step if there were no plug-ins registered before the installation.
4. Register the pervasive and user Resource Manager resource types by running the `RegisterPervasive.sh` and `RegisterUser.sh` scripts in the `$BINDIR/TRM` subdirectory. See "Registering and Upgrading Plug-ins" on page 143.

5. Install the Inventory software signatures

For additional information about the running these registration scripts, see *IBM Tivoli Configuration Manager User's Guide for Deployment Services*. For information about installing Inventory signatures, see *IBM Tivoli Configuration Manager User's Guide for Inventory*.

Resuming an Installation

If an installation fails, or if you suspended an installation, you can resume the installation by entering the following command:

setup_name -resume

where:

- *setup_name* is one of

  AIX setup_aix.bin

  HP-UX
  setup_hpux.bin

  Linux on zSeries
  setup_linux_390.bin

  Linux on x86
  setup_linux_intel.bin

  Solaris SPARC
  setup_solaris.bin

When the introductory windows have been displayed (License Agreement, Select Language, etc.), the InstallShield wizard will recognize that a previous installation has failed and display the Step List window. See "Using the Step List" on page 127 for more details.

Troubleshooting a Remote Server Upgrade

The InstallShield wizard does not check that the index files exist on the remote source node. If an index file is not found during the installation, the associated step in the step list (Figure 28 on page 103) will change to the Fail state. For a small number of steps, you can use the Step List window to correct the problem (see "Using the Step List" on page 127) and complete the installation.

You can also edit the `indexmap.XML` file to change any wrongly defined paths. In this case, you can then resume the installation by entering the following command from the command line:

setup_name -resumeDepot

where:

- *setup_name* is one of
  - AIX
    setup_aix.bin
  - HP-UX
    setup_hpux.bin
  - Linux 390

setup_linux_390.bin

– Linux intel

  setup_linux_intel.bin

– Solaris

  setup_solaris.bin

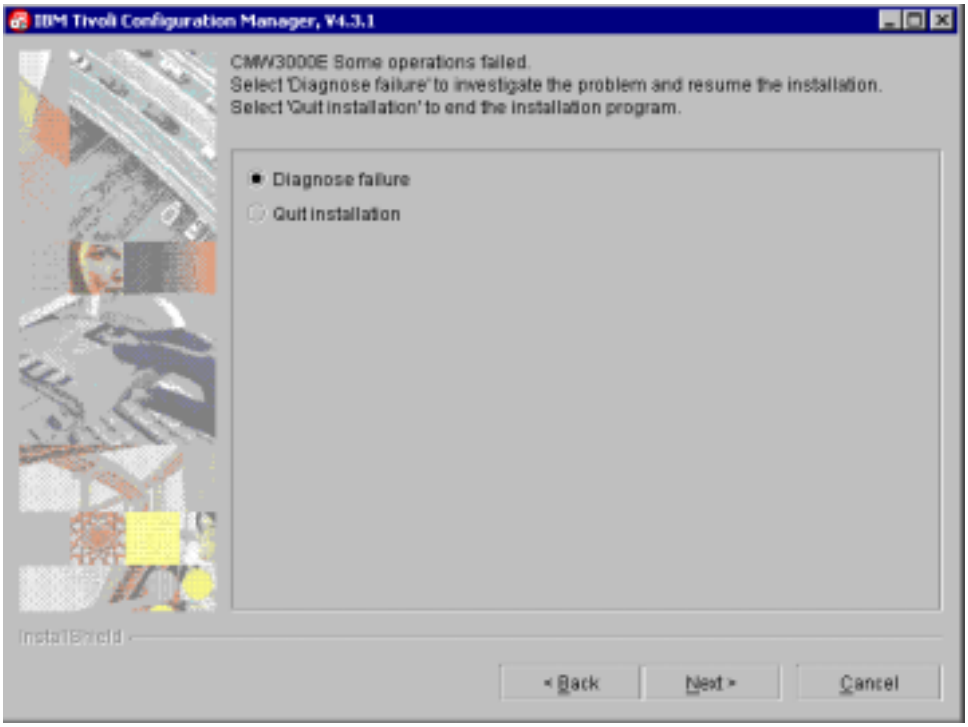
– Windows

  setup.exe

If a required component is not listed in the `indexmap.XML` file, or there is an error in the file, warning messages will be displayed after the Image Location window has been displayed. Click **Back** to redisplay to the Depot window Figure 26 on page 101. Edit the `nodesmap.XML` or the `indexmap.XML` files, then select the Remote radio button on the Depot window and retry the installation.

Diagnosing a Failed Installation

If an operation fails during a Typical Server, or Desktop installation, the Diagnose Failure window is displayed.



You can choose to diagnose the failure, or to quit the installation. If you choose to diagnose the failure, the Step List window is displayed. See “Using the Step List” for more details. If you select Finish, a summary of the installation is displayed, and the InstallShield wizard is closed. You can later perform a restart using the resume option, see “Resuming an Installation” on page 126.

Using the Step List

The Step List window (Figure 28 on page 103) can be displayed in three circumstances:

1. If you are performing a custom server installation (“Custom Server Installation” on page 90), the Resume Installation window is displayed if a previous uncompleted installation is detected.

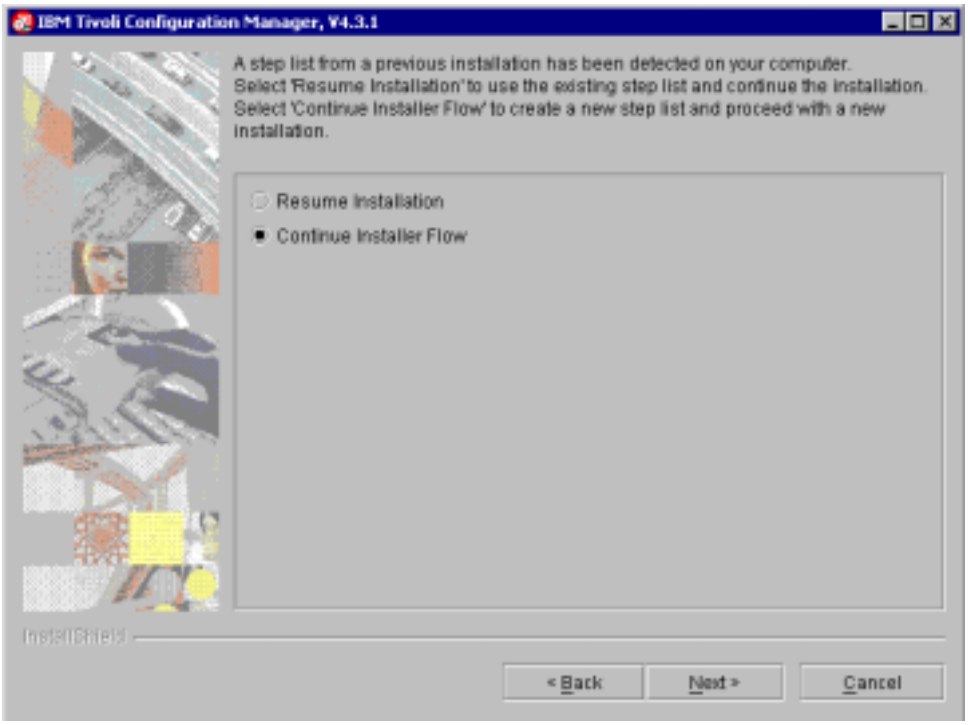


Figure 29. Resume Installation Window

Choose to either:

- Resume installation

  Displays the step list (Figure 28 on page 103). This lets you continue the previous installation. In this case, continue with step 13 on page 103 of the “Custom Server Installation” on page 90 procedure.

- Continue installation flow

  Displays the License Agreement window for you to start a new installation. In this case, continue with step 4 on page 107 of the “Custom Server Installation” on page 90 procedure.

If you choose the **Resume installation** option, the Step List window (Figure 28 on page 103) is displayed.

2. If you are performing a custom server installation or an upgrade, the Step List window is displayed. If any steps are not in the Ready state, you need to review and use the procedures listed in this section.
3. If the Diagnose Failure window is displayed during an installation and you select the Diagnose failure radio button, a Step List window is displayed showing a failed step.

The Step List window is organized as follows:

- Step #

  The installation sequence.

- Description

  The description of the installation step.

- Target

  The machine where the step will be installed.
- Status

  The step status. One of:
  - Ready. The step is ready to be installed.
  - Successful. The step has successfully completed.
  - Error. The step completed, but errors have been detected.
  - Held. One of the prerequisite steps has failed (or has been put in the held state by the operator).
- Run next

  Start the next step in the list with a status set to Ready.
- Run all

  Start in sequence, all the steps in the list with a status set to Ready.
- Stop on error

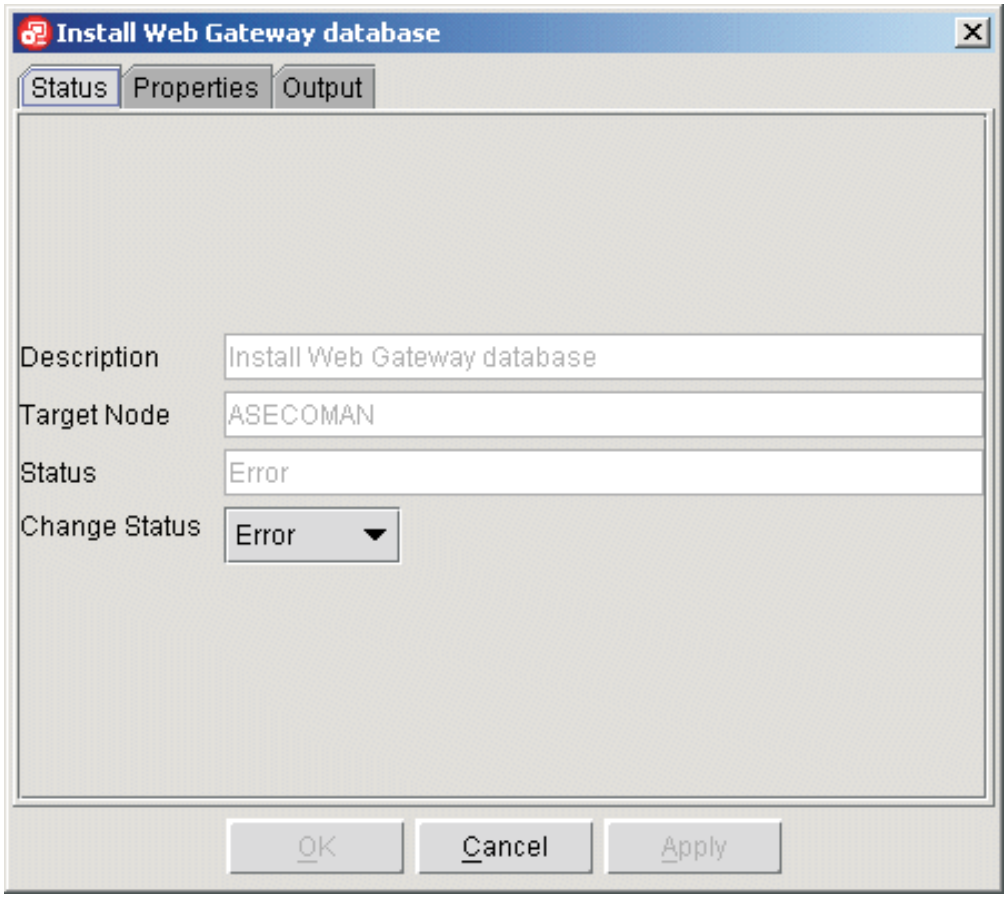
  Select Stop on error to halt the installation when an error occurs.
- Search by status

  Select the status you want to view, then click **Search**. The step list displays the first step in the step list with the status selected.
- Status

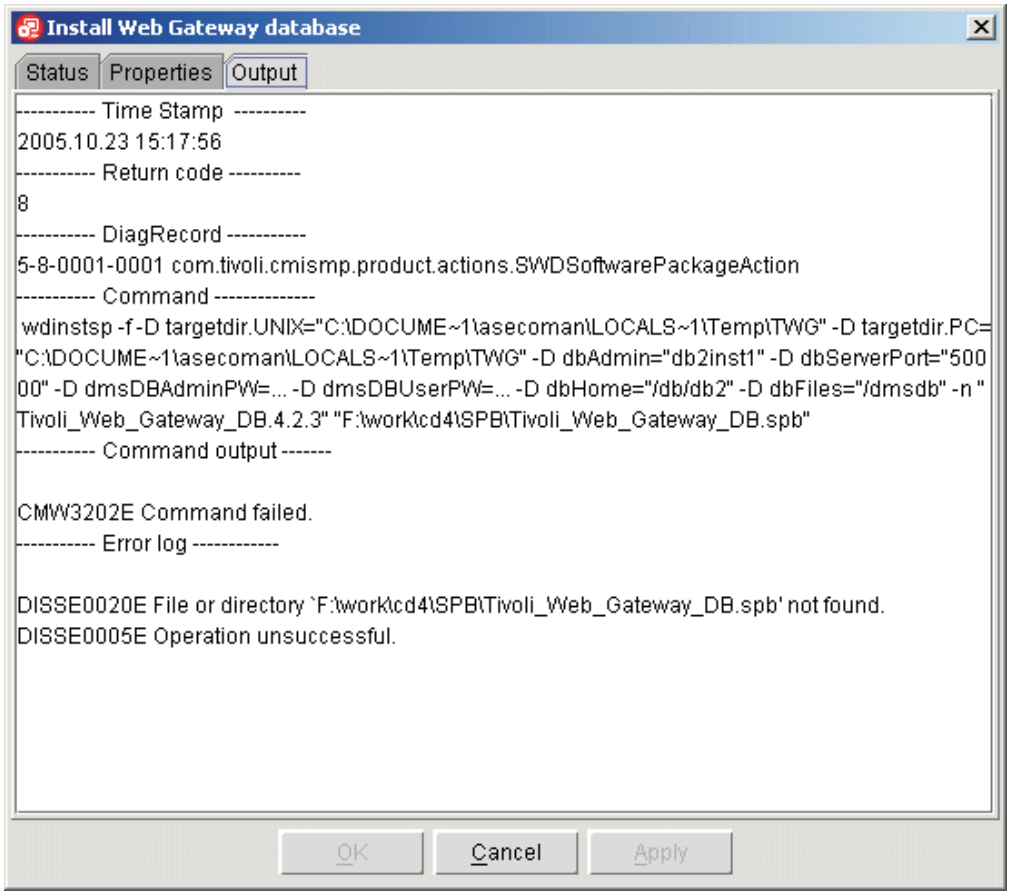
  The engine status. One of:
  - Waiting. User action is required.
  - Running. Installation of a step is in progress.
  - Stopping. After the current step, the engine will stop.
  - Searching. The engine is searching for product images.
- Details

  Shows the step status and for each status, the number of steps in that status. Also displays a total of all steps.

1. If any of the steps are not in the Success state after the installation, double-click on the step. The step status dialog is displayed.



The **Status** tab shows the status of the installation step (Ready, Success, Error, or Held). You can change the status to Ready. You can also check the log file for the results of the installation step. Click the **Output** tab. The **Output** tab shows the output and any errors that occurred for the installation step, and also the commands that were performed by the installation. An example is shown below.



The **Output** tab has the following entries

- Time Stamp

  The time that the command was run.
- Return code

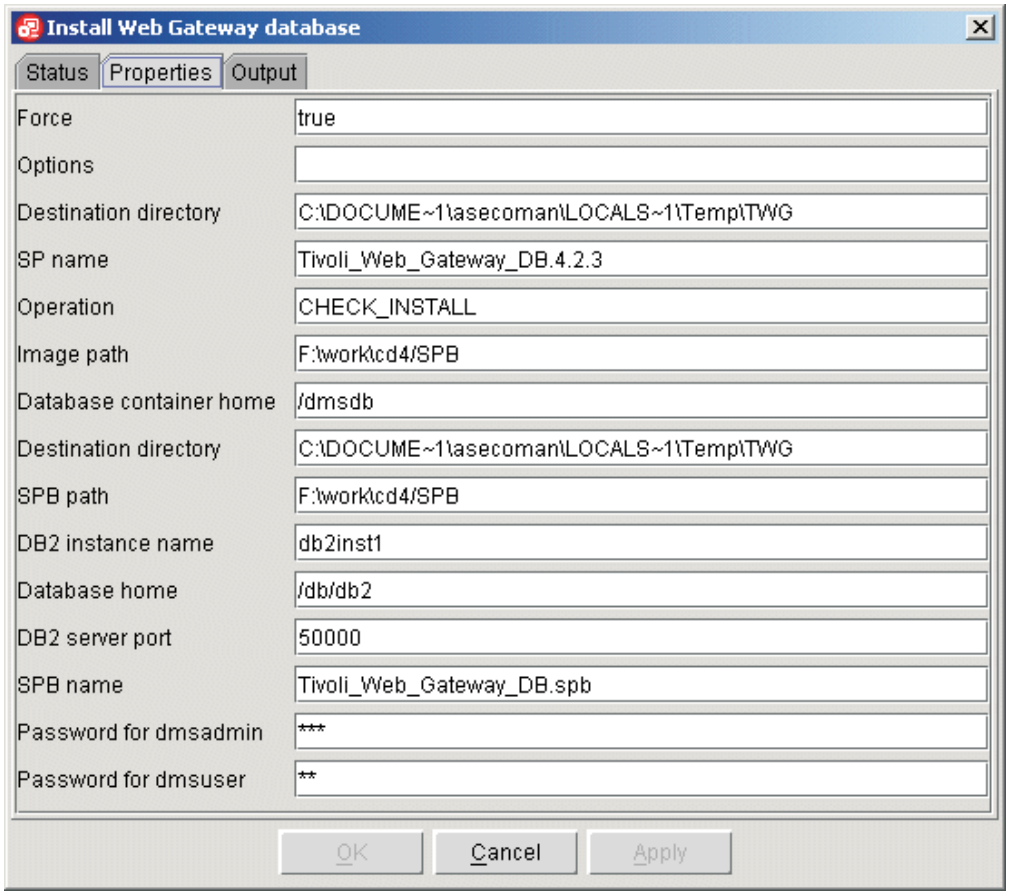
  The return code for the operation. 0 = OK, < 8 = Warning, >= 8 = Error
- DiagRecord

  A unique point of failure identification.
- Command

  The command that failed.
- Command output
- Error log

  Shows a list of errors that occurred during the installation of the step. If errors occurred, examine the errors then fix them before you try to change the state of the step to ready in the step status dialog.

Click the **Properties** tab. The **Properties** tab shows the properties of the installation step. An example is shown below.



If required, change the properties of the installation step, then click **Apply**. If you made changes in the **Properties** tab because an installation step had failed, click on the **Status** tab, then change the Status to Ready, then click **Apply**. The Step list is redisplayed. You can now try to run any steps that failed and you have changed the status to Ready by clicking **Run next**. This will run the next ready step in the step list.

Installation Fails to Start

If any installation fails to start, you do not have the required 120 MB of available disk space in the `/tmp` directory. Either:

- Re-enter the command using a different disk drive and directory path
  - Change to the directory containing the installation program.
  - Enter:

    setup_name `-is:tempdir directory`

    where directory is the disk drive and directory where the InstallShield wizard is installed, and:*setup_name* is one of:

    - AIX

      setup_aix.bin
    - HP-UX

      setup_hpux.bin
    - Linux 390

      setup_linux_390.bin
    - Linux intel

setup_linux_intel.bin

- Solaris

  setup_solaris.bin

- Windows

  setup.exe

- Make enough disk space available to run the command

If the problem is not disk space, collect a log of the startup process with the following command:

setup_name –is:log /Path/logFileName

Tivoli Web Gateway Installation Fails on AIX

The following error is returned when running setup_aix.bin to install Tivoli Web Gateway on an AIX workstation:

```
Command failed for db_vendor_name -tvf
/usr/TivTwg_II/db/config/work/db/db_vendor_name/sql/create_db.sql
```

This might be due to an incorrect umask setting on the target workstation. Tivoli Web Gateway requires umask to be set to 022. To solve this problem, check the umask setting and correct if necessary.

Troubleshooting an Undetected Tivoli Management Framework Installation

If Tivoli Management Framework is installed and is not using the default location for the `setup_env.sh` file, it will not be detected by the InstallShield wizard. If the `setup_env.sh` file is not in the default location, set the environment variable `EtcTivoli` to the path where the `setup_env.sh` file is located, for example:

```
export EtcTivoli=/etc/Tivoli_935
```

Troubleshooting a Tivoli Management Framework Installation

When you install Tivoli Management Framework, ensure that no variable with name `o_dispatch` is present in the system variables. This variable might have been left over from a previous installation and can cause the current installation to fail.

Resources Cannot be Found in the Tivoli Environment

If some resources cannot be found in the Tivoli environment during the mcollect interaction between an endpoint and its gateway, a `request collection,rc=-1` general error will be entered in the `TraceDMS1.log` file. This error occurs when any report for a registered application is going to be uploaded from the Tivoli Web Gateway to the mcollect component. To fix this error, perform the following on the involved gateway:

1. Enter the following command to verify and repair the gateway database:

   wgateway <*gateway_name*> **dbcheck**

2. Enter the following command to stop and start the gateway:

   wgateway <*gateway_name*> **restart**

3. Enter the following command to recycle the object dispatcher:

   odadmin reexec <*object dispatcher*>

where:

<gateway_name>
is the gateway to which the endpoint (that has the Tivoli Web Gateway installed) is connected

<object dispatcher>
is the dispatcher of the managed node where the gateway is installed

Refer to *Tivoli Management Framework Reference Manual*, SC32-0806 for more information on Tivoli Management Framework commands.

Collecting Diagnostic Information

To collect diagnostic information (if you need to contact Customer Support, see "Contacting IBM Software Support" on page 150), create a zip or tar file of the following directories:

- For the Desktop installation and upgrade, `$(TEMP)/Desktop`
- For the Server installation and upgrade, `$(TEMP)/cmserver`, and `<install_directory>/cmserver`, where *install_directory* is the directory in which IBM Tivoli Configuration Manager Installation, version 4.3.1 is installed

All the above directories contain the following log files:

- `File.log`. The installation logfile
- `Preview.log`. Contains the preview content
- `Summary.log`. Contains the result of the installation when running in typical mode
- `*.XML` files containing the installation state

Activating Traces

To diagnose unexpected results from an installation program, activate traces with the following command:

```
setup_name -W cmLog.active=true
```

where *setup_name* is one of:

- AIX
  setup_aix.bin
- HP-UX
  setup_hpux.bin
- Linux 390
  setup_linux_390.bin
- Linux intel
  setup_linux_intel.bin
- Solaris
  setup_solaris.bin
- Windows
  setup.exe

Alternatively, you can creates a file named cmtrace in the $(TEMP) directory, traces will be activated automatically, without the need to use the CLI command.

Other Log Files

If you installed using the InstallShield wizard, the installation logs for the **winstall** and **wpatch** commands are saved in the <*install_directory*>/cmserver/install_logs/winstall_$(IND.NAME)_$(NODE.NAME), directory, where *install_directory* is the directory in which IBM Tivoli Configuration Manager, version 4.3.1 is installed, $(IND.NAME) is the index file referenced by the command, and $(NODE.NAME) is the target node of the command.

Installing Software Signatures

After installing or upgrading IBM Tivoli Configuration Manager, you need to install or upgrade the software signatures used by the Inventory component. These software signatures are required for performing inventory scans. Software signatures are updated quarterly and are available of the Support Web site. Additionally, you can create and maintain your own set of custom software signatures. For details about installing and updating software signatures and creating and maintaining custom software signatures, see *IBM Tivoli Configuration Manager User's Guide for Inventory*.

Verifying an Installation

To verify that the installation has been performed correctly, you can perform the following checks:

Activity Planner
Check for the correct functionality of the GUI.

Ensure that you install the same level of code on the endpoints that is installed on the Tivoli server. If an interim fix or fix pack is installed on the Tivoli server, the same interim fix or fix pack must be installed on the endpoint.

Change Manager
Check for the correct functionality of the GUI.

Ensure that you install the same level of code on the endpoints that is installed on the Tivoli server. If an interim fix or fix pack is installed on the Tivoli server, the same interim fix or fix pack must be installed on the endpoint.

Software Distribution
Use the **wlsinst –a** command to list all the products that have been installed on the Tivoli Management Framework. You can then look through the list for Tivoli Software Distribution Server, version 4.3.1, or if you have upgraded, look in the list of patches for Tivoli Software Distribution Server, Upgrade, version 4.2.2 to 4.3.1, or Version 4.2.3 to 4.3.1.

Verify RIM object creation

You can verify the creation of the RIM objects with the following command:

wrimtest –l <*RIM_name*>

where <*RIM_name*> is the name of the RIM. This is one of the following:

Component	RIM name
Inventory	inv_query invdh_1
Change Manager	ccm
Activity Planner	planner
Distribution Status	mdist2
Pristine Manager	pristine

Inventory scan fails after endpoint upgrade

If you perform an Inventory scan on an endpoint after migrating from version 4.1.1 to version 4.3.1, the scan fails because of the difference in the attribute definition between the previous and new MIF file structure. The following error is returned:

```
INVCF0001E MDist returned the following error for scan scan_ID on client client_ID:
MIF parse error: Type mismatch for group.
```

To prevent this problem, delete the previous .MIF files after the migration is completed and before running any scans. As an alternative, you can create a before scan script in the Inventory profile to perform this operation.

Appendix A. Installation Mechanisms Provided by Tivoli Management Framework

This chapter describes how to install and upgrade the components of IBM Tivoli Configuration Manager using any of the following different installation mechanisms:

- Using Tivoli Management Framework (for more information see "Installation Sequence Using Tivoli Management Framework Mechanisms"). Use Tivoli Management Framework to manually install the components provided by IBM Tivoli Configuration Manager, as follows:
  - Use the Tivoli Software Installation Service, where you select which products to install on which machines. See "Installing and Upgrading Using Tivoli Software Installation Service" on page 139.
  - Use the Tivoli desktop, where you select which product and patches to install on which machine. See "Installing and Upgrading Using the Tivoli Desktop" on page 140.
  - Use the **winstall** and **wpatch** commands provided by Tivoli Management Framework, where you specify which products and patches to install on which machine. See "Installing and Upgrading Using the Command Line" on page 140.
- "Installing and Upgrading Using Software Distribution" on page 141

Note: You must also perform the procedures in Chapter 4, "Working With Repositories and Queries," on page 51.

See Table 4 on page 28, Table 5 on page 29, Table 6 on page 30, and Table 26 on page 141 for the version and tag name of each component.

Installation Sequence Using Tivoli Management Framework Mechanisms

If you plan to manually install the components provided by IBM Tivoli Configuration Manager, follow your deployment plan and install the components. See Table 4 on page 28, Table 5 on page 29, Table 6 on page 30, and Table 26 on page 141 for the version and tag name of each component. You can use the following suggested installation sequence:

1. Create the Tivoli management region (Tivoli region) by first installing and configuring Tivoli Management Framework on a server, which creates the Tivoli management region server (Tivoli server), and then creating and configuring the remainder of the Tivoli region by creating managed nodes, gateways, repeaters, and endpoints. For planning information, see *Tivoli Management Framework Planning for Deployment*. For installation and configuration information, see *Tivoli Enterprise Installation Guide*.
2. Install the Java components:
   a. Install the Java 1.4.2 for Tivoli component on the Tivoli server and each required managed node.
   b. Install the Java Client Framework for Tivoli component on the Tivoli server and each required managed node and endpoint.
   c. Install the Java RDBMS Interface Module on each required managed node.

d. Install the JavaHelp 1.0 component on each required managed node.

3. Install the Inventory components:
   a. Install the Scalable Collection Service patch as follows:
      - On the Tivoli server
      - On each managed node where the Inventory component will be installed
      - On all gateways
      - On each managed node that will be configured as a repeater
   b. Install the Inventory component on the Tivoli server and each required managed node.
   c. Install the Inventory Gateway component on each required gateway.
   d. Install the software signatures. For details, see *IBM Tivoli Configuration Manager User's Guide for Inventory*.
4. Install the Software Distribution components:
   a. Install the Software Distribution component on the Tivoli server and each required managed node.
   b. Install the Software Distribution Gateway component on each required gateway.
   c. Install the Software Package Editor on each required managed node or endpoint.
5. Install the Deployment Services components:
   a. Install the Activity Planner component on the Tivoli server and each required managed node.
   b. Install the Change Manager component on the Tivoli server and each required managed node.
   c. Install the Resource Manager component on the Tivoli server for resource management of users or devices.
   d. Install the Resource Manager Gateway component on each required gateway.
   e. Install the Scalable Collection Service component on each required managed node.
   f. Install the Enterprise Directory Query Facility component on the Tivoli server.
   g. Install the Pristine Manager component on the Tivoli server, and the Pristine Manager Gateway component on each required gateway.
   h. Install Patch Management:
      - Install the Patch Management component on the Tivoli management region server
      - Install the Patch Management component on the IBM Tivoli Configuration Manager Automation Server
      - Install the Patch Management component on each required managed node
   i. Install Query Directory for Microsoft Active Directory on a Windows managed node running Microsoft Active Directory Server.
   j. Install Query Directory for Microsoft Active Directory - Command Line Interface on all required managed nodes.
   k. Install Tivoli Provisioning Manager for Operating System Deployment integration on managed nodes running Activity Planner.
   l. Install CM Extension for Tivoli License Manager on the Tivoli server.

m. Install CM Endpoint Extension on gateways running Inventory Gateway.

Before installing several of these components, you might need to install one or more Java components. The details about the combination of the Java components with the IBM Tivoli Configuration Manager components are detailed in "Installation Options" on page 33.

Installing and Upgrading Using Tivoli Software Installation Service

Note: Tivoli Software Installation Service is deprecated and should not be used in association with Tivoli Management Framework, version 4.3.1. You can use Tivoli Software Installation Service only if you are upgrading from Tivoli Management Framework, version 4.1.1. In both cases, patch 4.1.1-SIS-0003 is required.

When installing products using Tivoli Software Installation Service, select the products to be installed using the component name shown in Table 4 on page 28. When installing patches using Tivoli Software Installation Service, select the patches to be installed using the component name shown in Table 5 on page 29 or Table 6 on page 30. You can only use Tivoli Software Installation Service to install the server components. See Table 4 on page 28, Table 5 on page 29, Table 6 on page 30, and Table 26 on page 141 for the version and tag name of each component.

Tivoli Software Installation Service does not distinguish between products and patches. Independent of whether the installation image is used for an installation or upgrade, Tivoli Software Installation Service refers to all installation images as products.

Tivoli Software Installation Service can install multiple products on multiple machines in parallel. This software can install more products on more computer systems in less time than using the installation mechanisms provided by Tivoli Management Framework.

The basic procedure for using Tivoli Software Installation Service to install products is as follows:

1. Import the product images into the Tivoli Software Installation Service depot.
2. Select the components to be installed.
3. Select the machines where each component is to be installed.
4. Click **Install**.

During the installation procedure, you are asked to provide installation options, when applicable. These options are listed by component in "Installation Options" on page 33.

Notes:

1. The Tivoli Software Installation Service does not support blank spaces in any of the installation attributes.
2. If an installation is started with Tivoli Software Installation Service, it cannot be continued with the InstallShield wizard.

For detailed information about using Tivoli Software Installation Service, see *Tivoli Enterprise Installation Guide*.

Installing and Upgrading Using the Tivoli Desktop

When installing products using the Tivoli desktop, select the products to be installed using the component name shown in Table 4 on page 28. When installing patches using the Tivoli desktop, select the patches to be installed using the component name shown in Table 5 on page 29 or Table 6 on page 30. You can only use Tivoli desktop to install the server components.

The Tivoli desktop can install or upgrade the same product on multiple machines serially.

The basic procedure for using the Tivoli desktop to install a product is as follows:

1. From the Tivoli desktop, select **Install → Install Product** from the **Desktop** menu.
2. Select the media and component to be installed.
3. Select the machines where the component is to be installed.
4. Click **Install**.

The basic procedure for using the Tivoli desktop to upgrade a product is as follows:

1. From the Tivoli desktop, select **Install → Install Patch** from the **Desktop** menu.
2. Select the media and component to be upgraded.
3. Select the machines where the component is to be upgraded.
4. Click **Install**.

During the installation procedure, you are asked to provide installation options, when applicable. These options are listed by component in “Installation Options” on page 33. There should be no installation options required during an upgrade procedure.

For detailed information about using the Tivoli desktop to install or upgrade products, see *Tivoli Enterprise Installation Guide*.

Installing and Upgrading Using the Command Line

When installing products using the **winstall** command, specify the name of the index file (`.IND`) using the file shown in Table 4 on page 28. When upgrading products using the **wpatch** command, specify the name of the index file using the file shown in Table 5 on page 29 or Table 6 on page 30.

When using the **winstall** command to install a product or when using the **wpatch** command to upgrade a product, you specify the following information on the command line:

- The location of the image on the installation media.
- The name of the index file associated with the product to be installed or upgraded.
- Installation options associated with the image, when applicable. These options are listed by component in “Installation Options” on page 33.
- The machines where the image is to be installed.

If you do not specify a machine when running the **winstall** command, the image is installed on all managed nodes in the Tivoli region.

If you do not specify a machine when running the **wpatch** command, the image is installed on all managed nodes in the Tivoli region when there is a prior version of this image.

For detailed information about using the **winstall** and **wpatch** commands, see *Tivoli Management Framework Reference Manual*.

Installing and Upgrading Using Software Distribution

Before installing software package blocks, the Tivoli environment must be created and IBM Tivoli Configuration Manager must be fully deployed. There are two methods for installing SPBs:

- From the CLI
- From the Desktop

For complete details about creating and distributing software package profiles, see *IBM Tivoli Configuration Manager User's Guide for Software Distribution* and *IBM Tivoli Configuration Manager Reference Manual for Software Distribution*. The following sections give an example of installing software package blocks on a Web Gateway.

Additional SPB Installation Information

For complete details about creating and distributing software package profiles, see *IBM Tivoli Configuration Manager User's Guide for Software Distribution* and *IBM Tivoli Configuration Manager Reference Manual for Software Distribution*.

For several of the provided SPBs, there is additional information required for a successful installation. This information is as follows:

Software Package Editor

After installing Software Package Editor, the **speditor_dir** key is created in the `swdis.ini` file. The path where the image is installed is:

speditor_path/*interp*

where *speditor_path* is the directory where Java Software Package Editor is installed on the local machine and *interp* is the interpreter type, the Tivoli internal representation for operating systems. For details about which interpreter type represents which operating system, see *Tivoli Management Framework Release Notes*.

Administrative interfaces for the Tivoli desktop

When using SPBs to install the administrative interfaces for use from the Tivoli desktop, the names of the software packages, that is, the names of the software profiles, must be as follows:

Table 26. Desktop Components and Software Package Names

SPB file name	Package name with version
Tivoli_JRE_NT	Tivoli_JRE_NT.1.4.2
Tivoli_JRIM	Tivoli_JRIM_431.4.3.1
Tivoli_JCF	Tivoli_JCF_431.4.3.1
Tivoli_JHelp	Tivoli_JHelp.1.0
Tivoli_APM_GUI	Tivoli_APM_GUI.4.3.1
Tivoli_CCM_GUI	Tivoli_CCM_GUI.4.3.1

Table 26. Desktop Components and Software Package Names (continued)

SPB file name	Package name with version
Tivoli_MD2GUI	Tivoli_MD2GUI.4.3.1
Tivoli_INV_GUI	Tivoli_INV_GUI.4.3.1

If the package name does not include the package version or is a different package name, the installation will fail. The complete package name is stored in the software distribution catalog, and this information is used to perform dependency checking.

Installing and Upgrading Query Libraries

The scripts used to create and upgrade query libraries with their predefined queries are located in the `$BINDIR/../generic/inv/SCRIPTS/QUERIES` directory. The historical (h_) scripts are optional, based on whether you have enabled the history tracking feature. The scripts are run once for either a fresh install or an upgrade. Run the scripts every time you perform an installation or an upgrade. The script creates only the queries that do not exist. For details about these queries, see *IBM Tivoli Configuration Manager Database Schema Reference*. The following table shows which scripts you need to run, for a fresh installation or for an upgrade from either version 4.2.2 or version 4.2.3.

SCRIPTS	Fresh 431	Upgrade from 4.2.3	Upgrade from 4.2.2
`h_subscription_query.sh`	Optional	Optional	Optional
`h_inventory_query.sh`	Optional	Optional	Optional
`inventory_query.sh`	Required	Required	Required
`subscription_query.sh`	Optional	Optional	Optional

Note: In case of interconnected Tivoli regions and if you have upgraded a Tivoli region from 4.2.3 to 4.3.1 version, you can run these scripts to upgrade the query libraries.

The installation scripts are as follows:

h_subscription_query.sh
Installs the optional H_SUBSCRIPTION_QUERY query library and its related queries.

h_inventory_query.sh
Installs the optional H_INVENTORY_QUERY query library and its related queries.

inventory_query.sh
Installs the INVENTORY_QUERY query library and its related queries.

subscription_query.sh
Installs the SUBSCRIPTION_QUERY query library and its related queries.

Registering and Upgrading Plug-ins

Depending on the installation mechanism that you used to install IBM Tivoli Configuration Manager, you might need to register Activity Planner, Change Manager, or Resource Manager plug-ins. The plug-ins must be updated every time you perform an upgrade. To update the plug-ins, run each script with the **-r** option.

If you installed the Activity Planner, Change Manager, or Resource Manager component using the provided Server installation program, you do not need to run these scripts unless you selected **None** during an installation. Additionally if the planner, ccm, or inv_query RIM objects are not correctly configured, you must run these scripts manually.

If you installed the Activity Planner or Change Manager, or Resource Manager component using any other installation mechanism, you need to run the following scripts after installation:

For Activity Planner

For a new installation, run the `reg_tl_plugin.sh` script. If you have also installed Software Distribution, version 4.3.1, and Inventory, version 4.3.1, run the `reg_swd_plugin.sh` and `reg_inv_plugin.sh` scripts. If you have installed Pristine Manager, version 4.3.1, run the `reg_pristine_apm_plugin.sh` script. These scripts are located in the `$BINDIR/TME/APM/SCRIPTS` directory.

To run these scripts, you need the `APM_Admin` Tivoli region authorization role. If you want to update the plug-ins, run each script with the **-r** option.

For Change Manager

For a new installation where you have installed Software Distribution, version 4.3.1 and Inventory, version 4.3.1, run the `reg_swd_plugin.sh` and `reg_invscan_plugin.sh` scripts. If you have installed Pristine Manager, version 4.3.1, run the `reg_pristine_ccm_plugin.sh` script. After installing or upgrading the Change Manager component, these scripts are in the `$BINDIR/TME/CCM/SCRIPTS` directory.

To run these scripts, you need the `CCM_Admin` Tivoli region authorization role. If you want to update the plug-ins, run each script with the **-r** option.

For Resource Manager

To register the resource types with which you will work, run a script to start each type. These scripts are installed in the directory `$BINDIR\TRM`, when you install Resource Manager.

RegisterUser.sh

To start the User resource type. You must have Enterprise Directory Query Facility installed before you run this script.

RegisterPervasive.sh

To start the Pervasive resource type

Note: Language packs must be installed before you register plug-ins. If you have to install a language pack after you have registered plug-ins, the plug-ins must be updated.

For detailed information about these scripts and registering resources, see *IBM Tivoli Configuration Manager User's Guide for Deployment Services.*

Appendix B. Uninstalling IBM Tivoli Configuration Manager

This chapter describes how to uninstall the components of IBM Tivoli Configuration Manager from a server, using one of the following processes:

- The **wuninst** command to remove components from specific machines. See "Uninstalling Components Using the wuninst Command."
- An application-specific script to selectively remove components. See the *Tivoli Management Framework Reference Manual* for more information.
- The **wremovsp** or **wdrmvsp** commands to remove software package blocks (SPBs) in connected and disconnected mode, respectively. See "Uninstalling Software Packages."

To uninstall the IBM Tivoli Configuration Manager from a Tivoli Web Gateway or a Desktop, use the **-remove** option.

Uninstalling Components Using the wuninst Command

The **wuninst** command calls the application-specific script. This command removes the component for the specified machines in your Tivoli environment or from the entire local Tivoli region. To uninstall the component using the **wuninst** command, specify the component tag listed in Table 4 on page 28. The syntax for this command is as follows:

```
wuninst tag hostname... [-rmfiles]
```

Uninstall components in the reverse order of their installation, for example, if you installed Tivoli Resource Manager after Tivoli Inventory was installed, you must uninstall Tivoli Resource Manager before you uninstall Tivoli Inventory. If you used the InstallShield wizard to perform the installation, or you do not know the installation sequence, check the `cmSummary.log` file, located in the `./tmp/cmserver` directory. The file contains a list of all components installed, together with their installation sequence. If an installation step runs more than one command, the cmSummary.log file reports only the last command to be performed. You can uninstall in any order components that have no dependencies. See "Installation Options" on page 33 for a description of the components and their dependencies.

For details on the **wuninst** command, see *Tivoli Management Framework Reference Manual*.

Uninstalling Software Packages

When you have installed software from SPBs, you can uninstall the software packages using one of the following commands:

wremovsp
: Uninstalls a software packages when the target can communicate with a managed node.

wdrmvsp
: Uninstalls a software packages from a disconnected target.

Note: You can use these methods to uninstall only when you have previously installed the software package from SPBs.

Use one of these commands, depending on your connectivity to the Tivoli environment, to uninstall any software installed from SPBs. For the lists of software installed from SPBs, see the tables in "Components Installed From Software Package Blocks" on page 31. For additional information on these commands, see *IBM Tivoli Configuration Manager Reference Manual for Software Distribution*.

Uninstalling Tivoli Software Distribution Endpoints

After you remove the endpoints using the procedure described in the *Tivoli Enterprise Installation Guide*, perform the following steps manually:

1. Delete the **\Product_Dir\swdis** directories from the appropriate drive.
2. Remove the `swdis.ini` and `swdis.bak` files from the SystemDir directory. On UNIX platforms, these files are located in `/etc/Tivoli`
3. Delete the **SwdisUsrPCN.Endpoint_label** keyword from the Windows registry, located in the following path:

   `HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Run`.
4. Remove the `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services \SwdisRestart` registry key and all its content.

Appendix C. Accessibility

Accessibility features help a user who has a physical disability, such as restricted mobility or limited vision, to use software products successfully. The major accessibility features in this product enable users to do the following:

- Use assistive technologies, such as screen-reader software and a digital speech synthesizer, to hear what is displayed on the screen. Consult the product documentation of the assistive technology for details on using those technologies with this product.
- Operate specific or equivalent features using only the keyboard.
- Magnify what is displayed on the screen.

In addition, the product documentation has been modified to include features to aid accessibility:

- All documentation is available in both HTML and convertible PDF formats to give the maximum opportunity for users to apply screen-reader software.
- All images in the documentation are provided with alternative text so that users with vision impairments can understand the contents of the images.

Navigating the Interface Using the Keyboard

Standard shortcut and accelerator keys are used by the InstallShield wizard and are documented by the operating system. Refer to the documentation provided by your operating system for more information. Using Java-based GUIs you press the Tab key to select GUI buttons. Perform the function related to the selected button by pressing:

- Enter for the default selection
- The spacebar for all other selections

Magnifying What Is Displayed on the Screen

You can enlarge information on the product windows using facilities provided by the operating systems on which the product is run. For example, in a Microsoft Windows environment, you can lower the resolution of the screen to enlarge the font sizes of the text on the screen. Refer to the documentation provided by your operating system for more information.

Appendix D. Support information

This section describes the following options for obtaining support for IBM products:

Searching knowledge bases

If you have a problem with your IBM software, you want it resolved quickly. Begin by searching the available knowledge bases to determine whether the resolution to your problem is already documented.

Search the information center on your local system or network

IBM provides extensive documentation that can be installed on your local computer or on an intranet server. You can use the search function of this information center to query conceptual information, instructions for completing tasks, reference information, and support documents.

Search the Internet

If you cannot find an answer to your question in the information center, search the Internet for the latest, most complete information that might help you resolve your problem. To search multiple Internet resources for your product, expand the product folder in the navigation frame to the left and select **Web search**. From this topic, you can search a variety of resources including:

- IBM technotes
- IBM downloads
- IBM Redbooks
- IBM developerWorks
- Forums and newsgroups
- Google

Obtaining fixes

A product fix might be available to resolve your problem. You can determine what fixes are available for your IBM software product by checking the product support Web site:

1. Go to the IBM Software Support Web site (http://www.ibm.com/software/support).
2. Under **Products A - Z**, select your product name. This opens a product-specific support site.
3. Under **Self help**, follow the link to **All Updates**, where you will find a list of fixes, fix packs, and other service updates for your product. For tips on refining your search, click **Search tips**.
4. Click the name of a fix to read the description and optionally download the fix.

To receive weekly e-mail notifications about fixes and other news about IBM products, follow these steps:

1. From the support page for any IBM product, click **My support** in the upper-right corner of the page.
2. If you have already registered, skip to the next step. If you have not registered, click register in the upper-right corner of the support page to establish your user ID and password.
3. Sign in to **My support**.
4. On the My support page, click **Edit profiles** in the left navigation pane, and scroll to **Select Mail Preferences**. Select a product family and check the appropriate boxes for the type of information you want.
5. Click **Submit**.
6. For e-mail notification for other products, repeat Steps 4 and 5.

For more information about types of fixes, see the *Software Support Handbook* (http://techsupport.services.ibm.com/guides/handbook.html).

Contacting IBM Software Support

IBM Software Support provides assistance with product defects.

Before contacting IBM Software Support, your company must have an active IBM software maintenance contract, and you must be authorized to submit problems to IBM. The type of software maintenance contract that you need depends on the type of product you have:

- For IBM distributed software products (including, but not limited to, Tivoli, Lotus, and Rational products, as well as DB2 and WebSphere products that run on Windows or UNIX operating systems), enroll in Passport Advantage in one of the following ways:
  - **Online**: Go to the Passport Advantage Web page (http://www.lotus.com/services/passport.nsf/WebDocs/ Passport_Advantage_Home) and click **How to Enroll**
  - **By phone**: For the phone number to call in your country, go to the IBM Software Support Web site (http://techsupport.services.ibm.com/guides/contacts.html) and click the name of your geographic region.
- For IBM eServer software products (including, but not limited to, DB2 and WebSphere products that run in zSeries, pSeries, and iSeries environments), you can purchase a software maintenance agreement by working directly with an IBM sales representative or an IBM Business Partner. For more information about support for eServer software products, go to the IBM Technical Support Advantage Web page (http://www.ibm.com/servers/eserver/techsupport.html).

If you are not sure what type of software maintenance contract you need, call 1-800-IBMSERV (1-800-426-7378) in the United States or, from other countries, go to the contacts page of the IBM Software Support Handbook on the Web (http://techsupport.services.ibm.com/guides/contacts.html) and click the name of your geographic region for phone numbers of people who provide support for your location.

Follow the steps in this topic to contact IBM Software Support:

1. Determine the business impact of your problem.
2. Describe your problem and gather background information.
3. Submit your problem to IBM Software Support.

Determine the business impact of your problem

When you report a problem to IBM, you are asked to supply a severity level. Therefore, you need to understand and assess the business impact of the problem you are reporting. Use the following criteria:

Severity 1	**Critical** business impact: You are unable to use the program, resulting in a critical impact on operations. This condition requires an immediate solution.
Severity 2	**Significant** business impact: The program is usable but is severely limited.
Severity 3	**Some** business impact: The program is usable with less significant features (not critical to operations) unavailable.
Severity 4	**Minimal** business impact: The problem causes little impact on operations, or a reasonable circumvention to the problem has been implemented.

Describe your problem and gather background information

When explaining a problem to IBM, be as specific as possible. Include all relevant background information so that IBM Software Support specialists can help you solve the problem efficiently. To save time, know the answers to these questions:

- What software versions were you running when the problem occurred?
- Do you have logs, traces, and messages that are related to the problem symptoms? IBM Software Support is likely to ask for this information.
- Can the problem be re-created? If so, what steps led to the failure?
- Have any changes been made to the system? (For example, hardware, operating system, networking software, and so on.)
- Are you currently using a workaround for this problem? If so, please be prepared to explain it when you report the problem.

Submit your problem to IBM Software Support

You can submit your problem in one of two ways:

- **Online**: Go to the ″Submit and track problems″ page on the IBM Software Support site (http://www.ibm.com/software/support/probsub.html). Enter your information into the appropriate problem submission tool.
- **By phone**: For the phone number to call in your country, go to the contacts page of the IBM Software Support Handbook on the Web (techsupport.services.ibm.com/guides/contacts.html) and click the name of your geographic region.

If the problem you submit is for a software defect or for missing or inaccurate documentation, IBM Software Support creates an Authorized Program Analysis Report (APAR). The APAR describes the problem in detail. Whenever possible, IBM Software Support provides a workaround for you to implement until the APAR is resolved and a fix is delivered. IBM publishes resolved APARs on the IBM product support Web pages daily, so that other users who experience the same problem can benefit from the same resolutions.

For more information about problem resolution, see Searching knowledge bases and Obtaining fixes.

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Index

Special characters

A

B

C

D

E

F

G

H

I

J

K

L

M

N

O

P

Q

R

S

T

U

V

W

X

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