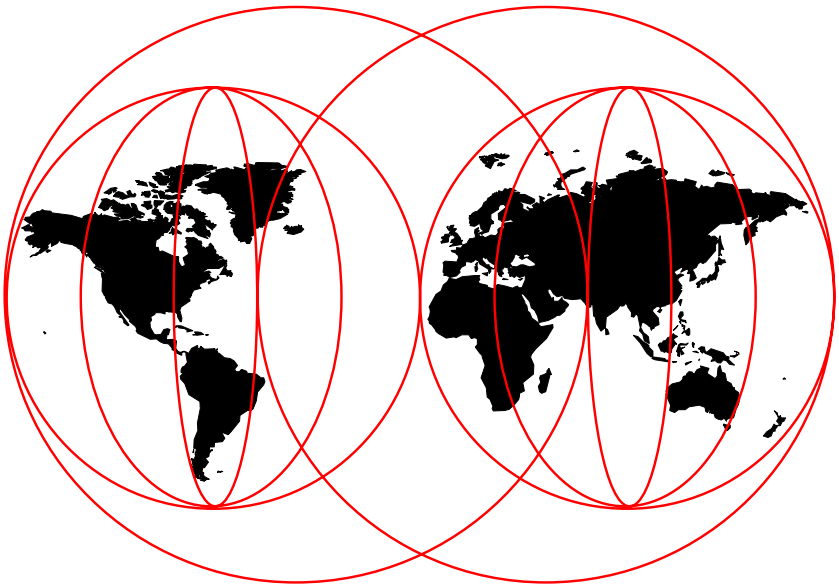

Using Tivoli Software Installation Service for Mass Installation

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International Technical Support Organization

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Using Tivoli Software Installation Service for Mass Installation

July 1998

Take Note!

Before using this information and the product it supports, be sure to read the general information in Appendix B, “Special Notices” on page 221.

First Edition (July 1998)

This edition applies to Version 3.6 of Tivoli Software Installation Service for use with the Tivoli Management Framework, products and patches at the 3.6 level.

Contents

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Preface

This redbook will help you to understand how to install Tivoli products and patches to a large number of nodes, gateways and endpoints using Tivoli Software Installation Service, Version 3.6. Many aspects of Tivoli Software Installation Service, including installation, planning, command line interface, graphical user interface, and response files, are covered.

Guidance, step-by-step directions, plus hints and tips are provided to explain how you can utilize Tivoli Software Installation Service in your Tivoli Managed Environment. Actual examples are used throughout to illustrate how you interface to Tivoli Software Installation Service and utilize the features that it provides. These examples range from installing on a new, pristine machine, as well as installing or pushing many Tivoli products and patches to many nodes, gateways and endpoints simultaneously.

Topics covered include populating the Tivoli Software Installation Service Install Repository with Tivoli products and patches, using both the Tivoli Software Installation Service graphical user interface and command line interface, building response files, working with log files, and pushing Tivoli products and patches.

The Tivoli Software Installation Service graphical user interface is used for many of the install scenarios presented in this redbook. In addition the use of response files is explored showing how their use may be quicker, easier and faster to use when you are installing large numbers of machines or products. An example shows you how to use the Tivoli Software Installation Service graphical user interface to build a response file structure that you can then use with your favorite text editor to expand into a response file that covers the complete install activity you are planning.

Tivoli Software Installation Service utilizes several log files to document progress of its install activity. These logs are looked at and explained so that, if needed, you will be able to find information about both successful, as well as failed, installations.

A working knowledge of the Tivoli Management Framework and the Tivoli Managed Environment is assumed.

The Team That Wrote This Redbook

This redbook was produced by a team of specialists from around the world working at the International Technical Support Organization, Austin Center.

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Chapter 1. Introduction

This redbook looks at Tivoli Software Installation Service Version 3.6 and how to use it. Tivoli Software Installation Service Version 1.0 was first introduced in October of 1997 and as an addition to the Tivoli Managed Environment for Tivoli Management Framework Versions 3.1 or 3.2. With the availability of Tivoli Management Framework Version 3.6, Tivoli Software Installation Service is shipped as a compoent of Tivoli Management Framework and works in conjunction with it and the rest of the Tivoli family of products at the Version 3.6 level.

The redbook assumes some familiarity with the concepts and use of the Tivoli Management Framework for enterprise network systems management, as described in "Part 1, Concepts and Architecture" of the redbook *An Introduction to Tivoli's TME 10*; SG24-4948-01.

This redbook is intended as a guide for administrators who are responsible for Tivoli implementation, and covers the following topics:

Conceptual overview of Tivoli Software Installation Service

Planning for Tivoli Software Installation Service

Installing Tivoli Software Installation Service

Using Tivoli Software Installation Service to perform mass installations

This chapter introduces Tivoli Software Installation Service, and the concept of Lightweight Client Framework in the context of using Tivoli Software Installation Service. It also summarizes the organization of this redbook to provide a quick reference to the chapters that are of interest to you.

1.1 What is Tivoli Software Installation Service?

Tivoli Software Installation Service (SIS) is an application designed for faster and easier installation of Tivoli products in a Tivoli Management Region (TMR). Tivoli Software Installation Service can push products to any supported Tivoli client, and is intended to provide increased functionality over the Tivoli Managed Environment installation process available in previous releases of Tivoli products.

Tivoli Software Installation Service can be used to perform the following functions:

- Store installation images of Tivoli products and patches in a central repository to support mass installation activities

- Create managed nodes in a Tivoli Management Region by installing the Tivoli Management Framework on machines
- Create endpoints in a Tivoli Management Region
- Create user-defined installation criteria for each product, or use the product defaults
- Install multiple machines and products in parallel
- Create and use response files allowing for unattended installations
- Tivoli Software Installation Service creates HTML-based status and log information for each installation, that can be viewed using a Web browser

With version 3.6 of Tivoli Software Installation Service you have the ability to create endpoints on existing managed nodes and PC managed nodes within the Tivoli Management Region, as well as on machines that do not have any Tivoli products installed.

1.2 What is Lightweight Client Framework

One of the focuses of this redbook is the using of Tivoli Software Installation Service for mass installations in a Tivoli Managed Environment including the use of the Lightweight Client Framework. All newer releases of Tivoli products support the Lightweight Client Framework. In this section we look at the Tivoli environment, and briefly describe how it changes with the introduction of the Lightweight Client Framework.

The redbook *An Introduction to Tivoli's TME 10*; SG24-4948-01 provides a complete overview of the Tivoli Managed Environment. In addition the redbook *An Introduction to Lightweight Client Framework*; SG24-2025-00 provides a detailed description of the Lightweight Client Framework and how it functions. You may want to refer to both of this redbook for a more in depth look at Tivoli Managed Environment and Lightweight Client Framework.

1.2.1 The Tivoli Management Region

The Tivoli Managed Environment (TME) is an object-oriented environment that is made up of:

- A Tivoli Managed Environment server and clients grouped into a region known as Tivoli Management Region.
- The Tivoli Management Framework providing a set of management services which is the base of the Tivoli Managed Environment.

- The Tivoli Management Framework database that is distributed across all systems running the Tivoli Management Framework in a Tivoli Management Region.
- Tivoli Managed Environment applications that run utilizing the Tivoli Management Framework.

The Tivoli Managed Environment provides the capability of managing multiple systems across different platforms in a network from a single location. In this environment the traditional Tivoli Management Framework structure consists of a Tivoli Management Region server machine, known as the TMR server, and client machines. These clients are represented in the TMR as objects. These objects can be of the types managed node or PC managed node, depending on the Tivoli software installed on each machine. A typical installation based on this two-layered structure can be seen in Figure 1.

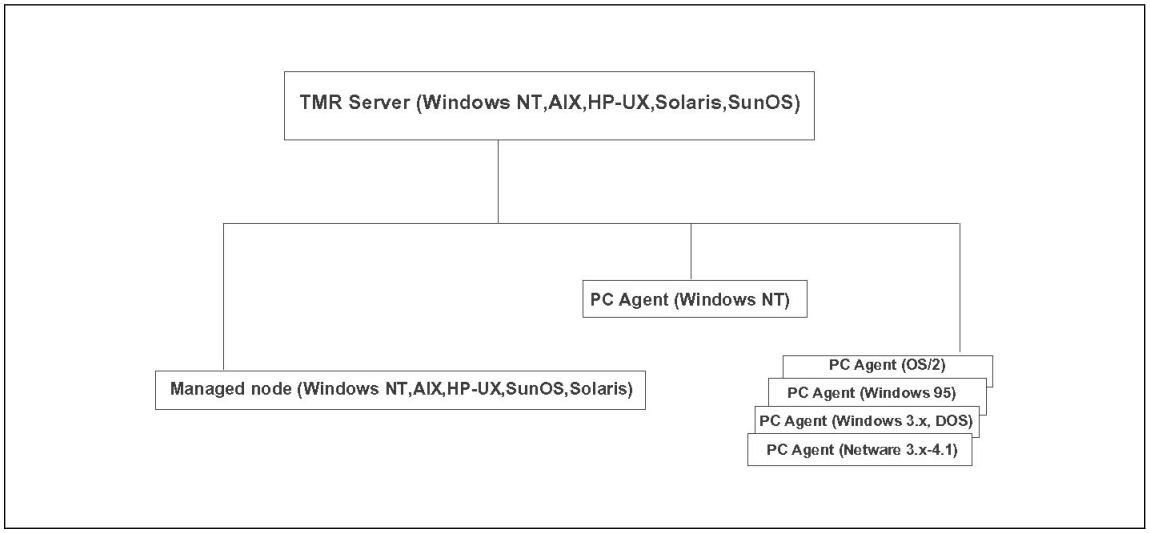

Figure 1. TME Server and TME Clients

The TMR server is a designated machine on which the Tivoli Management Framework is installed, and is automatically configured as the first managed node in the Tivoli Management Region. The Tivoli Management Framework libraries, binaries, data files and the Tivoli Managed Environment desktop are stored on this server. The TMR server maintains a database that contains management information for the resources that are created in the region. This database is updated each time an operation is performed on a TME client. The TMR server communicates with TME clients using the `oserv` process.

Managed nodes are UNIX or Windows NT machines that have the Tivoli Management Framework software installed. These Managed Nodes maintain

client databases containing information relevant to managing themselves and any PC agents they manage. These databases are integrated with the TMR server database to make up the distributed database that is used by the Tivoli Management Framework. Managed nodes communicate among themselves and with the TMR server using the oserv process.

PC agents are PCs running Tivoli software on operating systems other than Windows NT or UNIX. This Tivoli software enables each to perform a limited set of the Tivoli management functions. PC agents machines do not maintain a database, and do not use the oserv process. Each PC agent is associated with a Managed Node. This managed node handles the communications between the PC agent and the TMR server. All of the PC agents are represented as a PC managed nodes objects in the Tivoli Management Region.

1.2.2 The Lightweight Client Framework

The concept of Lightweight Client Framework (LCF) was introduced with Tivoli release 3.2. The LCF environment consists of

- Endpoints
- Endpoint gateways
- Endpoint managers

With the introduction of endpoints, the Tivoli Management Region structure becomes more multi-layered with the typical installation looking like the structure in Figure 2 on page 5. In a multi-layered approach an endpoint communicates with its assigned gateway, thereby reducing the communication load on the TMR server.

Each endpoint will typically be an end-user machine. These end users machines normally are machines that do not have the requirement to perform traditional Tivoli management functions that would be found on machines running the Tivoli managed node software.

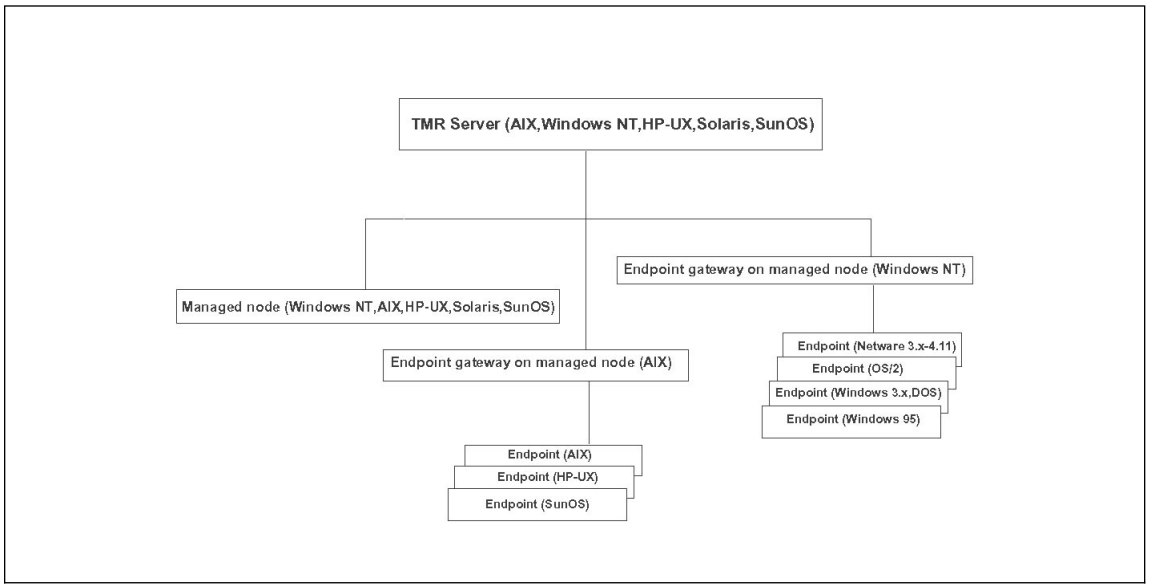

Figure 2. A TMR with Endpoints.

In the LCF environment the endpoints are systems running the Tivoli endpoint service software, a process called lcfd (lcf daemon). The endpoint software is comprised of the lcf daemon and the runtime library. These require about 2MB of disk space on each endpoint system. Even thought the endpoint software is not as large as the traditional Tivoli managed node software it still provides the capability for performing Tivoli management functions for the Tivoli environment.

This is accomplished by each endpoint running a subset of Tivoli operations called endpoint methods. The functions that can be performed by endpoints methods are:

- Sending alerts to Tivoli Enterprise Console
- Executing scheduled tasks
- Receiving profile distributions
- Running monitors for the Tivoli Software Distribution module

Endpoints can be created in a Tivoli Management Region on existing managed nodes and PC managed nodes as well as machines that have no Tivoli software installed.

Tivoli products that support LCF are able to communicate with endpoints in the Tivoli Management Region as well as those machines running the Tivoli

managed node or PC agent software. This flexible communications capability allows you to support a mixed environment either by design or during migration between the PC managed node and LCF environments.

The endpoint gateway is a managed node that runs the Tivoli endpoint gateway process, and manages the endpoints assigned to it. An endpoint gateway runs gateway methods on behalf of an endpoint, passes method executables and files onto an endpoint's disk cache, and passes the results of endpoint methods on to the calling managed node. In a small installation, the endpoint gateway can be created on the TMR server itself. A typical large installation would have one or more endpoint gateways, each having hundreds or thousands of endpoints assigned to each gateway.

The endpoint manager is created automatically on the TMR server when you install Tivoli release 3.2 or higher. The endpoint manager maintains a list of all the endpoints and endpoint gateways in the Tivoli Management Region. One of the main functions of the endpoint manager is to assign or re-assign endpoints to endpoint gateways. You can learn more about the endpoint login process in the *Tivoli Managed Environment Framework Planning and Installation Guide* Chapter 8 "TME 10 Endpoints".

The Lightweight Client Framework is an excellent solution for managing low-end systems that do not have the resources required by the Tivoli Management Framework software, while maintaining a transparent functionality of the Tivoli Management Framework for Tivoli applications. In this way the Lightweight Client Framework allows an enterprise to extend the scope of a single Tivoli Management Region to include thousands of machines which provide the same kind of functionality as managed nodes.

1.3 Benefits of SIS to the Enterprise

Tivoli Software Installation Service builds on the centralized management structure provided by the Tivoli Management Framework, and allows the administrator to easily perform the following tasks across a Tivoli Management Region from a single machine:

- Select multiple products and machines to be installed in parallel
- Import and store Tivoli product images in a central repository
- Customize installation settings to reflect a mixed-platform environment
- Perform mass creation of managed nodes and endpoints in the Tivoli Management Region

Tivoli Software Installation Service can execute these activities in a highly automated, organized and time-saving way. This can be of great benefit to the administrator and the enterprise, whether doing a single install or performing mass installation activities.

1.3.1 Parallel Push

Tivoli Software Installation Service supports the selection and setting up of multiple products and machines in a single session. Tivoli Software Installation Service can then perform the installation of these products and machines in parallel to one or hundreds of nodes across various platforms from one invocation. The number of installs that can be done simultaneously is dependent on the TMR server platform and the resources available to it.

1.3.2 Graphical User Interface

The Tivoli Software Installation Service graphical user interface (GUI) provides a user-friendly interface where an administrator can select products and machines, define prerequisites, initiate the install process, as well as create template response files for unattended installations. The graphical user interface, through the use of simple dialog boxes, provides all of the options that systematically leads the administrator through the steps required to complete each task. The Tivoli Software Installation Service graphical user interface makes it easier for an administrator to understand and exploit the functions provided by Tivoli Software Installation Service.

1.3.3 GUI start - Response File Build - GUI Execute

The Tivoli Software Installation Service graphical user interface can be used as the starting point for creating response file templates. These can be exported to ASCII text files that can then be edited with your favorite text editor to build all the required information for a complete mass installation of Tivoli products to as many machines as you desire. This updated response file can then be imported back into the Tivoli Software Installation Service GUI for invocation of the installation activity. For large number of products and machines, this approach may be easier and faster for you than the use of the GUI to completely build the install matrix of products and machines. By using the GUI to start the response file construction you will find it is both easier and less prone to errors than building response files completely from scratch.

1.3.4 Setting and Keeping Product Defaults within GUI

The Tivoli Software Installation Service GUI allows the administrator to add and store customized product prerequisites, that are defined using shell scripts. In addition, product defaults, like install directory paths, can be tailored for each platform. This feature enables an administrator to install across

multiple platforms in one installation session, and to standardize platform-specific product configurations across the Tivoli Management Region.

1.3.5 Finding IP Address of Machine

Tivoli Software Installation Service can use a machine's hostname to find the machine's IP address, contact the machine and determine the machine's platform type. This feature is very useful when creating new managed nodes and endpoints in a Tivoli Management Region. An administrator can simply add a machine for installation without having to physically verify its connectivity, location and operating system before-hand.

1.4 How to Use This Book

This section describes the rest of this redbook and how to utilize the information contained in the redbook to help you in implementing and using Tivoli Software Installation Service in your organization.

Chapter 2, “Concepts” on page 11 provides an overview of Tivoli Software Installation Service and how you may use Tivoli Software Installation Service in your Tivoli Managed Environment.

Chapter 3, “Planning for Tivoli Software Installation Service” on page 17 covers the planning for implementation of a Tivoli Software Installation Service environment, including how to plan and set up the pre-requisite Tivoli Management Region environment for Tivoli Software Installation Service.

Chapter 4, “Setting Up Tivoli Software Installation Service” on page 25 lists the steps required to set up the Tivoli Software Installation Service environment, including how to install the Tivoli Software Installation Service server and create the repository that Tivoli Software Installation Service uses for storing product and machine information.

Chapter 5, “Using Tivoli Software Installation Service” on page 55 describes in detail how to use Tivoli Software Installation Service for creating managed nodes and endpoints on different platforms. The use of response files to perform unattended installations is also discussed with examples.

Chapter 7, “Tivoli Software Installation Service Logs” on page 167 describes the logs created by Tivoli Software Installation Service, and how you can use them to identify problem areas during installations. The chapter also provides suggestions on the maintenance of these files.

Chapter 8, “Tracking Inventory when Using Tivoli Software Installation Service” on page 193 shows you how to use Tivoli Software Installation Service to

investigate the inventory of products that are installed on machines within your Tivoli Management Region.

Chapter 9, “Experiences with Tivoli Software Installation Service” on page 203 is filled with useful and practical information about Tivoli Software Installation Service. This information is based on our hands-on experience with Tivoli Software Installation Service, and contains helpful hints and tips for situations that you may encounter while using Tivoli Software Installation Service.

Chapter 2. Concepts

This chapter discusses the parts of Tivoli Software Installation Service, how it interfaces with the Tivoli Management Region, and how the Tivoli Software Installation Service fits into the Tivoli structure

2.1 Parts of Tivoli Software Installation Service

Tivoli Software Installation Service can be logically looked at as having two components. They are:

1. The Tivoli Software Installation Service server
2. The Install Repository

2.1.1 Tivoli Software Installation Service Server

The Tivoli Software Installation Service server is either a TMR server or a Managed Node that has the Tivoli Software Installation Service product installed on it. Using either the graphical user interface or the command line interface you can invoke the Tivoli Software Installation Service product which runs on this SIS server.

Whether invoked on a TMR server or a Managed Node Tivoli Software Installation Service runs as a separate product from the TMR Framework, and, as such, has to synchronize with the TMR server. To maintain this synchronization, Tivoli Software Installation Service re-synchronizes with the TMR server upon every invocation. In addition, the administrator can request a re-synchronization at any time from the SIS main dialog of the graphical user interface.

The Tivoli Software Installation Service graphical user interface can be started from any Tivoli Desktop, allowing you to select the machines along with the Tivoli products you want to install on those machines. You can then initiate the installation of all the selected products on those machines with the selection of a single button. An advantage of using Tivoli Software Installation Service is that you can select multiple Tivoli products for one or more machines and then, in a single stroke, request Tivoli Software Installation Service to push them all in parallel.

2.1.2 The Install Repository

The Install Repository (IR) is the component of Tivoli Software Installation Service which stores the image of all the Tivoli products. The Install Repository is a directory structure that resides on the machine where SIS is installed.

The Tivoli Software Installation Service server allows you to import Tivoli products available on CD-ROM as install image onto the repository. Tivoli Software Installation Service then uses the images of these Tivoli products from the repository and distributes them to all the Tivoli clients or endpoints as per your requests.

The Tivoli Software Installation Service server also provides the facility of sharing an Installation Repository across multiple TMRs. This is referred to as a Shared Install Repository.

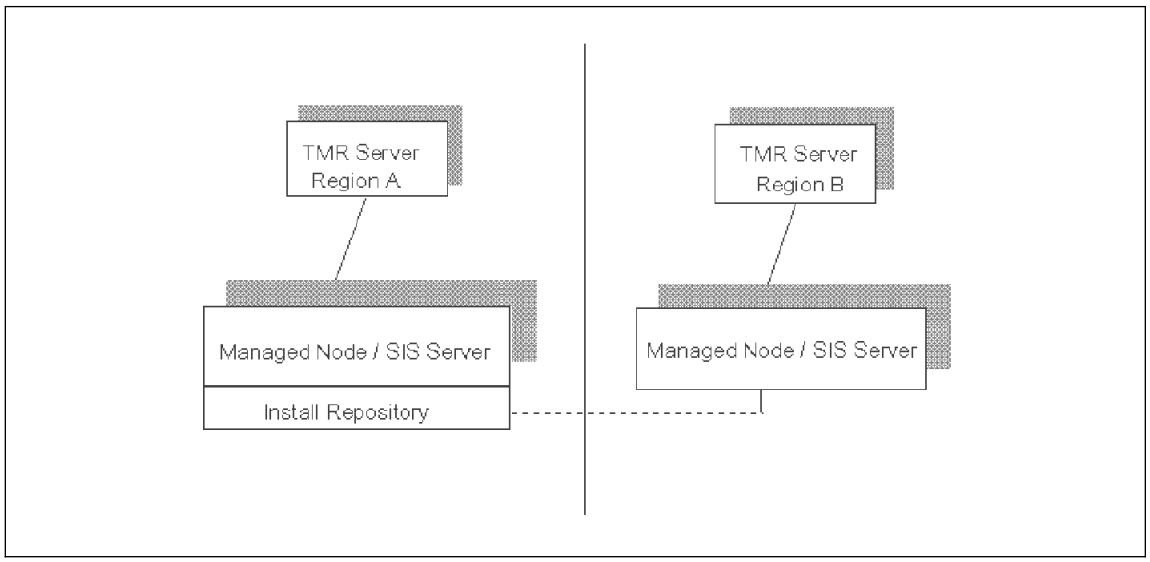

Figure 3. Shared Install Repository

Figure 3 shows two Tivoli regions, Region A and Region B. Region A and Region B have their own Software Installation Service servers. The Software Installation Service server in Region B uses the Install Repository from the Software Installation Service server in Region A.

Using a Shared Install Repository means it is not necessary to install all the Tivoli product images on all the Software Installation Service servers in all of your Tivoli Management Regions. Instead, you can install the Tivoli products on only one of the Software Installation Service servers and allow other Software Installation Service servers to use this repository. This conserves disk space and your time for loading products into the repository.

2.2 Interfaces into Tivoli

Once Tivoli Software Installation Service is installed it can be activated from the Tivoli Desktop. Although the Tivoli Software Installation Service is a product independent of the Tivoli Desktop, it synchronizes with the TMR and updates its database accordingly.

The Tivoli Software Installation Service recognizes the Managed Nodes, PC Managed Nodes, Endpoints and Policy Regions on the TMR by synchronizing itself with the TMR server whenever Software Installation Service is started. This information is cached and used for as long as this Software Installation Service session is active. During this session, if any new nodes are created in the Tivoli Management Region using traditional Tivoli Management Framework methods, information about these nodes is not automatically updated in the cache on the SIS server. Tivoli Software Installation Service has to be synchronized again with the TMR server to update its cache and recognize these changes.

Tivoli Software Installation Service fits into the Tivoli structure by providing an enhanced and easy way of installing endpoints as well as other Tivoli products. The facilities provided by Tivoli Software Installation Service are scalable from the single installation up to mass installations. Tivoli Software Installation Service provides a graphical view of all the machines in the Tivoli Management Region and the products imported onto the repository. It gives a worksheet view of this information that is helpful in tracking the inventory of Tivoli products installed in all the machines in the region.

2.3 Tivoli Software Installation Service Server

The Tivoli Software Installation Service server can run either on the TMR server or on a Managed Node. But, there can be only one Tivoli Software Installation Service running in the Tivoli Management Region.

2.3.1 Running Tivoli Software Installation Service from the Tivoli Management Region

Figure 4 on page 14 shows the SIS server running on the Tivoli server. By default, the TMR server is running other Tivoli applications like Remote Control Server, Distributed Monitoring and Inventory. Installing Tivoli Software Installation Service on the TMR server can affect the performance of other Tivoli applications since Tivoli Software Installation Service can use a lot of resources during peek installation periods. Hence, it is not advisable to have Tivoli Software Installation Service installed on the TMR server.

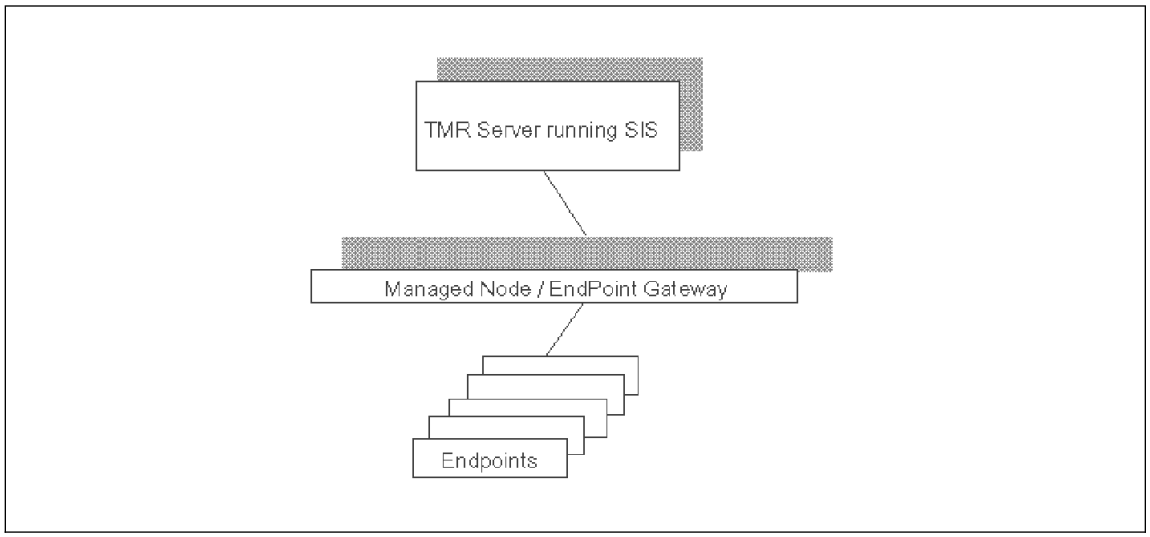

Figure 4. SIS Installed on a TMR Server

2.3.2 Running Tivoli Software Installation Service from a Managed Node

Figure 5 shows the SIS server running on a separate Managed Node. In this region the Endpoint Gateway is running on another separate Managed Node as well.

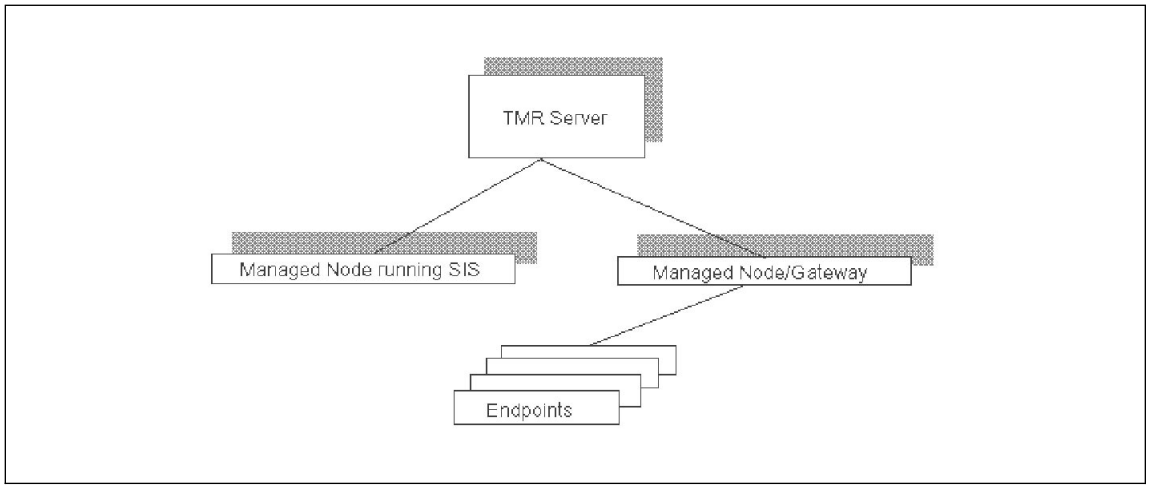

Figure 5. SIS Installed on a Managed Node

If the SIS server is installed on a managed node and this managed node is dedicated to running only Tivoli Software Installation Service, then the

performance of SIS can be improved. Also you are relieving the TMR server from other workloads so that it can better perform its normal operations.

Although the Endpoint Gateway can run on the SIS server, it is advisable to have the Endpoint Gateway on a separate Managed Node from the Managed Node running Tivoli Software Installation Service. This allows the performance of SIS and the gateway to not impact each other. In addition, this allows the SIS server to not be affected by the other managed node operations.

Chapter 3. Planning for Tivoli Software Installation Service

This chapter describes the main steps required in setting up a Tivoli environment to a point that will allow for the installation and use of Tivoli Software Installation Service. The topics addressed in this chapter include:

- Planning your Tivoli environment
- Software and operating system requirements
- Hardware considerations
- Installing your Tivoli Management Region
- Installing your first Managed Node

3.1 Planning Activities

It is strongly suggested that any Tivoli installation be carefully planned. Some critical factors to consider when planning your installation are:

- The hardware profiles of the machines on which Tivoli applications are to be installed
- The operating system of these machines
- Required system resources on these machines
- Software prerequisites (operating system fixes, Tivoli patches, and so on)
- Network topology and communications devices

Tivoli has a minimum set of hardware, operating systems and systems resource requirements. These requirements vary depending on the roles that the various machines will play in the Tivoli environment.

Before starting any Tivoli implementation, it is strongly recommended that you read and understand the *Tivoli Framework Planning and Installation Guide*. This document provides a comprehensive description of the Tivoli Framework and gives guidance in planning your Tivoli installation.

One of the major requirements of the machine that you will install Tivoli Software Installation Service on is that it should have sufficient disk capacity to hold the images of the software that Tivoli Software Installation Service will be pushing and installing. For some guidance on calculating the amount of disk capacity required, refer to Section 3.3.3, “Install Repository Space Requirements” on page 20.

3.2 Software Prerequisites

In order to install and use Tivoli Software Installation Service in your environment, you need to have the following installed:

- A TMR server.
- At least one Managed Node. The Tivoli Software Installation Service can be installed on the TMR server. For performance reasons, it is preferable to install the Tivoli Software Installation Service software on a Managed Node versus installing it on the TMR server.
- BASH.EXE, Version 11 (included in Tivoli Management Framework 3.6, 3.2 and 3.2.1, but not in Tivoli Management Framework 3.1).

Tivoli Software Installation Service requires a Java Virtual Machine to run and is only supported on the following platforms:

- AIX 4.1.4, 4.1.5, 4.2 and 4.2.1
- HP/UX 10.20
- Solaris 2.4, 2.5, 2.5.1 and 2.6
- Windows NT 4.0 with Service Pack 2 and 3

NOTE

Although Tivoli Software Installation Service is only supported on the above listed operating systems, you can use Tivoli Software Installation Service to push files to any supported Tivoli operating system including:

- Windows 3.1, Windows 95, and Windows NT 3.5.1
- OS/2
- AIX 3.x, 4.1.3 or lower
- HPUX 9.x and 10.1x
- SunOS 4.x

For more detailed information on specific platform requirements, refer to the *Tivoli Software Installation Service Release Notes*.

3.3 Hardware Considerations

This section describes some additional hardware requirements for the installation of Tivoli Software Installation Service over and above the minimum hardware requirements for installing a Managed Node. Detailed minimum

hardware requirements for the creation of a Managed Node can be found in *Tivoli Framework Planning and Installation Guide*.

3.3.1 Hard Disk Space Requirements

Table 1 lists the estimated disk space required for the installation of Tivoli Software Installation Service binaries, server database, client DB, manual pages and the default Install Repository on platforms that support Tivoli Software Installation Service.

Table 1. Tivoli Software Installation Service Capacity Requirements

Platform	Bin	Server DB	Client DB	Man Pages	Default IR Directory
AIX	20 MB	10 KB	10 KB	20 KB	20 MB
HP-UX 10.2x	14 MB	10 KB	10 KB	20 KB	20 MB
Solaris	13 MB	10 KB	10 KB	20 KB	20 MB
Windows NT	9 MB	10 KB	10 KB	N/A	20 MB

The actual size of the Install Repository will depend on the Tivoli products that will be loaded into this repository. Refer to Section 3.3.3, “Install Repository Space Requirements” on page 20 for more information on how to calculate the amount of space you should reserve for your Install Repository.

NOTE

There is no parameter that you can configure to set the size of the Install Repository. The only requirement is that you must ensure that there is sufficient space available on the drive where the Install Repository is installed.

3.3.2 Memory Requirements

Table 2 on page 20 shows the minimum memory requirements for Tivoli Software Installation Service to run on UNIX and Windows NT machines configured as either a TMR server or as a Managed Node.

Table 2. Tivoli Software Installation Service Memory Requirements

Platform	TMR server	Managed Node (with Desktop)
AIX	64 MB	64 MB
HP-UX 10.2x	128 MB	128 MB
Solaris	64 MB	64 MB
Windows NT	64 MB	64 MB

In addition to physical memory, a general rule of thumb is that the swap file be at least twice the size of the physical memory on the machines running Tivoli software. For example, if you are running Tivoli on a Windows NT Managed Node with 128 MB of memory, the swap file should be configured to be at least 256 MB.

3.3.3 Install Repository Space Requirements

In this section, a methodology will be presented that you can follow to estimate the space you should have available for the Install Repository.

Tivoli Software Installation Service creates an Install Repository to store Tivoli products and patches. This Install Repository needs to be populated before any products become available to Tivoli Software Installation Service for installation on Tivoli clients. The more products you import into the Install Repository, the more hard disk space you will need.

It is impossible to recommend the proper size of your Install Repository because there is no standard set of products that are installed in every Tivoli installation. Some institutions may only use a few of the Tivoli products and other institutions may use all the Tivoli products. Besides making sure you have sufficient space for your initial setup of the Install Repository, you will also need to leave space for new Tivoli products and patches that will become available in the future.

When the Tivoli Software Installation Service product has been installed, and the path to the Install Repository has been configured, there is no facility provided by Tivoli Software Installation Service that allows you to move the Install Repository or change the path to the Install Repository. For details on how to manually change the path of the Install Repository, or how to relocate the Install Repository, refer to Section 9.12, “Rebuilding the Install Repository” on page 218.

If your Install Repository runs out of disk space, you will not be able to import any more products. At the time of writing this redbook, there is no product delete capability provided by Tivoli Software Installation Service and for this reason it is highly recommended that you ensure there is adequate free space available on the hard disk where the Install Repository is configured. For details on how to manually remove products from the Install Repository, refer to Section 9.9, “Removing a Product from the Install Repository” on page 215. A good rule of thumb is to have at least two to three times the amount of disk space available for the Install Repository as initially calculated. At today's current technology prices, it could be less costly to have extra disk space set aside for the repository than go through the expense of relocating your Install Repository.

Table 3 lists a few of the Tivoli components and products that would typically be imported into an Install Repository. This table also lists the space requirements of each of these products on Windows NT and AIX platforms.

Table 3. Tivoli Product Hard Disk Space Requirements

Platform	Framework 3.2	Framework 3.2.1 Patch	R/C Server	R/C Controller (Managed Node)	R/C Target (PC Managed Node)
Windows NT	33 MB	30 MB	2 MB	3 MB	5 MB
AIX	40 MB	35 MB	6 MB	N/A	N/A

To calculate the hard disk space required for your Install Repository, you will need to know what products you will be importing into the Install Repository. When this has been decided, you should total all the product sizes, add the initial space required by the Install Repository (20 MB), and multiply this by an expansion factor (for example, 3). This should give you a good idea of the minimum space required for your Install Repository.

For example, using the information in Table 3, and assuming that these products will be imported into your Install Repository, you can calculate your hard disk requirements.

First, add the sizes of all the products together and include the 20 MB initial requirement. If all the products listed in Table 3 for both platforms were added into the Install Repository, the amount of space required would be 174 MB (including the Install Repository initial requirement of 20 MB). This is the

actual disk space that will be used to hold the initial load of these products into your Install Repository.

Second, to allow for additional space for future patches and new versions of the software that may be released, multiply the actual required space by an expansion factor. If the recommended expansion factor of 3 is used, the resulting space of at least 522 MB space should be available on the hard disk where the Install Repository will be installed.

Remember that having too much space in the Install Repository is better than running out of space.

3.4 Installing Tivoli Management Region

The machine used as a TMR server is the core of your Tivoli installation. It should be a high performance machine, dedicated to being a TMR server. The type of machine to choose as a TMR server depends on the complexity and size of the environment that it is going to manage.

Remember that a single TMR server can manage up to 200 Managed Nodes. Each of these Managed Nodes can be installed as an Endpoint Gateway and is capable of supporting communications with thousands of Endpoints. If your environment is very large, you can set up more than one TMR server and have connections between these regions. This gives you the ability to scale your environment and allow for unlimited growth.

When creating your TMR server (installing the Tivoli framework software for the first time), the following features are installed:

- ***Graphical User Interface (GUI)*** - The Tivoli desktop that allows Administrators to view and control Tivoli. (If your TMR is installed on a Windows NT machine, the Tivoli desktop must be installed manually as described in Chapter 8.1.2.2, of the redbook *An Introduction to Tivoli's TME 10*, SG24-4948-01.
- ***Command Line Interface (CLI)*** - This is used to run commands to view and control the Tivoli environment.
- ***Oserv Daemon*** - The service that coordinates the communication within the Tivoli environment.
- ***Databases*** - The storage for information about objects in the Tivoli environment.
- ***Application Services*** - The core Tivoli capabilities and services that are needed by other Tivoli applications.

- ***Installation*** - The component used for the installation of Tivoli components and applications. (This is the component that Tivoli Software Installation Service will enhance).

Detailed instructions on how to install and configure a TMR server on an AIX or Windows NT machine can be found in Chapter 8.1.2 of redbook *An Introduction to Tivoli TME 10*, SG24-4948-01.

3.5 Creating a Managed Node

After installing your TMR server, you need to create a Managed Node on which the Tivoli Software Installation Service software can be installed. For performance reasons, it is recommended that you install Tivoli Software Installation Service on a Managed Node rather than installing it on your TMR server.

A further recommendation is to have this Managed Node dedicated to Tivoli Software Installation Service. If in your installation it is not possible to have a Managed Node dedicated to Tivoli Software Installation Service, you can run Tivoli Software Installation Service on a Managed Node that is performing other Tivoli administration functions. However, it is recommended when installing Tivoli products using Tivoli Software Installation Service, that you minimize the use of the other Tivoli administrative functions until the installation is complete.

Detailed instructions on how to install and configure a Managed Node can be found in Chapter 8.1.3, of redbook *An Introduction to Tivoli's TME 10,* SG24-4948-01.

Chapter 4. Setting Up Tivoli Software Installation Service

This chapter provides guidance on how to setup a Tivoli Software Installation Service server, how to synchronize with the TMR server and how to populate the Install Repository. Before you install your Tivoli Software Installation Service server you first need to have your TMR server operational. Detail information on the TMR server installation procedure can be found in *Framework Installation and Planning Guide*, SC31-8432. You may wish to refer to this guide for details on installing your TMR server.

4.1 Installation of Tivoli Software Installation Service

The Tivoli Software Installation Service server can run on AIX, HP-UX, Solaris and Windows NT platforms. Once you install the TMR server on any of these platforms the installation procedure for Tivoli Software Installation Service is identical for all platforms.

Tivoli Software Installation Service is installed from the Tivoli desktop graphical user interface using traditional framework methods. Start the TMR server and the Tivoli desktop, if they are not already running. Figure 6 on page 26 shows the Tivoli desktop for a TMR server.

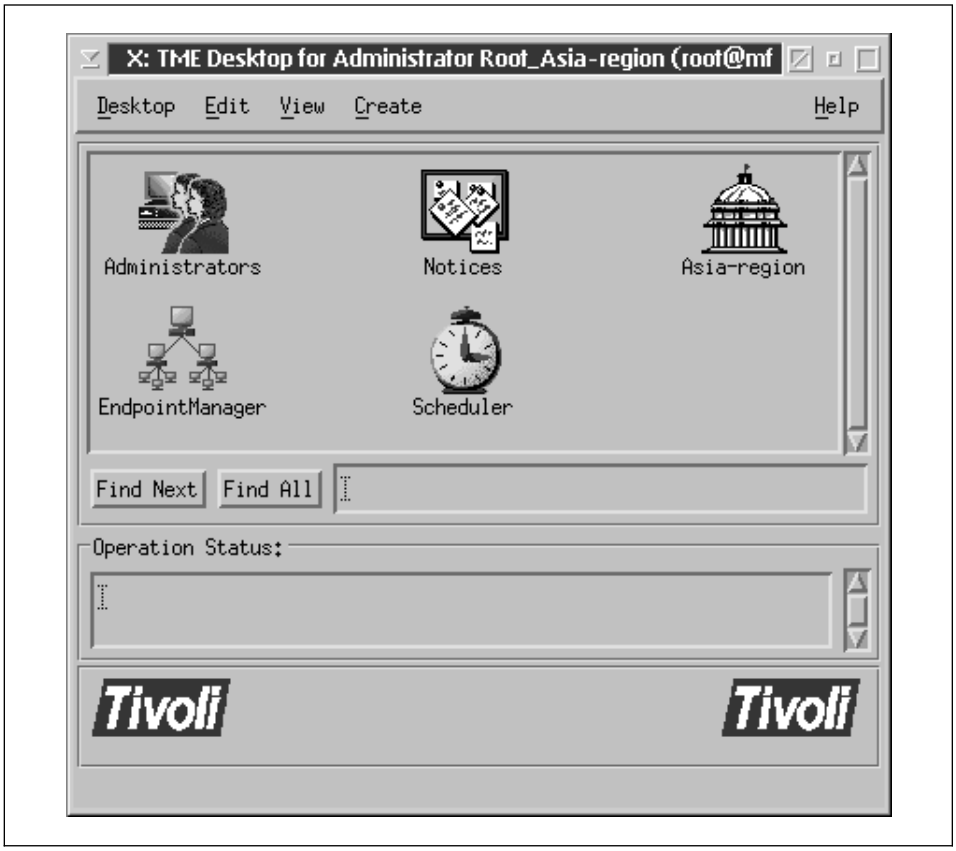

Figure 6. TME Desktop

This section gives the step by step procedure that you can follow to install Tivoli Software Installation Service from the Tivoli desktop.

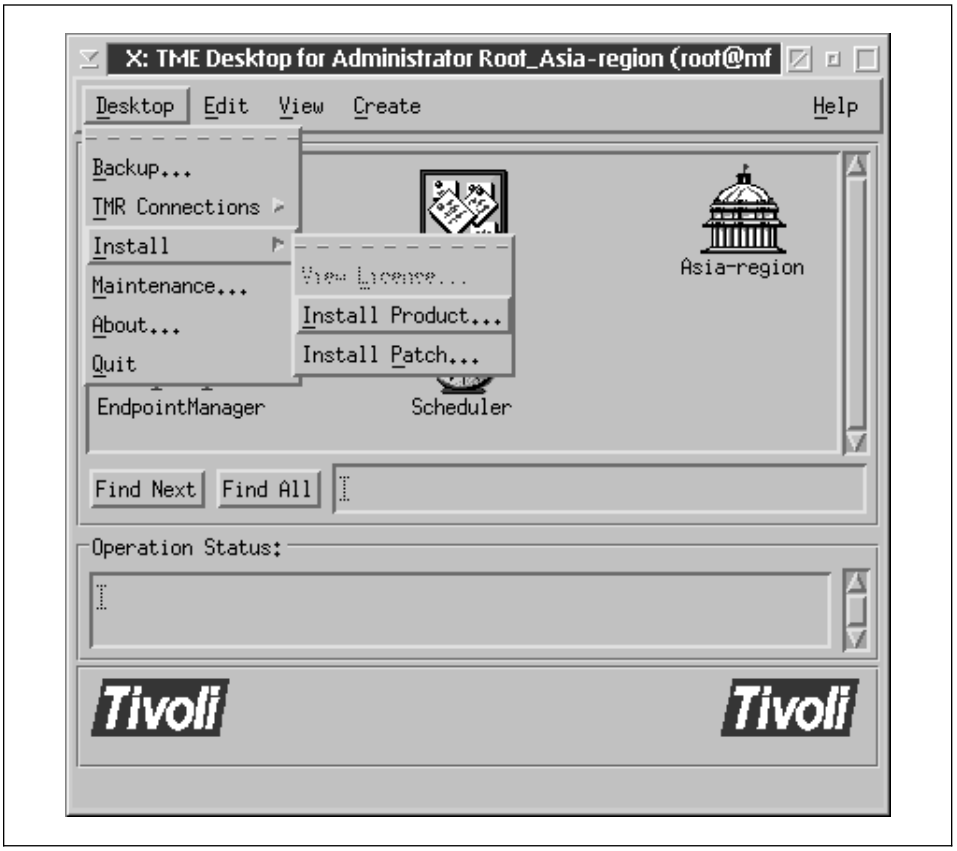

Figure 7. Desktop Pull-Down Menu

1. Open the pull-down menu using **Desktop** from the action bar of the TMR server desktop. From the **Desktop** pull down menu select **Install --> Install Product...** as shown in Figure 7. This opens the Install Product dialog shown in Figure 8 on page 28.

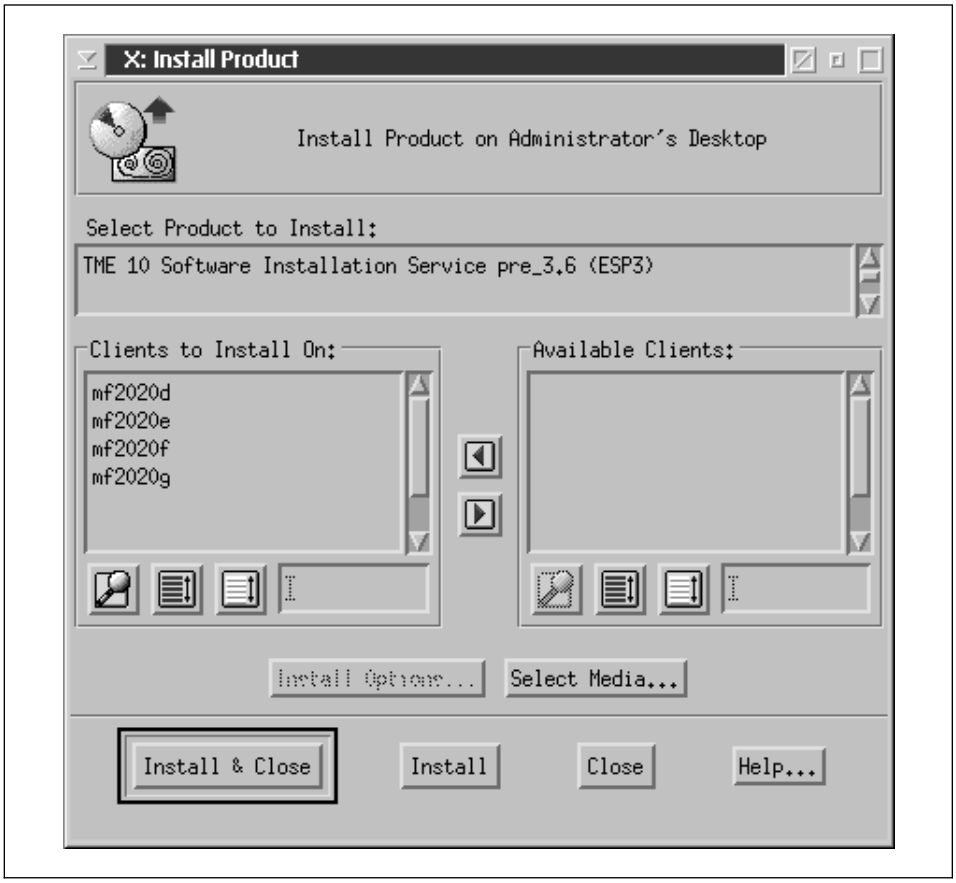

Figure 8. Install Product Dialog Showing SIS

The Install Product dialog shown in Figure 8 prompts you for information about the Tivoli product you want to install.

If Tivoli Software Installation Service is listed in the Select Product to Install: scroll-down list box as shown in Figure 8, then the Install Product service has located the install images for Tivoli Software Installation Service and you can proceed to step 2 on page 31.

If the Select Product to Install: scroll-down list box is empty as shown in Figure 9 on page 29 then the Install Product service has not correctly located the Tivoli Software Installation Service install files. To locate the Tivoli Software Installation Service install files select the **Select Media...** button on the Install Product dialog shown in Figure 9 on page 29. This takes you to the File Browser dialog shown in Figure 10 on page 30.

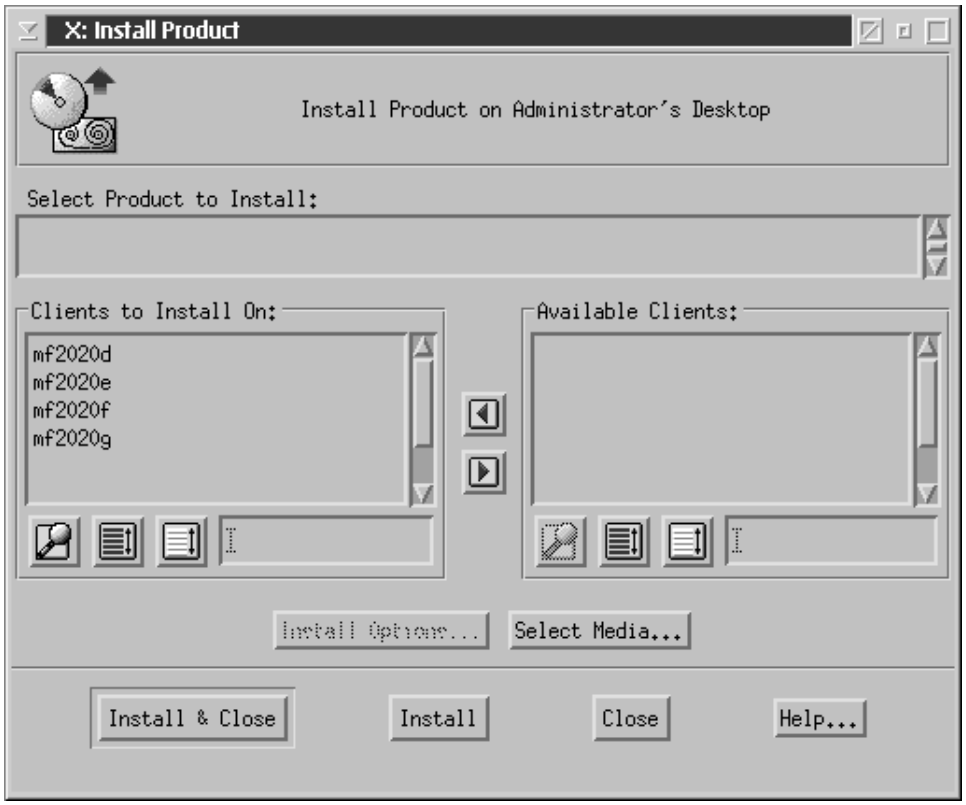

Figure 9. Install Product Dialog with No Products Shown

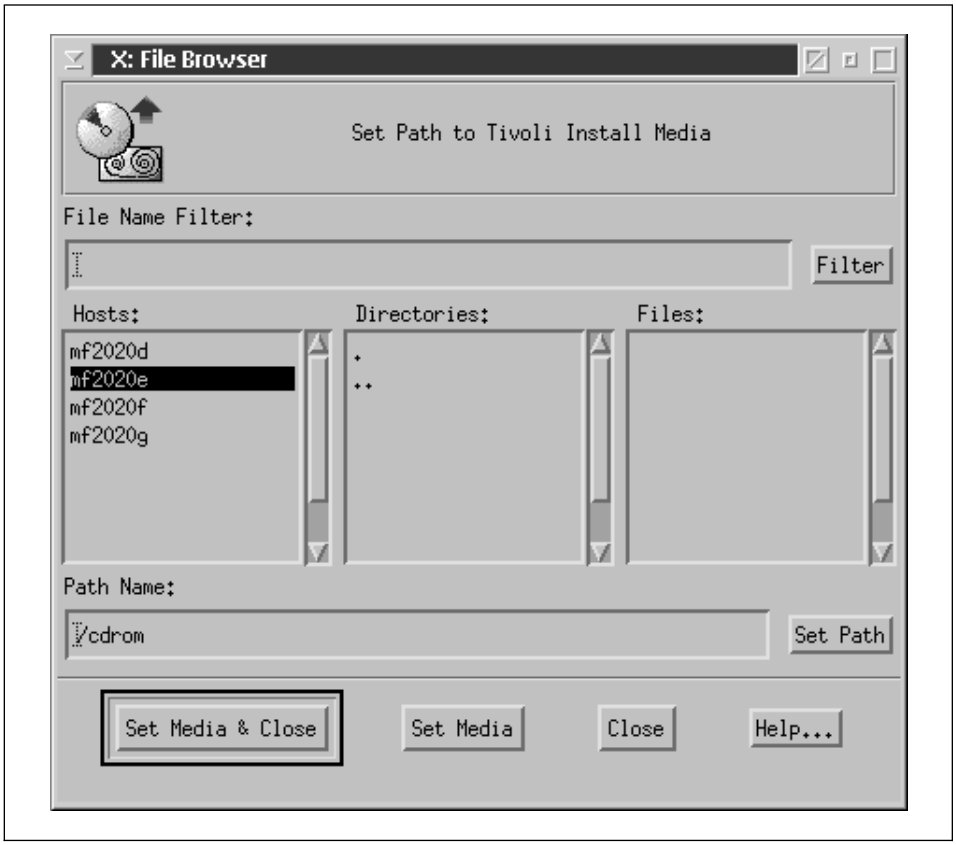

Figure 10. File Browser Dialog

The File Browser dialog enables you to specify the path to where the install files for Tivoli Software Installation Service are located by performing the following actions:

a. From the Hosts: scrolling list, select the host on which the install files are located. Normally you are installing from a CD-ROM so you need to specify where it is mounted. In the example shown in Figure 10, mf2020e is selected.

b. Enter the fully qualified path to the install files in the Path Name: field. For example, if the Tivoli Software Installation Service install files are on the directory or file system cdrom, enter /CDROM in the Path Name: field.

c. Select the **Set Path** button to change to the specified directory.

d. Select the **Set Media & Close** button to save the new media path and return to the Install Product dialog shown in Figure 8 on page 28.

The Install Product dialog now contains TME 10 Software Installation Service pre_3.6 (ESP3) in the Select Product to Install: scroll- down list box as shown in Figure 8 on page 28, indicating that the Install Product service has located the Tivoli Software Installation Service install files.

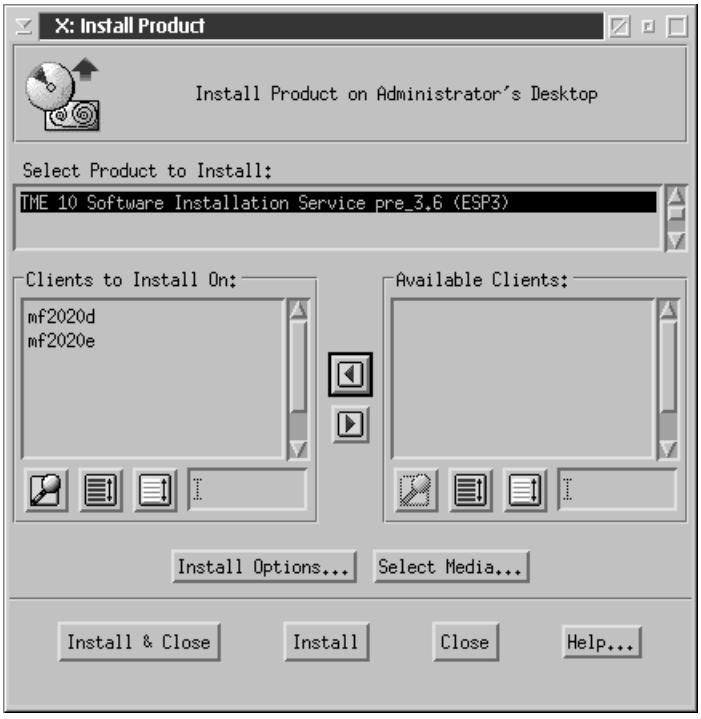

Figure 11. Install Product Dialog with SIS Selected

2. To setup Tivoli Software Installation Service for install select **TME10 Software Installation Service pre_3.6 (ESP3)** from the scroll-down list box as shown in Figure 11 then select **Install Options...**.

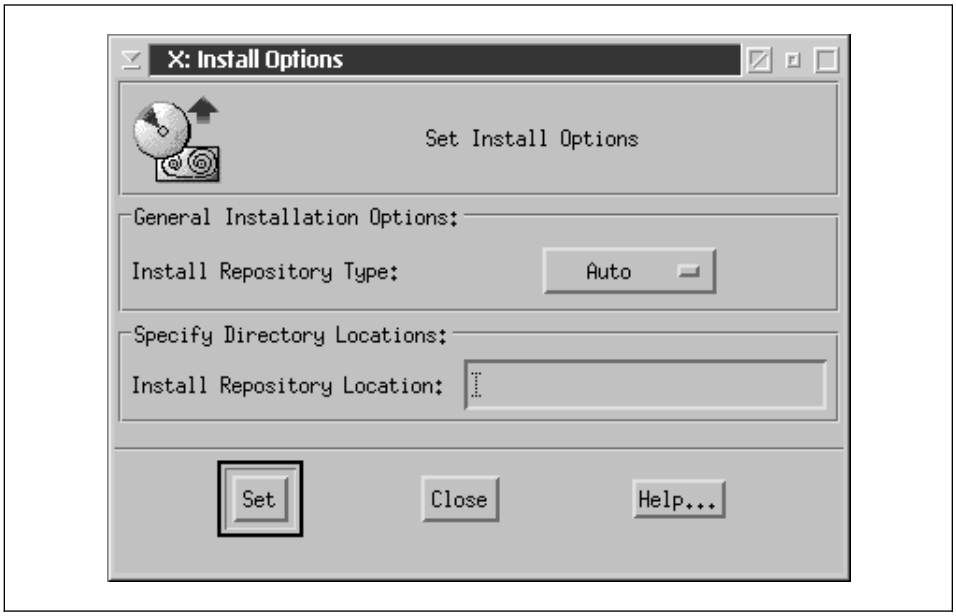

Figure 12. Install Options Dialog

3. You are presented with the Install Options dialog shown in Figure 12. You need to perform the following actions in this dialog:

   a. Specify the type of Install Repository you will be using. From the the General Installation Options: click on the default type **Auto** to open the pull down list as shown in Figure 13 on page 33. From the pull-down list select the type of repository you are using. The following are the types of Install Repository you can have:

      Non-Shared
      This does not allow you to share this repository with Tivoli Software Installation Service running in any other Tivoli Management Region.

      Read-Only This allows Tivoli Software Installation Service running in other Tivoli Management Regions to read the products from this region's repository but will not allow then to import Tivoli products onto this region's repository.

      Shared This allows the repository to be shared by Tivoli Software Installation Service running in other Tivoli Management Regions for both reading as well as importing Tivoli products onto this repository.

Auto This specifies that the repository is initially non-shared. But if the repository is ever accessed by Tivoli Software Installation Service running is another Tivoli Management Region then the type of this repository will be changed to shared.

The default and recommended choice is **Auto**. This allows your Install Repository to be shared if required.

Note

For more information on using a Shared Install Repository refer to Section 9.4, “Using Shared Install Repository” on page 205.

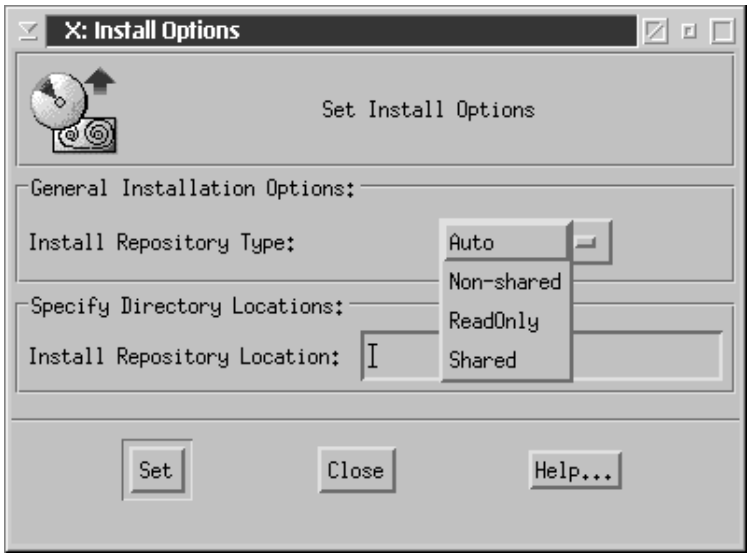

Figure 13. Install Options Showing Install Repository Types

b. You need to specify the path where your Install Repository is to be located in the Install Repository Location: field of the Specify Directory Locations: area of the Install Options dialog. In the example shown in Figure 14 on page 34 the location of the repository is set to `/ir`. The directory specified is created during the installation process and some Tivoli product images contained on the CD-ROM are imported into it.

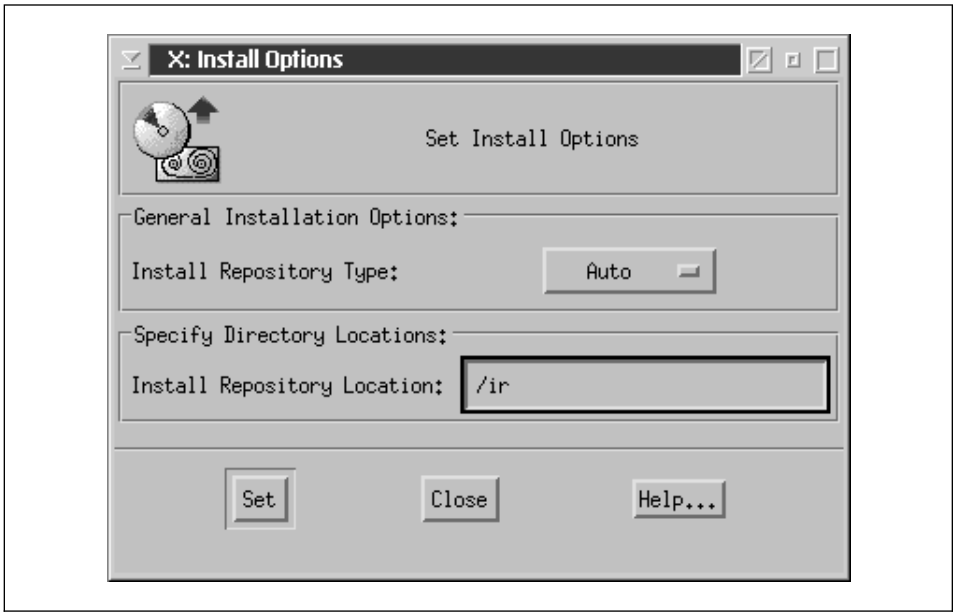

Figure 14. Install Options Dialog with Install Repository Path

c. When you have completed entering the information in the Install Options dialog, then select the **Set** button to save the information and return back to the Install Product dialog shown in Figure 15 on page 35.

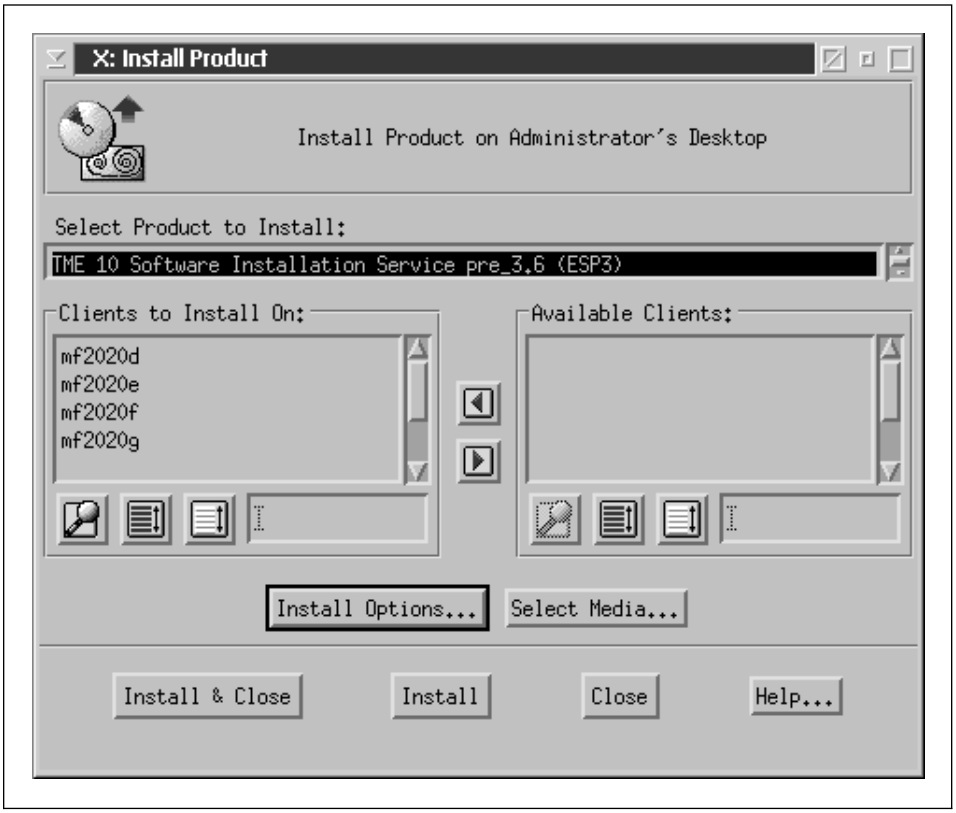

Figure 15. Install Products Dialog with SIS Selected

4. Select the TMR server or Managed Node where you want to install Tivoli Software Installation Service. Do this by moving the clients that you are not going to install Tivoli Software Installation Service on from the Clients to Install On: scroll-down list box to the Available Clients: scroll-down list box. This can be accomplished by selecting the clients and pressing the right arrow button. Use the arrow buttons between the Clients to Install On: and Available Clients: scroll down list boxes to get the TMR Server or Managed Node where you want to install Tivoli Software Installation Service in the Clients to Install On: scroll- down list box and all the other machines in the Available Clients: scroll-down list box.

   In the example shown in Figure 16 on page 36 the clients mf2020f, mf2020d and mf2020g have been moved to the Available Clients: scroll-down list box leaving only the one machine mf2020e in the Clients to Install On: scroll-down list box. You only need to install Tivoli Software Installation Service on one machine in the Tivoli Management Region.

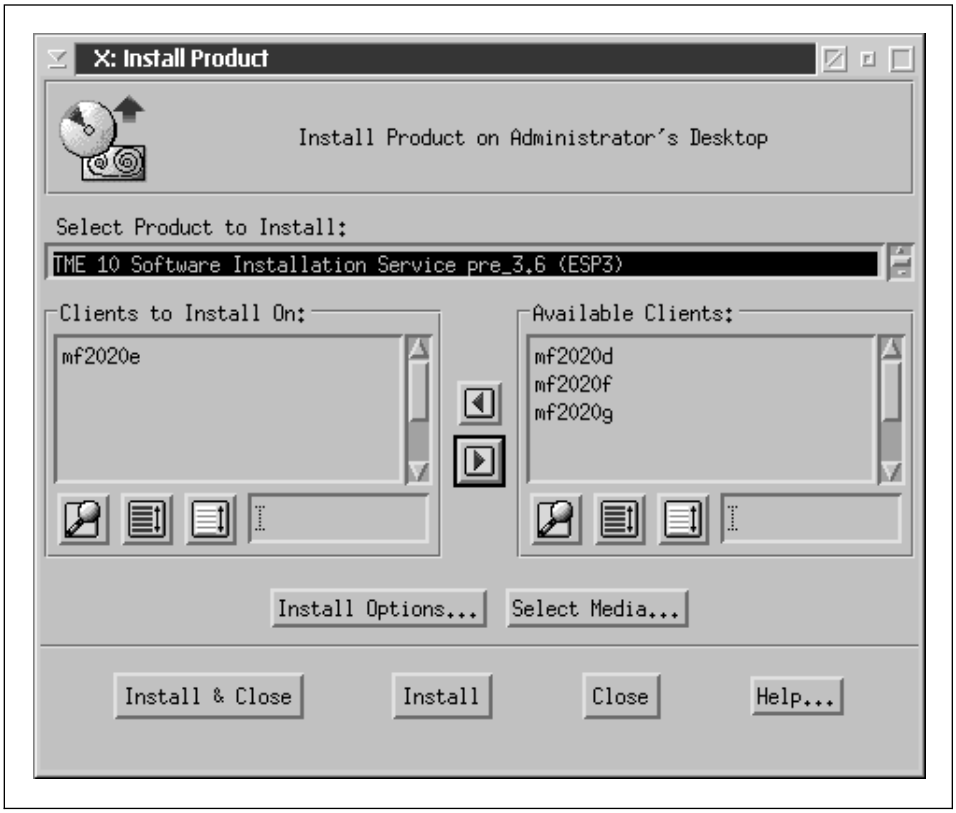

Figure 16. Install Product Dialog with Client to Install SIS on Selected

5. When you have selected the client where you want Tivoli Software Installation Service installed select the **Install and Close** button to start the installation of Tivoli Software Installation Service and close the Install Product dialog.

   The Product Install dialog shown in Figure 17 on page 37 is displayed giving you information about the install you have selected. This dialog lists the operations that take place when installing the software and any problems that you may want to correct before continuing the installation.

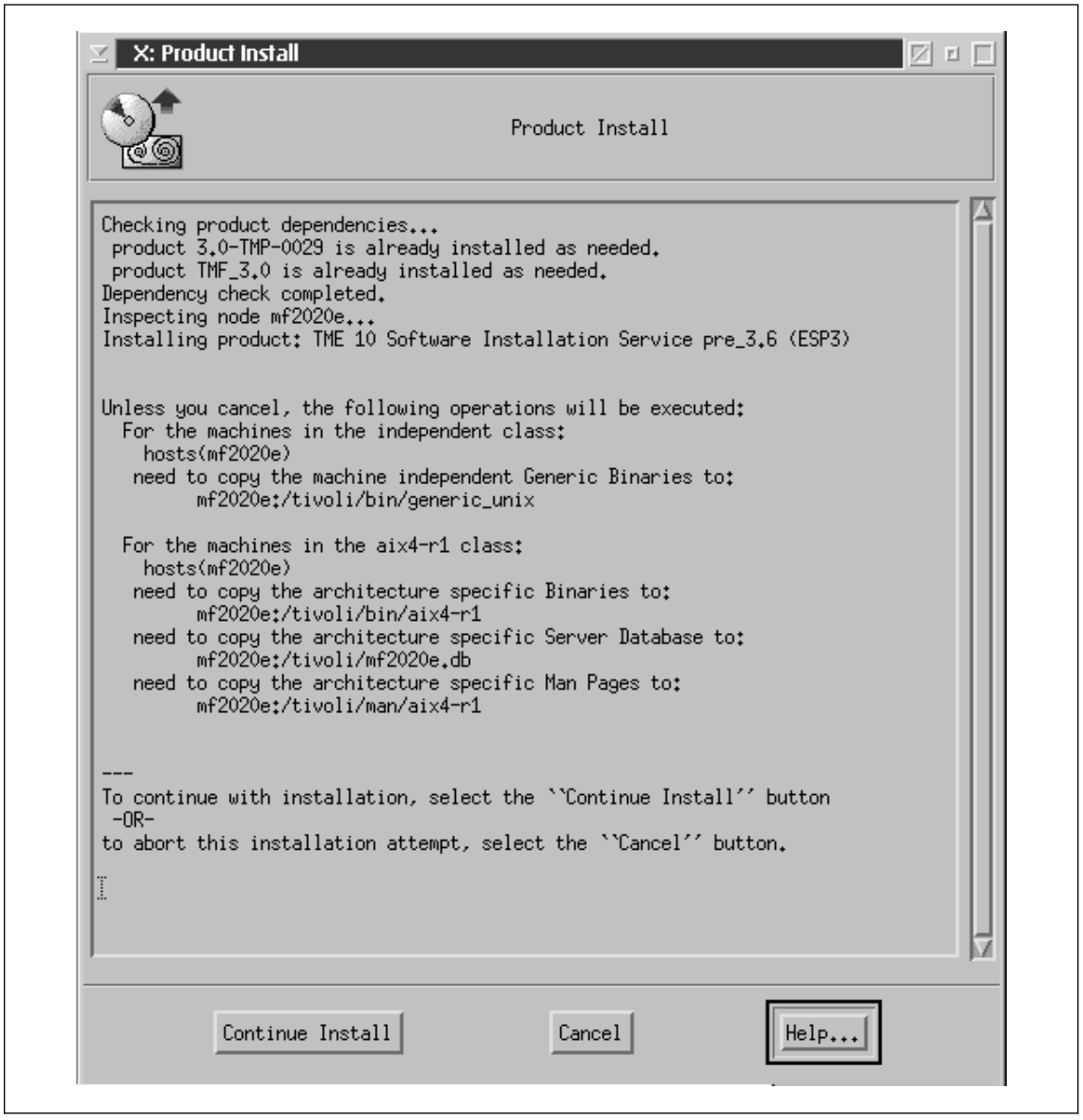

Figure 17. Install Product Dialog Ready to Install SIS

6. If you are in agreement with the actions listed in the Product Install dialog as shown in Figure 17, select the **Continue Install** button to start the install of the Tivoli Software Installation Service software.

Figure 18. Install Product Dialog with SIS Installation in Progress

The Product Install dialog continues to display information on the status product install process as it proceeds as shown in Figure 18 and Figure 19 on page 39.

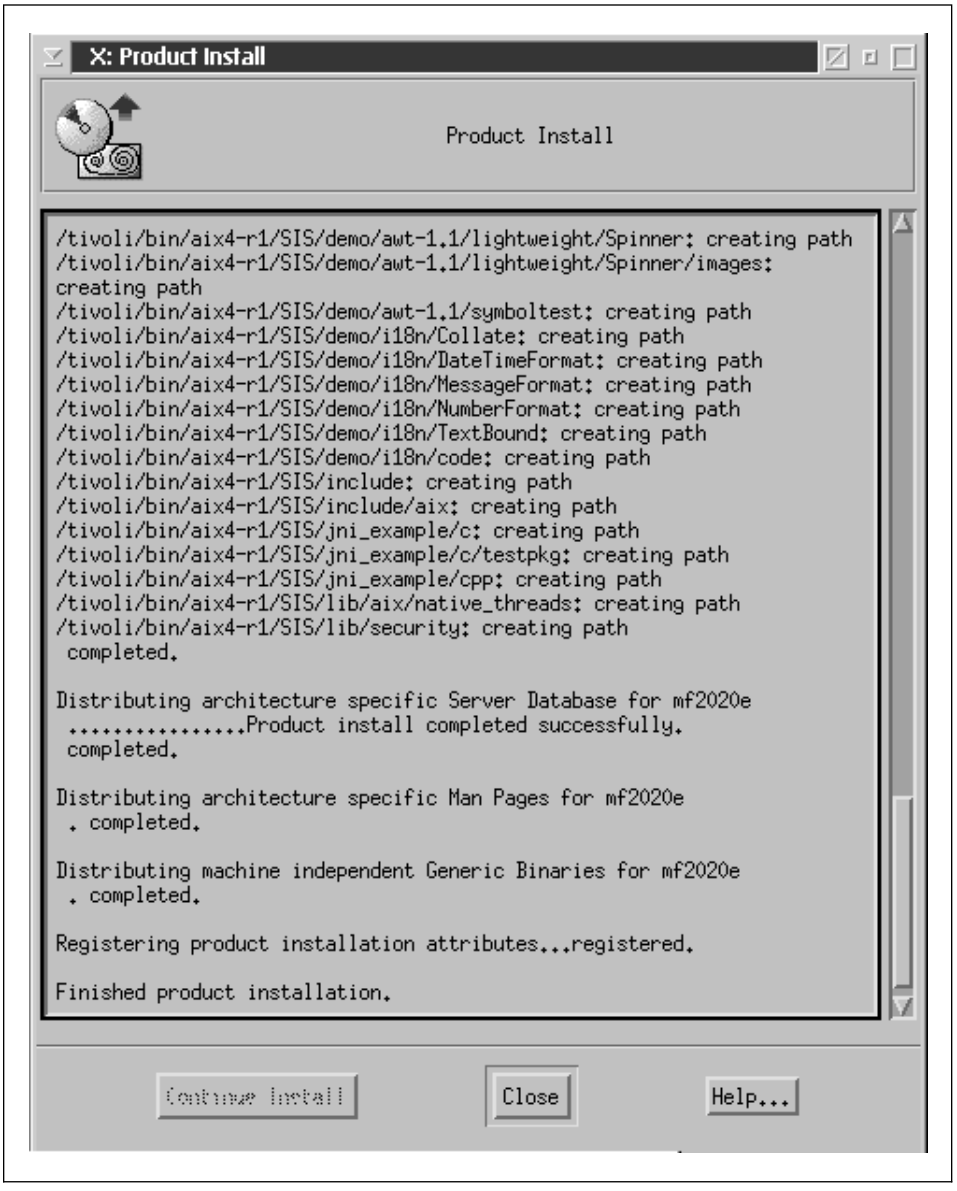

Figure 19. Install Product Dialog with SIS Installation Complete

7. When the installation is complete, the Product Install dialog returns a completion message `Finished product installation` at the bottom of the scroll-down list box of the Install Product dialog as shown in Figure 19. Select the **Close** button to close the Product Install dialog.
8. Restart the Tivoli desktop. Now when you open the **Desktop** action bar pull-down and select **Install** from the pull down list the **Software**

Installation Service... option is now available for you to use to install products in the Tivoli Management Region as shown in Figure 20 on page 40.

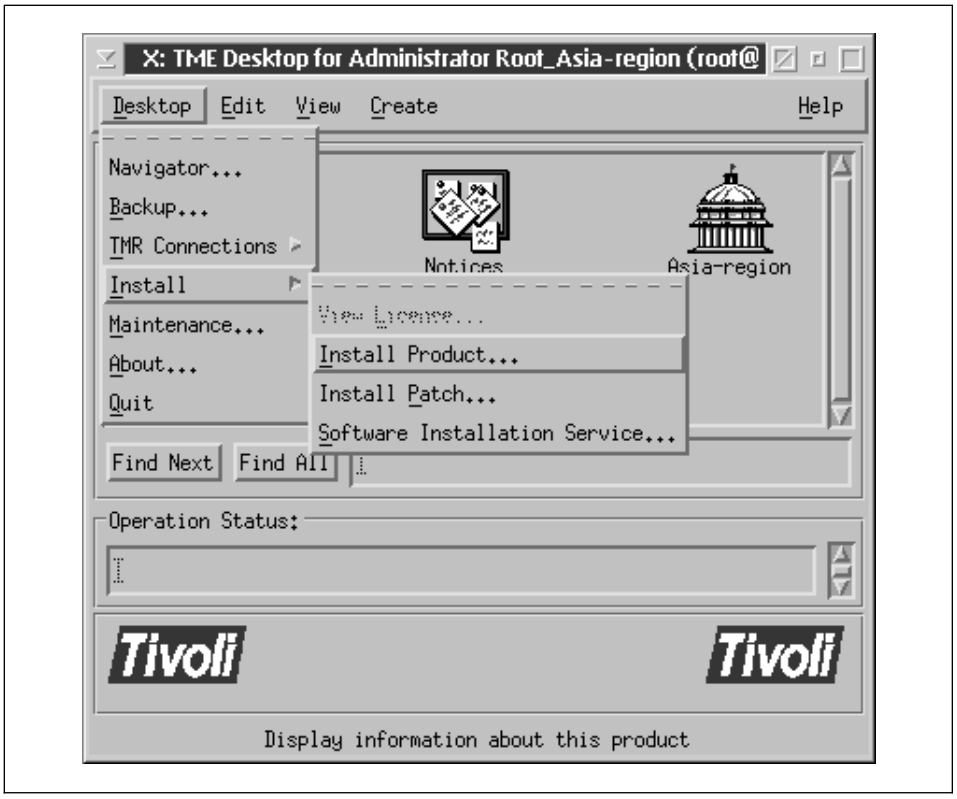

Figure 20. SIS on Tivoli Desktop

4.2 Starting Tivoli Software Installation Service

You can start Tivoli Software Installation Service from the Tivoli desktop or the command line. To start Tivoli Software Installation Service from the desktop perform the following steps:

1. From the Tivoli desktop menu select **Desktop--->Install--->Software Installation Service...** from the desktop pull down menu as shown in Figure 20.

   Every time you start Tivoli Software Installation Service it automatically synchronizes itself with the information stored in the TMR server. Tivoli Software Installation Service loads templates of information about all Tivoli

products and machines in the region and caches this information in the install repository during this synchronization.

Note

To start Tivoli Software Installation Service from the command line enter:

```
sisgui
```

This starts the graphical user interface the same way as if you had started Tivoli Software Installation Service from the Tivoli desktop..

2. Following the synchronization you are prompted for the Tivoli installation password by the Get installation password dialog shown in Figure 21.

Figure 21. Installation Password Dialog

Enter the framework installation password if you had specified one and select **OK**. If you haven't specified any framework installation password select **OK**.

The Tivoli Software Installation Service title bar as shown in Figure 22 and the Tivoli Software Installation Service dialog as shown in Figure 23 on page 42 are displayed.

Figure 22. SIS Title Bar

The TME 10 Tivoli Software Installation Service title bar shown in Figure 22 can only be used to close Tivoli Software Installation Service.

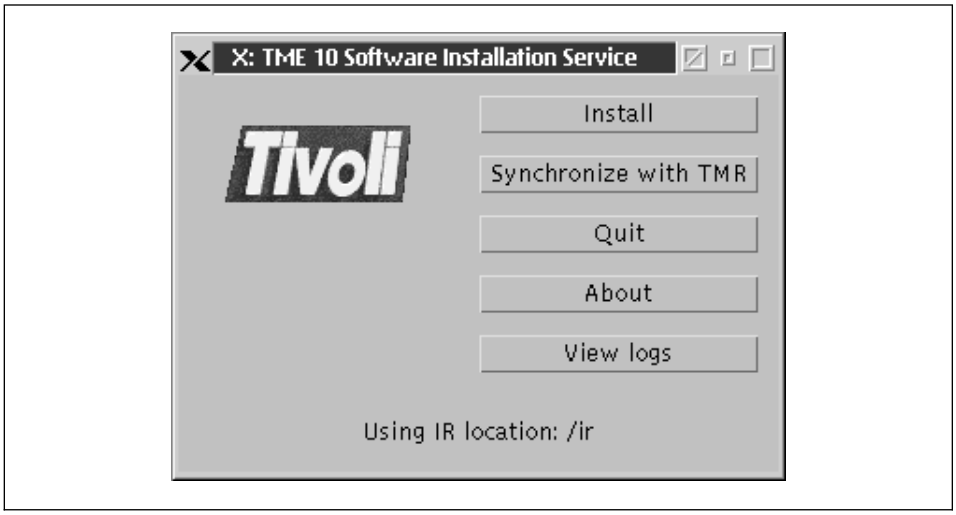

Figure 23. SIS Dialog

From the TME 10 Tivoli Software Installation Service dialog shown in Figure 23 you can choose:

Install To start the software installation procedure

Synchronize with TMR
To synchronize to update product and Managed Node installation information in the Install Repository

Quit To Close Tivoli Software Installation Service

About To view Tivoli Software Installation Service product information

View Logs To view the HTML-based log files generated by Tivoli Software Installation Service

4.3 Synchronizing with TMR

Tivoli Software Installation Service automatically synchronizes itself with the TMR server every time you start Tivoli Software Installation Service. But there are situations where you need to synchronize Software Installation Service with the TMR server manually. There can be sequences where you're working with the TMR server at the same time you are working with Tivoli Software Installation Service. Tivoli Software Installation Service is unaware of changes that take place at the TMR server while Tivoli Software Installation Service is running. Examples of scenarios where changes at the TMR server while Software Installation Service is active include:

1. When you create a Managed Node using the traditional Tivoli Management Framework methods, the Managed Node is updated on the TMR server but it doesn't show up in the Software Installation Service machines list.
2. Before you create endpoints on pristine OS/2 or Windows 95 machines using Tivoli Software Installation Service, you need to create the PC Managed Nodes first for these machines using traditional Tivoli Management Framework methods. These are known to the TMR server but do not show up on the Software Installation Service machines list.

In the above scenarios, after you create the Managed Node or PC Managed Nodes on the TMR server, you have to synchronize Tivoli Software Installation Service with the TMR server so that Tivoli Software Installation Service knows about the changes.

This can be accomplished in two ways:

1. Manually re-synchronize Tivoli Software Installation Service with the TMR server.

   To be able to do this you need to be on the TME 10 Tivoli Software Installation Service dialog shown in Figure 23 on page 42. If, for example, you are in the TME 10 Tivoli Software Installation Service - Install details dialog shown in Figure 24 on page 44, select **Close** which takes you to the TME 10 Tivoli Software Installation Service dialog show n in Figure 23 on page 42. On the TME 10 Tivoli Software Installation Service dialog select **Synchronize with TMR** to synchronize Tivoli Software Installation Service with the TMR.

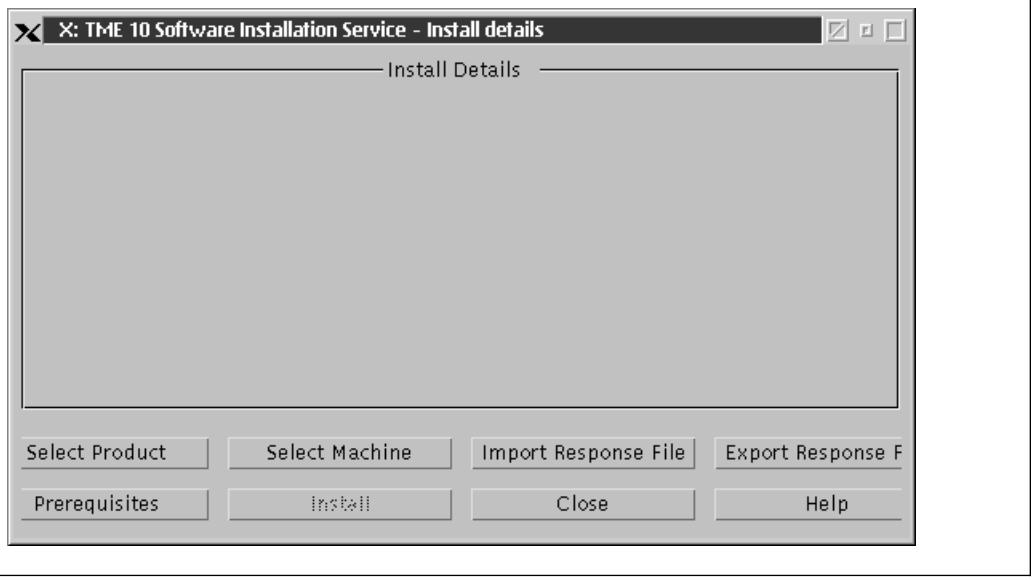

Figure 24. Install Details

2. Close and restart Tivoli Software Installation Service

   Use the close button of the TME 10 Tivoli Software Installation Service title bar shown in Figure 22 on page 41 to stop the currently active Tivoli Software Installation Service session. Then restart Tivoli Software Installation Service from the Tivoli desktop or command line. When Tivoli Software Installation Service starts up it automatically synchronizes with the TMR server.

   After synchronizing Tivoli Software Installation Service, show all the machines known to the TMR server in the Install Repository - Select Machines dialog list.

4.4 Populating the Install Repository

The Install Repository contains all products and patches available for installation onto machines by Tivoli Software Installation Service. Only after the importing of Tivoli products and patches into the Install Repository can the products be installed onto machines in the region.

Following is an example of importing products into the Install Repository:

1. On the TME 10 Tivoli Software Installation Service dialog shown in Figure 23 on page 42, select **Install** which takes you the TME 10 Tivoli

Software Installation Service - Install details dialog shown in Figure 25 on page 45

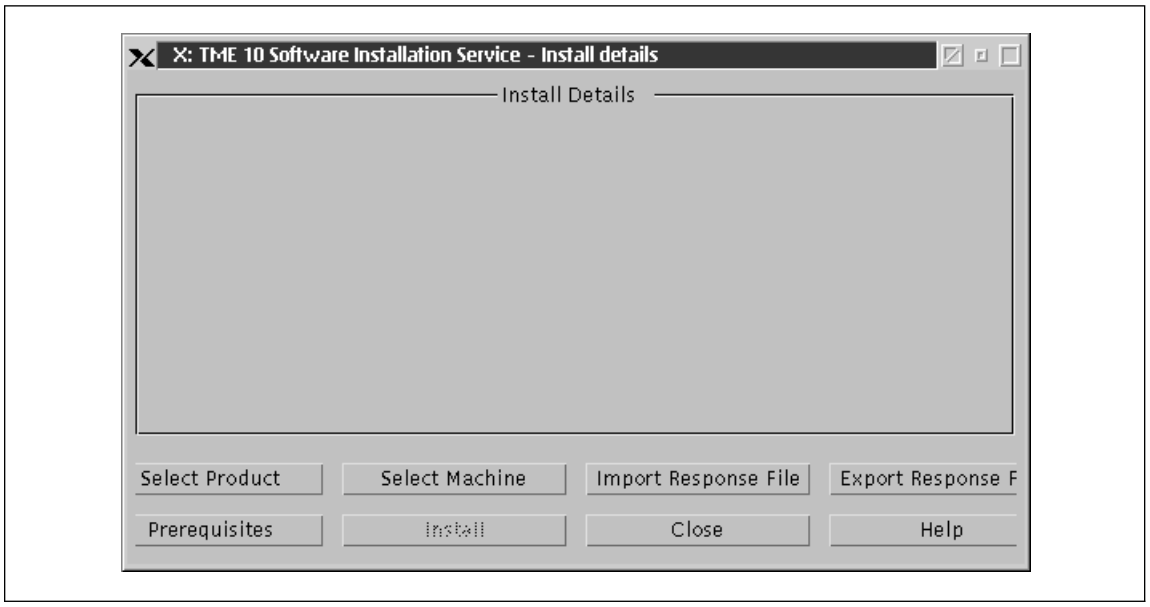

Figure 25. Install Details Dialog

2. On the TME 10 Tivoli Software Installation Service - Install details dialog shown in Figure 25, select the **Select Product** button. This takes you to the Install Repository - Select Product dialog shown in in Figure 26 on page 46. This dialog displays the currently available products in the Install Repository that are available for installation using Tivoli Software Installation Service.

Figure 26. Available Products in Install Repository

Note

Your initial list of available products may differ from those shown in Figure 26. The Available Products list may initially be empty. The contents of the initial list may vary because some Tivoli products and patches contained on the Tivoli Software Installation Service CD-ROM are automatically imported into Install Repository during the Tivoli Software Installation Service installation process. These products and patches are then displayed in the Available Products list.

3. To add additional products to your Install Repository select the **Import CD Images** button. You are presented the Locate CD images dialog shown in Figure 27 on page 47. The Locate CD images dialog enables you to specify the directory containing the Tivoli product images you want to import to your Install Repository.

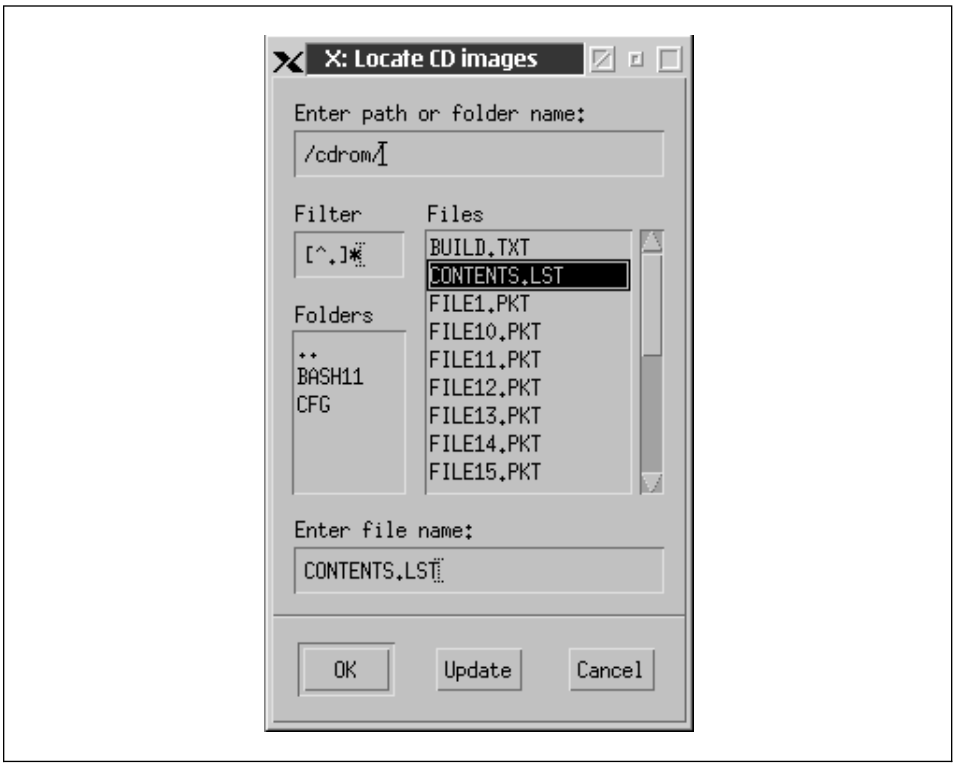

Figure 27. Path to CD Images

4. Type the path name of the CD-ROM containing the Tivoli product images on the Enter path or folder name: field on the Locate CD images dialog. The files in that directory are listed in the Files scroll down list box as shown in Figure 27.
5. Select the file CONTENTS.LST to import the product images or select file PATCHES.LST to import the patch images. This takes you to the Install repository - Import Product dialog shown in Figure 28 on page 48.

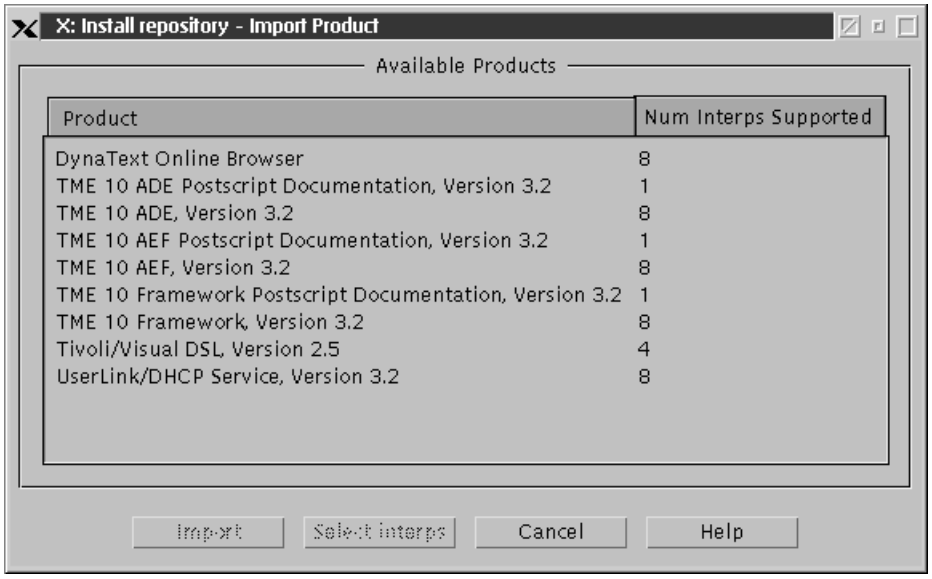

Figure 28. Import Product Dialog

The Install repository - Import Product dialog lists all the available products contained in the specified directory. The Num Interps Supported column specifies the operating systems supported by these products.

6. Select one or more of the products to be imported into the Install Repository. In the example shown in Figure 29 on page 49 the products TME 10 Framework Version 3.2 and Userlink/DHCP Version 3.2 are selected.

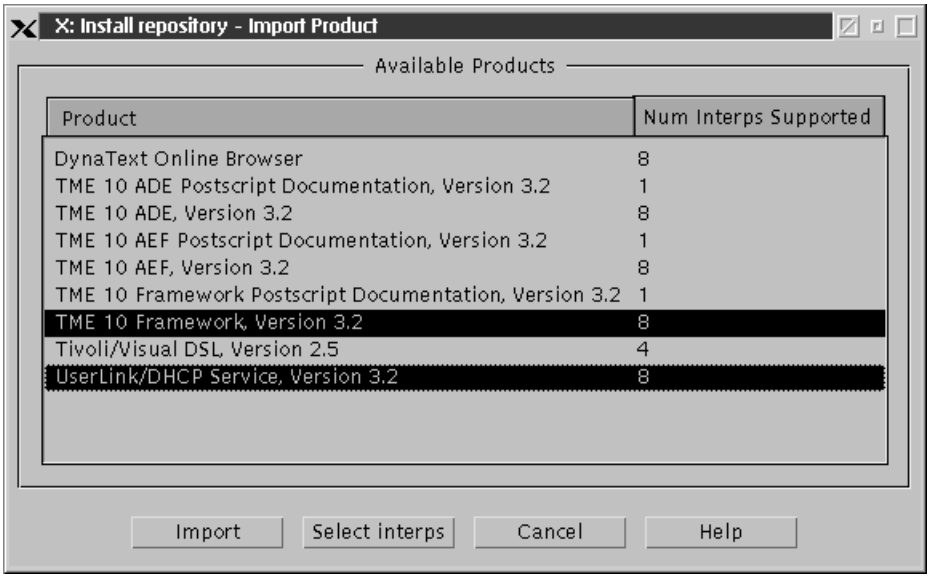

Figure 29. Select Products from CD-ROM Images

7. After selecting the products to be imported into your install repository select the **Select Interps** button to display the Select interps dialog shown in Figure 30.

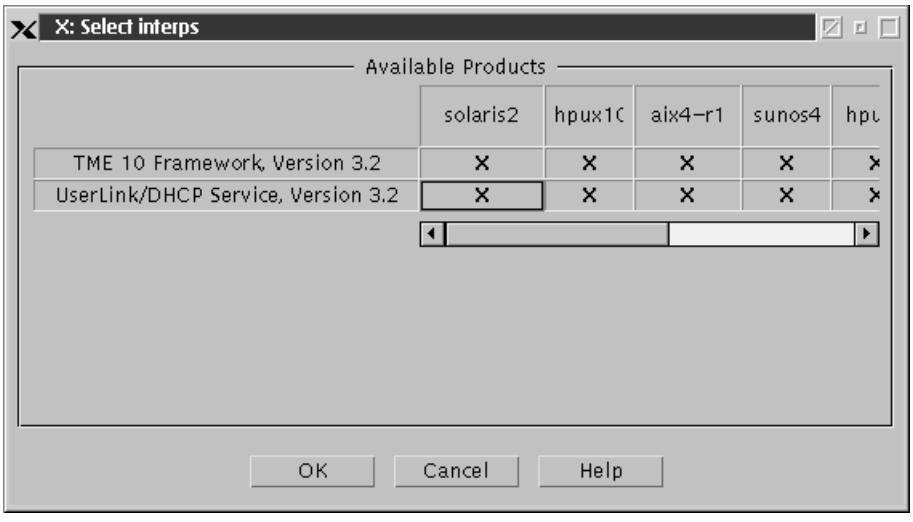

Figure 30. Select Interps Dialog Showing Available Interps

Using the Select interps dialog, you can choose the operating systems to be supported for the products you are importing into your Install Repository. Select or deselect the specific operating systems you want to import by clicking on the cell at the intersection of the product row and the interps column. In the example shown in Figure 31 the operating systems of aix4-r1 and w32-ix86 are the only selected interps for both of the products being imported. All other operating system interps have been deselected.

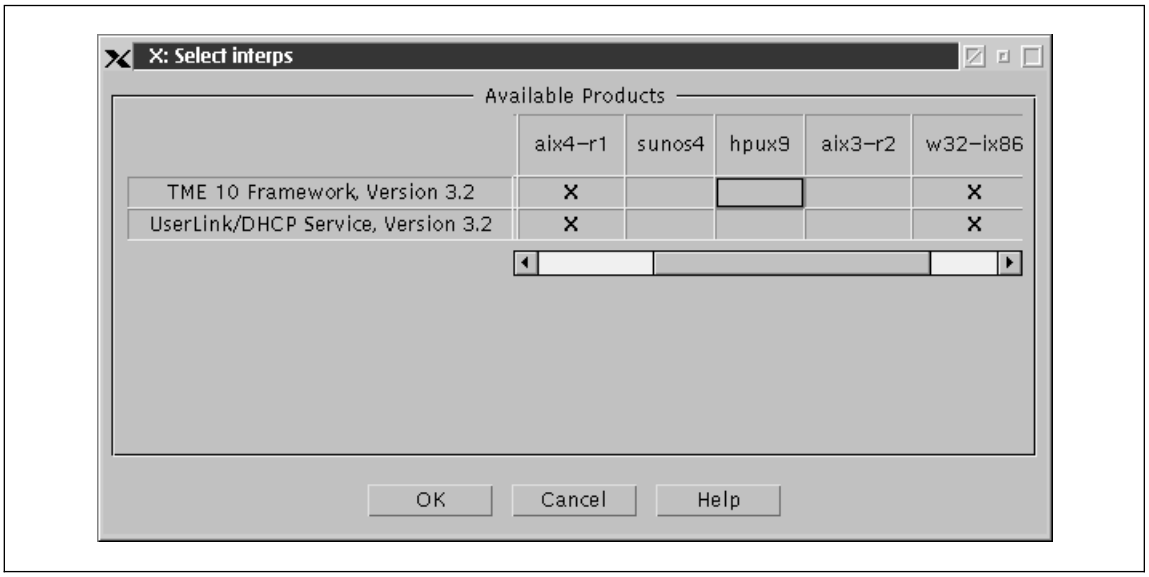

Figure 31. Select Interps Dialog with Interps Selected

8. When you have made your selections, press **OK** and you are returned to the Install repository-Import Product dialog as shown in Figure 32 on page 51.

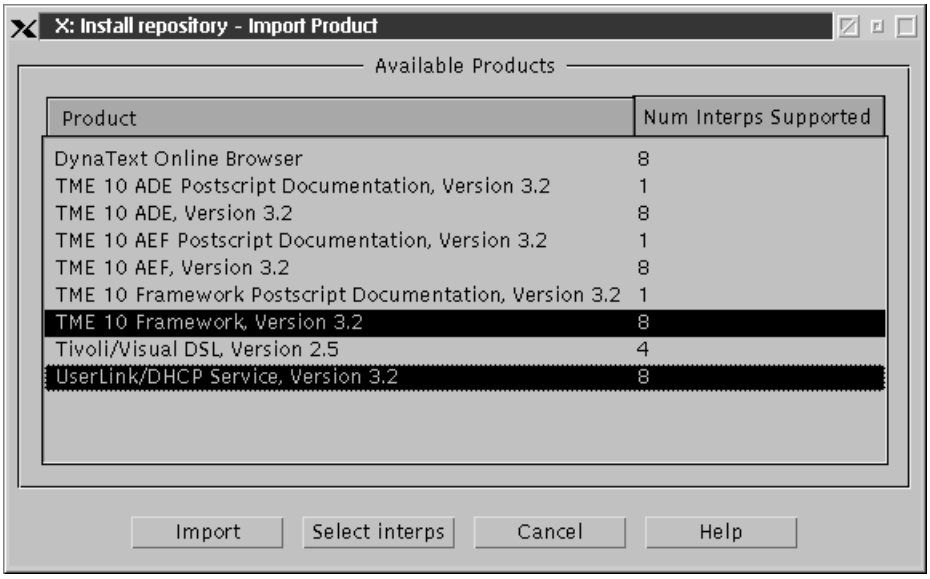

Figure 32. Selected Products for Import to the Install Repository

Note

Selecting only the required operating system interps saves valuable disk space on your SIS server for the Install Repository.

9. You are now ready to begin the import of the selected products into your Install Repository. To start the process select **Import** from the Import Product dialog shown in Figure 32. The Product import progress dialog shown in Figure 33 on page 52 is displayed allowing you to view the status of each product as it is imported into your Install Repository.

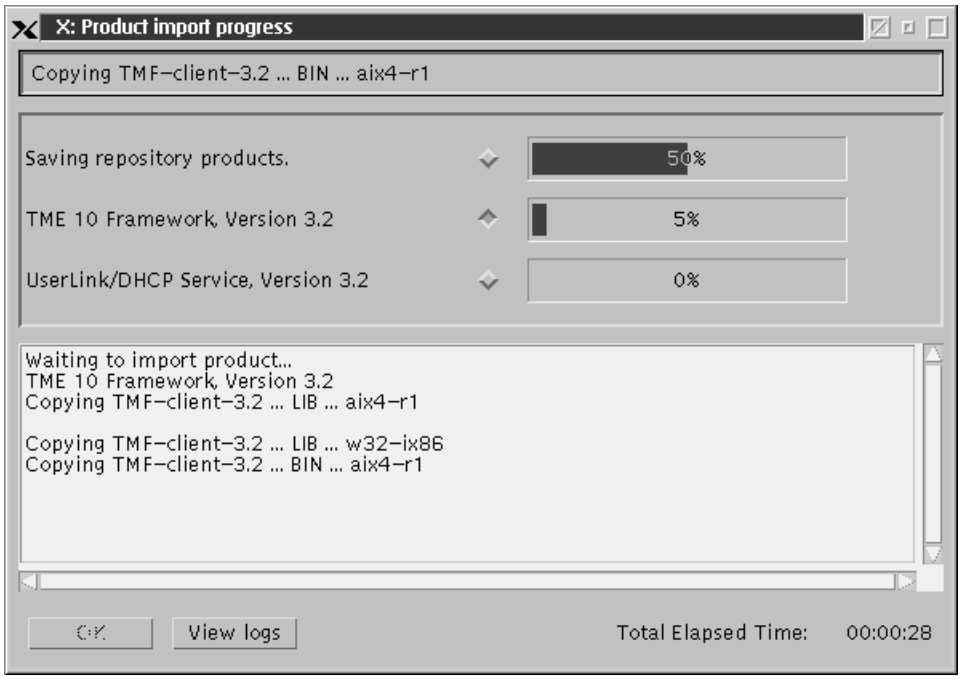

Figure 33. Product Import in Progress

The message box at the bottom of the Product import progress dialog shows status information about the various products being installed. You can click on the radio buttons to the left of each status bar to view the progress information for that product. By selecting the various radio buttons you can view the status information for the different activities and products being installed.

If you have more products being installed than can be displayed at once in the top part of the Product import progress dialog, you need to use the slide bar at the right of the success bars to see the status of all the products. The example shown in Figure 33 does not have more products being installed than can be displayed so there is no slide bar in the dialog.

The status-bars are color coded to indicate the progress of the product being imported.

Blue Indicates that the product is being currently imported

Green Indicates that the product was successfully imported

Red Indicates that the import process failed. Select **View Logs** to view HTML-based error messages once the import process is finished.

Note

For information on how to view and interpret the logs, refer to Chapter 7, “Tivoli Software Installation Service Logs” on page 167.

When the product import completes successfully you see Success on all the status bars and the status bars turn green as shown in Figure 34.

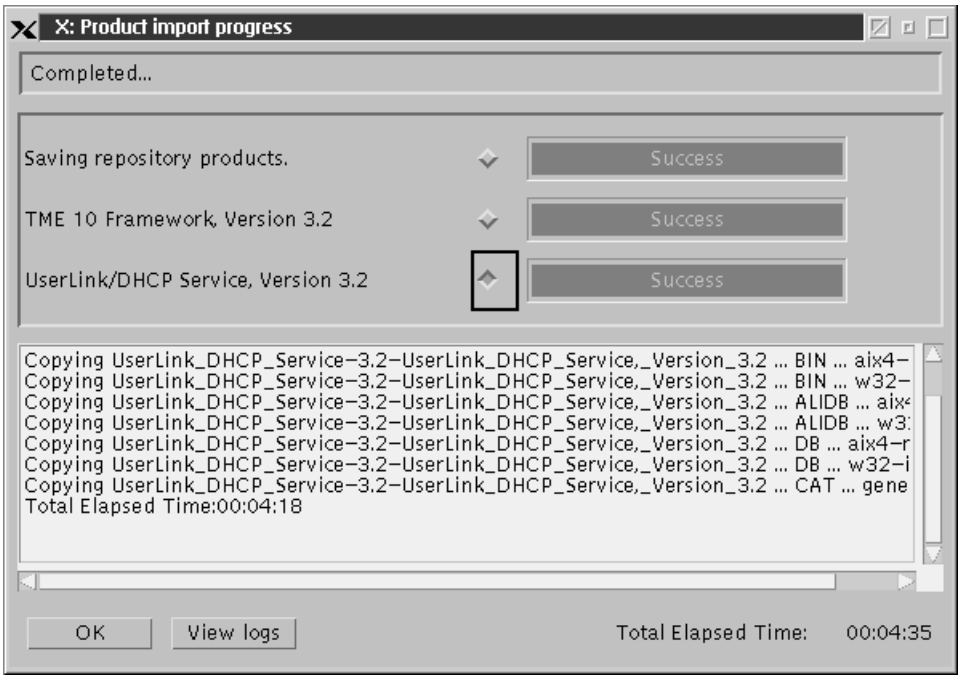

Figure 34. Product Import Complete

10. When you have noted the success status and completed viewing the progress activity information presented on the Product import progress dialog shown in Figure 34, select **OK** to return to the Install Repository - Select Product dialog shown in Figure 35 on page 54.

Figure 35. Updated Available Products in Install Repository

You now see the products just imported as available for installation to the machines in your Tivoli Management Region. In the example shown in Figure 35, the products TME 10 Framework Version 3.2 and Userlink/DHCP Service Version 3.2 are now listed in the Available Products list as products in the Install Repository.

Chapter 5. Using Tivoli Software Installation Service

This chapter describes using Tivoli Software Installation Service to install Managed Nodes, Endpoint Tivoli Managment Gateways and Endpoints. Examples of pushing Managed Nodes and Endpoints to various platforms using the graphical user interface, as well as using the command line interface, are presented.

5.1 Pushing Gateway and Managed Nodes

When you use Tivoli Software Installation Service to create and install managed nodes and gateways, Tivoli Software Installation Service performs two functions. First, it pushes the required Tivoli software to the node. Second, it registers the newly created node with the Tivoli Management Region. This registration is what allows the newly created node to become part of the Tivoli Management Region. Thus, the node looks and functions as if it had been created using traditional Tivoli Management Framework product installation method.

Before you can create managed nodes or gateways using Tivoli Software Installation Service you need to first populate the Install Repository with the install images for the products. This can be done using the method discussed in Section 4.4, “Populating the Install Repository” on page 44. The Tivoli Managment Gateway product is distributed on the Tivoli Software Installation Service CD-ROM. The images for the managed node can be found on the Tivoli Management Framework CD-ROM.

As discussed in Section 2.3, “Tivoli Software Installation Service Server” on page 13, the Tivoli Software Installation Service can run either on a TMR server or on a Managed Node. If you are installing Tivoli Software Installation Service into a new Tivoli Management Region, then you need to first install the Tivoli Management Region server using traditional procedures. After you install the TMR server, if you intend to follow the recommended approach of running Tivoli Software Installation Service on a Managed Node separate from the TMR server, then you need to create this managed node from the TMR server using the traditional Tivoli Management Framework method. Once you have installed Tivoli Software Installation Service on either the TMR server or a managed node, any further creation of managed nodes, endpoints, and endpoint gateways in the region can be done using Tivoli Software Installation Service.

Tivoli Software Installation Service can install the Tivoli Managment Gateway product on any system that is an existing Managed Node. If you try to install

the Tivoli Managment Gateway product on a machine that is not a Managed Node, you are prompted to install the Tivoli Management Framework product first. Once the Tivoli Management Framework product has been installed on a machine then you can install the Tivoli Managment Gateway product on that machine. If you select both the Tivoli Management Framework and the Tivoli Managment Gateway to be installed at the same time, Tivoli Software Installation Service understands this requirement and automatically installs the Tivoli Management Framework first, then install the Tivoli Managment Gateway during the same installation sequence.

5.2 Pushing Endpoints

The Tivoli Endpoint on Managed Node and Tivoli Endpoint on PC Managed Node products are packaged on the Tivoli Management Framework Version 3.6 CD-ROM. Before you can use them with Tivoli Software Installation Service, you must first import the install images into the Tivoli Software Installation Service Install Repository.

You can use Tivoli Software Installation Service to install the Tivoli Endpoint Managed Node product on an existing Managed Node to make it an Endpoint. Tivoli Software Installation Service coordinates this installation with the TMR server. Following the installation of the Tivoli Endpoint product on the Managed Node,the Managed Node becomes an Endpoint. This means that it is no longer a Managed Node, and it disappears from the Managed Node list of the Tivoli region. Now that it is an Endpoint, it can be viewed with other Endpoints in the region only from the Endpoint Tivoli Managment Gateway dialog panel.

5.2.1 UNIX Endpoints

You can use Tivoli Software Installation Service to install Tivoli Endpoint on Managed Nodes product that are UNIX machines to creating endpoints. You need to install the Tivoli Endpoint on Managed Nodes product on any UNIX machines you wish to make an endpoint irrespective of whether it is an existing Managed Node or a pristine UNIX machine. In either case the UNIX machine becomes an endpoint in the Tivoli region.

5.2.2 Windows NT Endpoints

The Tivoli Endpoint on Managed Nodes product needs to be installed on Windows NT machines to create Endpoints. You need to install this product for both pristine Windows NT machines, as well as existing Windows NT Managed Nodes, to make them Endpoints. If your target Windows NT machine is an existing PC Managed Node, you should install Tivoli Endpoints for PC Managed Nodes product to make it an Endpoint.

Before Tivoli Software Installation Service can install any products on any Windows NT machines, TRIP must be running on the Windows NT machines. If your TMR server or Managed Node or Tivoli Managment Gateway is a Windows NT machine, then TRIP is replicated from one of these Windows NT machines to the target Windows NT machine during the installation process by Tivoli Software Installation Service. If your TMR server, Managed Node and the Tivoli Managment Gateway are all UNIX servers, you need to install TRIP manually on the target Windows NT machine where you want to create the Endpoint. Once TRIP is installed on one Windows NT machine in the region, then Tivoli Software Installation Service automatically replicates TRIP to all the other Windows NT machines in the region as needed.

5.2.3 OS/2 Warp 4.0 Endpoints

To use Tivoli Software Installation Service to make a pristine OS/2 machine an Endpoint, you must first manually install the Tivoli PC Agent for OS/2 on the OS/2 machine using traditional Tivoli Management Framework methods. If you do not already have a PC Managed Node in the region, then you need to created one using traditional Tivoli Management Framework method as well. Once the PC Agent for OS/2 is installed, or if you have an existing OS/2 machine that is running the PC Agent for OS/2, you can then use Tivoli Software Installation Service to push Tivoli Endpoints for PC Managed Nodes to the OS/2 machine making the target machine an Endpoint.

5.2.4 Windows 95 Endpoints

The procedure for creating Windows 95 endpoints is similar to that for creating OS/2 endpoints. For pristine Windows 95 machines you first need to install the Tivoli PC Agent on the target machine and create a PC Managed Node in the region using the traditional Tivoli Management Framework methods. Once the PC Agent for Windows 95 is installed, or if you have an existing Windows 95 machine that is running the PC Agent for Windows 95, you can use Tivoli Software Installation Service to push Tivoli Endpoints on PC Managed Node to make the Windows 95 machine an Endpoint.

Note

If you have a Tivoli environment with OS/2 and Windows 95 PC Managed Nodes installed, you can use Tivoli Software Installation Service to install the Tivoli Endpoint on PC Managed Nodes product on these machines making them endpoints.

5.3 Using the Graphical User Interface

This section describes the steps and procedures that you need to follow to:

- Activate the Tivoli Software Installation Service graphical user interface
- Create Managed Nodes
- Create Endpoint Gateways
- Create Endpoints

You can use the Tivoli Software Installation Service graphical user interface to perform many useful and productive tasks. Some of the functions provided by Tivoli Software Installation Service that allow for you to perform these tasks include:

- Import, store and manage Tivoli products and patches in an Install Repository
- Select only the operating system interps that match your installation
- Select machines from or add machines to the Tivoli Management Region where Tivoli products are to be installed
- Define installation prerequisite criteria
- Create a template of machine specific attributes for each product installation
- Install Tivoli products and patches in parallel
- Export Tivoli Software Installation Service response files
- Import Tivoli Software Installation Service response files
- View HTML based status and log information for Tivoli Software Installation Service activities

To perform a specific task may require that you perform more than one of these functions. For example, to install a Tivoli product on a node, you need to import the Tivoli product into the Install Repository and ensure that the node exists in the Tivoli region before actually installing the product.

Throughout the remainder of this redbook, examples are used to describe the steps you need to follow to perform certain tasks using Tivoli Software Installation Service. The intent of giving these examples is to allow you to understand and become familiar with the functions and capabilities of Tivoli Software Installation Service.

5.3.1 Starting the Graphical User Interface

The Tivoli Software Installation Service graphical user interface can be launched from either the Tivoli desktop or the command line. Section 5.3.1.1, " Starting Tivoli Software Installation Service from the Command Line" shows how to start Tivoli Software Installation Service from the command line while, Section 5.3.1.2, "Starting Tivoli Software Installation Service from the Tivoli Desktop" shows how to start Tivoli Software Installation Service from the Tivoli desktop.

5.3.1.1 Starting Tivoli Software Installation Service from the Command Line

You can run the Tivoli Software Installation Service graphical user interface from the command line by performing the following steps:

1. Source in your Tivoli environment by running the following command:

   AIX `#. ./etc/Tivoli/setup_env.sh`

   Windows NT `\winnt\system32\drivers\etc\tivoli\setup_env.cmd`

2. Change to the binaries directory by issuing the following operating system command:

   AIX `cd $BINDIR/bin`

   Windows NT `cd %BINDIR%\bin`

3. Enter the following command to start the Tivoli Software Installation Service graphical user interface:

   AIX `sisgui`

   Windows NT `sh sisgui.sh`

NOTE

You do not need to activate the Tivoli desktop before starting the Tivoli Software Installation Service graphical user interface from the command line. The Tivoli Software Installation Service graphical user interface operates independently from the Tivoli desktop.

5.3.1.2 Starting Tivoli Software Installation Service from the Tivoli Desktop

You can run the Tivoli Software Installation Service graphical user interface from the Tivoli desktop. From the Tivoli desktop shown in Figure 36 on page 60, select **Desktop** from the action bar then select the **Install** and the **Software Installation Service...** options from the drop-down menus.

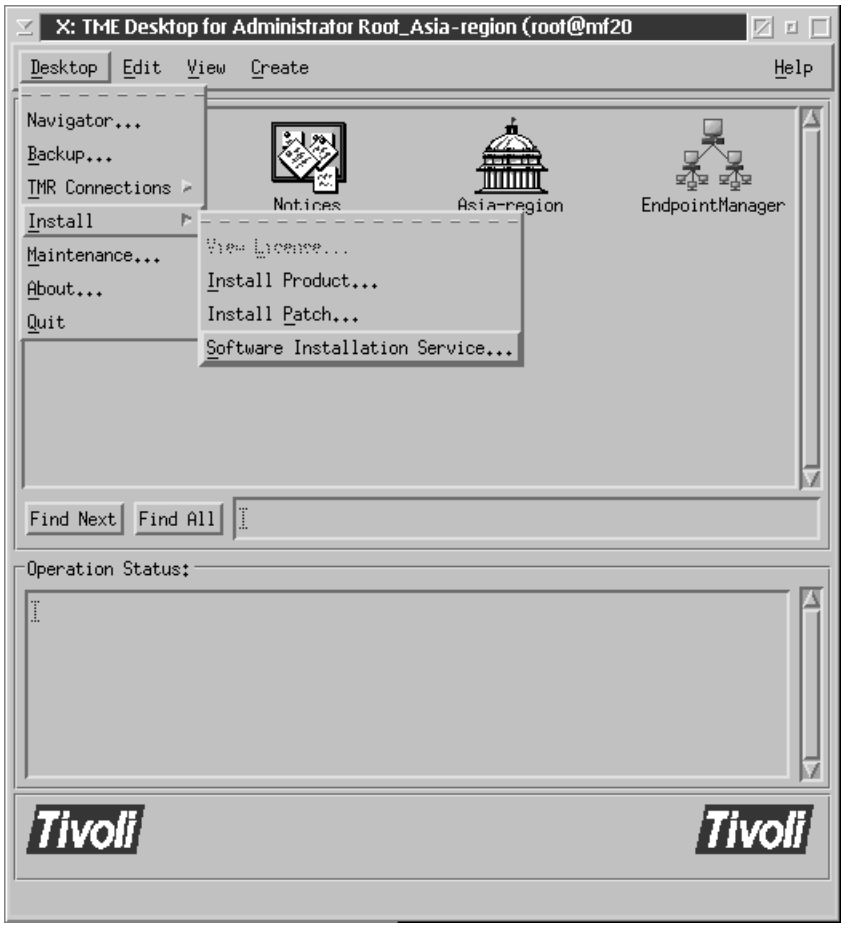

Figure 36. Tivoli Desktop

For more detailed instructions on starting the Tivoli Software Installation Service graphical user interface from the Tivoli desktop, refer to Section 4.2, “Starting Tivoli Software Installation Service” on page 40.

5.3.2 Installing Managed Nodes.

An advantage of using Tivoli Software Installation Service for the installation of Managed Nodes is its ability to create one or more Managed Nodes at the same time.

This section gives you a step by step process you can follow to install one or more Managed Nodes in parallel.

1. Start the Tivoli Software Installation Service graphical user interface by following the instructions described in Section 5.3.1, “Starting the Graphical User Interface” on page 59.

   The TME 10 Software Installation Service dialog box shown in Figure 37 is displayed.

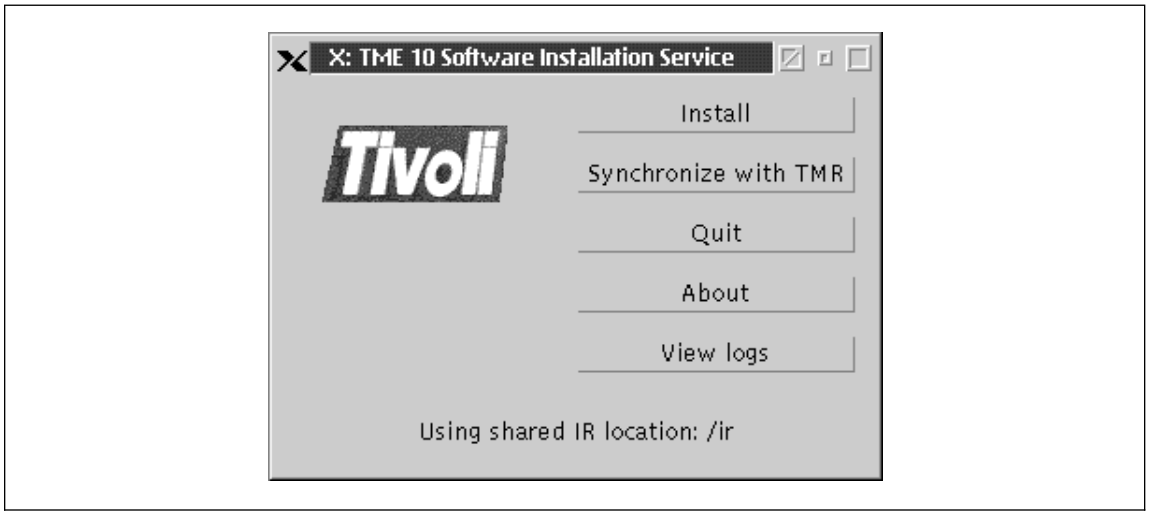

Figure 37. Software Installation Service Main Menu

2. Select the **Install** option from the TME 10 Software Installation Service dialog box shown in Figure 37.

   The TME 10 Software Installation Service - Install details dialog box shown in Figure 38 on page 62 is displayed.

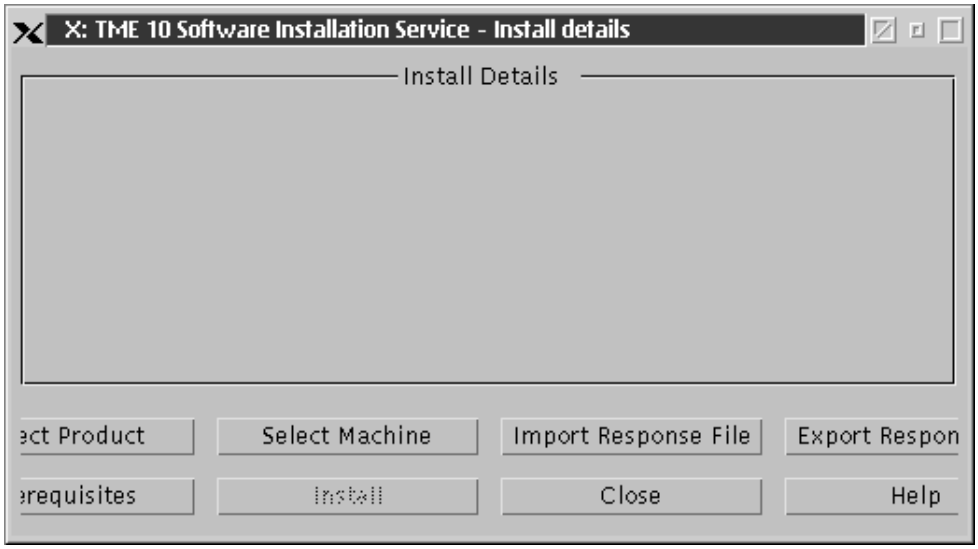

Figure 38. Software Installation Service - Install Details Dialog

3. The first activity you need to perform is to identify and define all the machines you want Tivoli Software Installation Service to install as Managed Nodes. You do this by selecting the **Select Machine** option from the TME 10 Software Installation Service - Install details dialog box shown in Figure 38.

   The Install Repository - Select Machine dialog box shown in Figure 39 on page 63 is displayed.

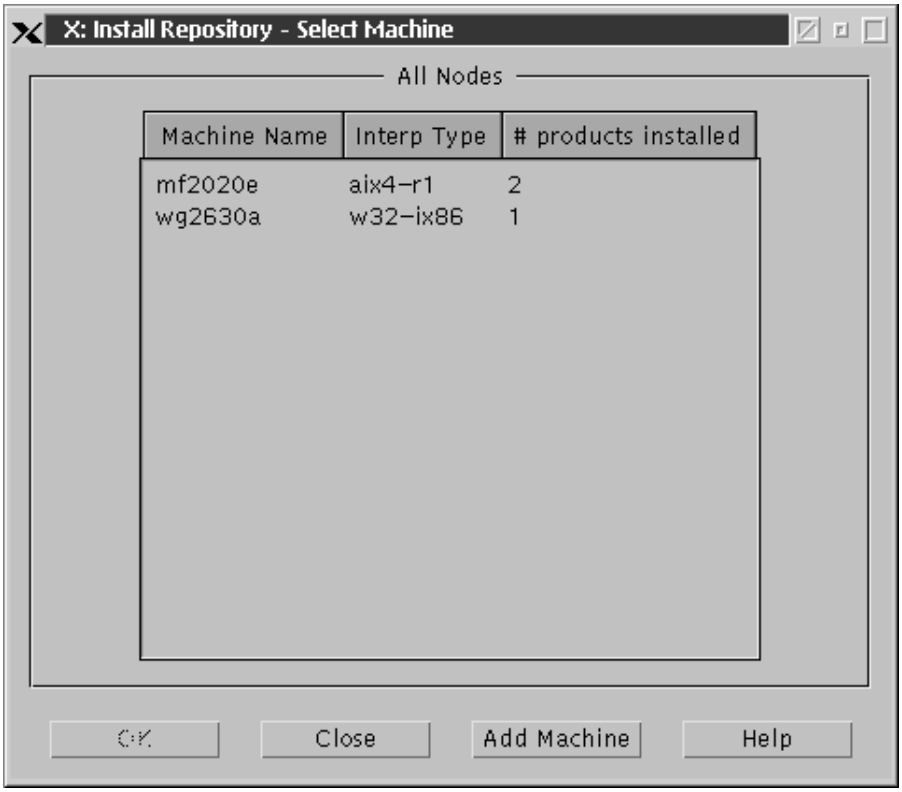

Figure 39. Install Repository - Select Machine Dialog

The Install Repository - Select Machine dialog box lists all the Managed Nodes and PC Managed Nodes in the Tivoli Management Region. The current nodes defined in the region are listed in alphabetical order under the Machine Name column of the dialog box. Then, for each node in the region, the platform (operating system) is listed under the Interp Type column as well as the number of Tivoli products currently installed on each of the nodes under the # products installed column.

4. In this example, a number of new Managed Nodes is created in the region. Since these machines are not known to Tivoli Software Installation Service, they need to be defined to Tivoli Software Installation Service before they can be created as Managed Nodes. This can be done by selecting the **Add Machine** option from the Install Repository - Select Machine dialog box shown in Figure 39.

   The Add Machine dialog box shown in Figure 40 on page 64 is displayed.

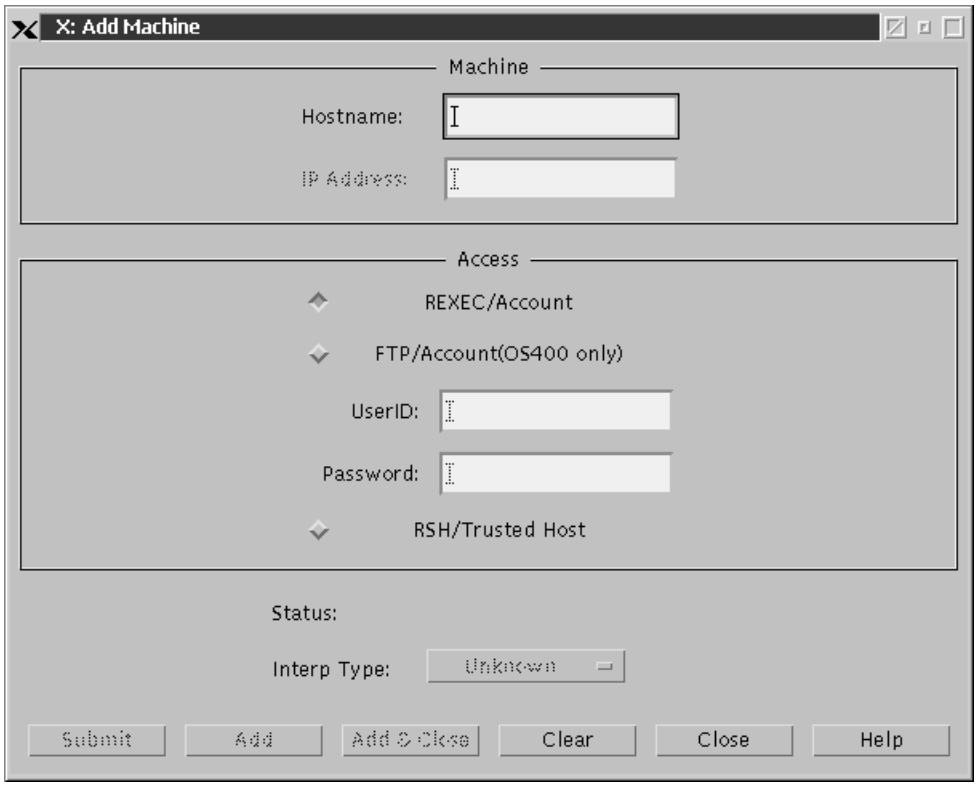

Figure 40. Add Machine Dialog

To define new machines to Tivoli Software Installation Service, you need to provide the following information in the Add Machine dialog box shown in Figure 40:

Hostname Enter the hostname of the new Managed Node.

UserID Enter a user ID with administrative access on the machine that is being created as a Managed Node.

Password Enter the password for the administrator's user ID entered in the UserID field.

Note

In this example, the REXEC/Account option is being used for the server to interact with the client. When the REXEC/Account option is used, a root or Administrator user ID must be entered for both UNIX and Windows NT.

For AIX machines, you can choose to use the RSH/Trusted Host option. To use this option, you do not have to enter a user ID and password, and you must ensure that the name of the server is added to the client's `\.rhost` file.

For further detailed information on using the RSH/Trusted Host option, refer to the *TME 10 Framework Planning and Installation Guide*.

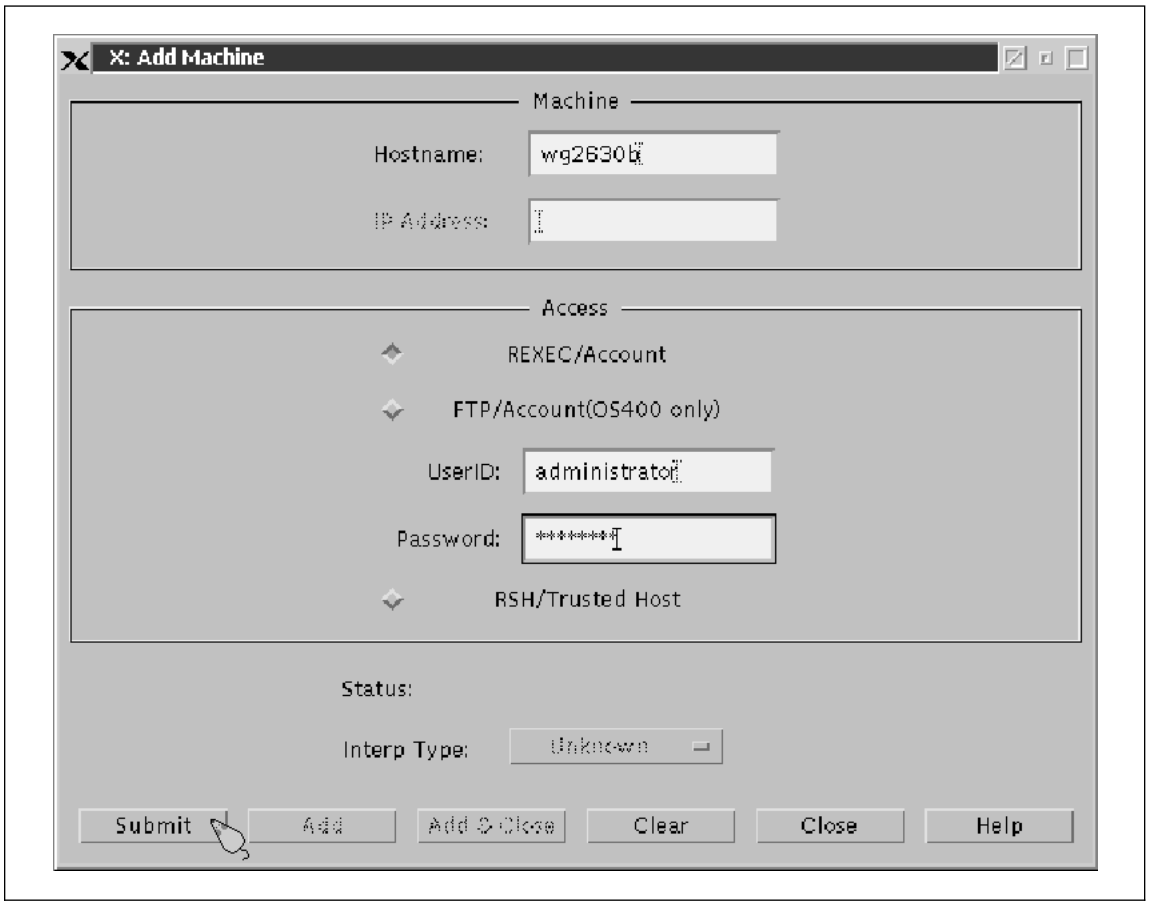

Figure 41. Add Machine Dialog with Machine Details before Submit

Figure 41 shows an example of the Add Machine dialog with the UserID: `administrator` and Password: entered for the Hostname: `wg2630b` machine.

5. When you have captured all the required information, select the **Submit** option on the Add Machine dialog box as shown in Figure 41 on page 65.

   Tivoli Software Installation Service contacts the target machine to check its interp type.

   If you are creating a Managed Node on a Windows NT machine, Tivoli Software Installation Service also checks to see if TRIP is operational. If the machine does not have TRIP installed or operational, the Connection failure dialog box shown in Figure 42 appears.

   If the machine you are creating as a Managed Node is an UNIX machine, or a Windows NT machine with TRIP installed, you will not see the dialog box shown in Figure 42 and you can proceed to step 6 on page 68 to continue with the installation.

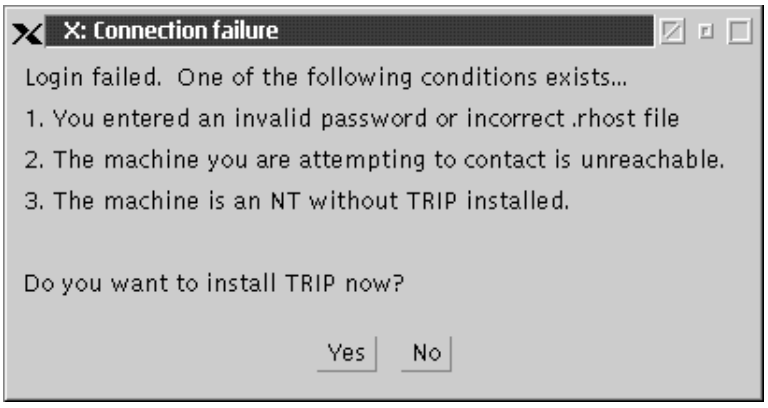

Figure 42. Connection Failure Dialog

A prerequisite for creating a Managed Node on a machine running the Windows NT operating system is that TRIP be installed and operational on the target machine. When Tivoli Software Installation Service detects that TRIP is not installed on a target machine, the Connection failure dialog box shown in Figure 42 is displayed.

You can have Tivoli Software Installation Service install TRIP on the machine by selecting the **Yes** option in the Connection failure dialog box shown in Figure 42.

If you do not want to have TRIP installed on the Windows NT machine, you can select the **No** option on the Connection failure dialog box shown in Figure 42. The installation of this Managed Node will not continue and the system returns you to the Add Machine dialog box shown in Figure 40 on page 64 from where you can continue to define additional machines.

If you selected the **Yes** option to have TRIP installed, and you do not have a Windows NT Repeater configured in the Tivoli Management Region, Tivoli Software Installation Service cannot install TRIP and the TRIP installation failed dialog box shown in Figure 43 is displayed.

Note

The first Windows NT Managed Node configured in a Tivoli Management Region is designated as a Windows NT repeater. A function of this repeater is to distribute TRIP to Windows NT machines being installed as Managed Nodes.

If there is an existing Windows NT Managed Node in the region, then Tivoli Software Installation Service installs TRIP on the target machine and the Add Machine dialog box shown in Figure 44 on page 68 is displayed. You can proceed to step 6 on page 68 to continue with the installation.

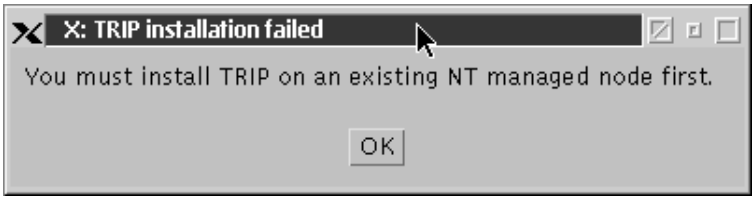

Figure 43. TRIP Installation Failed Dialog

If Tivoli Software Installation Service cannot find a Windows NT repeater in the region and is unable to install TRIP on the target machine, the TRIP installation failed dialog box shown in Figure 43 is displayed.

You need to install TRIP manually on the machine before the machine can be installed as a Managed Node. To end the current attempt to install the Managed Node select the **OK** option on the TRIP installation failed dialog box shown in Figure 43. The creation of the Managed Node is discontinued and you are returned to the Add Machine dialog box shown in Figure 40 on page 64 from where the installation can be cancelled or where you can continue to add other machines.

For detailed step by step instructions on how to manually install TRIP on a Windows NT machine, refer to Chapter 8.1.3.2 "Installing Windows NT Systems as TME 10 Clients" in the redbook *An Introduction to Tivoli's TME 10*, SG24-4948-01.

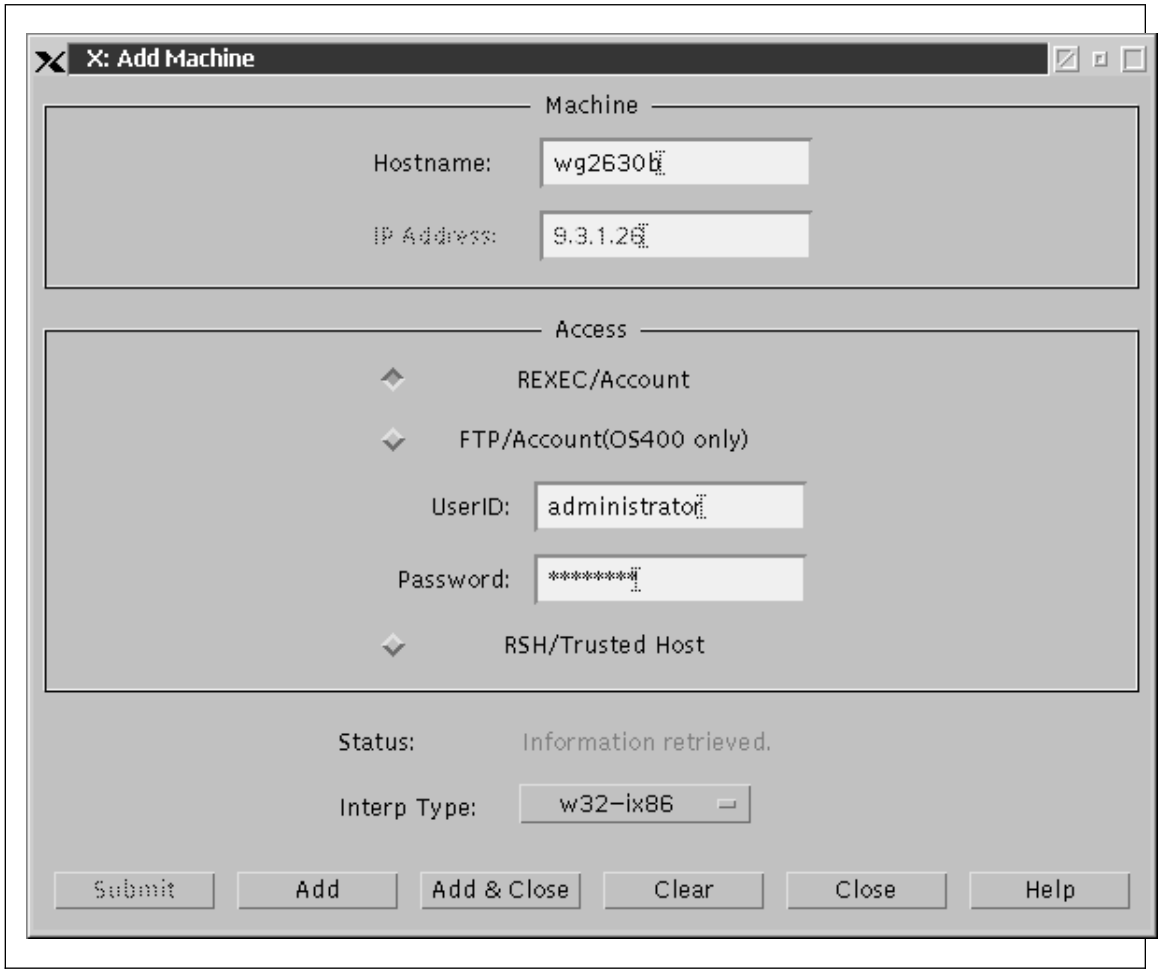

Figure 44. Add Machine Dialog after Successful Submit

6. As a result of the submit action, Tivoli Software Installation Service has retrieved and updated the following information on the Add Machine dialog box as shown in Figure 44:
   - The target machine's IP Address field has been filled in
   - The Status: message area has been updated to reflect Information retrieved

- The Add and the Add & Close command buttons are now enabled
- Tivoli Software Installation Service has identified and updated the Interp Type: field

If, as in the case of this example, the target machine is running Windows NT, the following is known:

- TRIP is running on the target machine

For all nodes, regardless of the operating systems installed on the machines, the following is known:

- Tivoli Software Installation Service is able to communicate with the machines
- The user IDs and passwords have been verified
- The machines are now ready to have the Managed Node software installed and configured

In this example, more than one Managed Node is being created. To continue defining the rest of the machines, select the **Add** option on the Add Machine dialog box shown in Figure 44 on page 68.

Tivoli Software Installation Service notes and remembers the information about the current machine, and the Add Machine dialog box is cleared and redisplayed as shown in Figure 40 on page 64.

Enter the details of the next machine to be created as a Managed Node by following the process described in step 4 on page 63 through step 6 on page 68.

Note

The process described in step 4 on page 63 through step 6 on page 68 must be repeated for each machine that is being created as a Managed Node.

When the last machine's configuration has been added, select the **Close** option on the Add Machine dialog box shown in Figure 44 on page 68

The Install Repository - Select Machine dialog box shown in Figure 45 on page 70 is displayed.

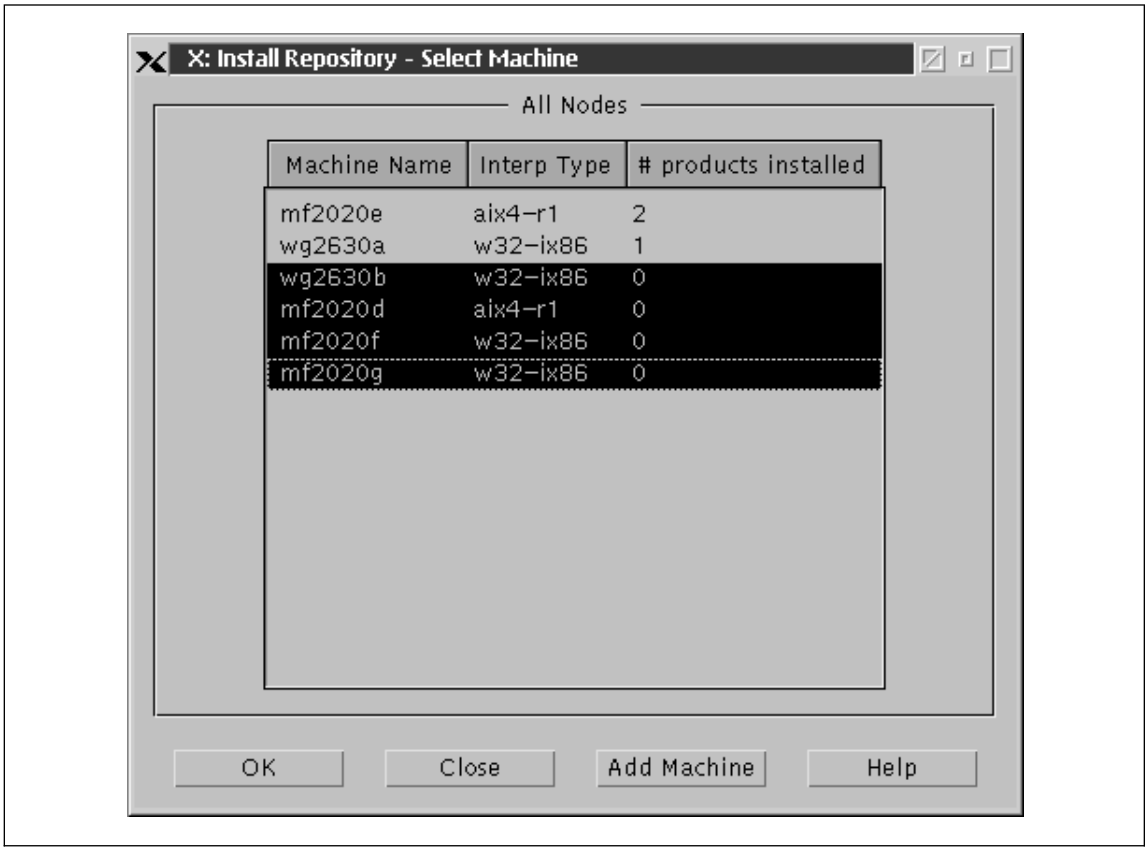

Figure 45. Install Repository - Select Machine Dialog

The machines that have just been added are highlighted in the list of machines available for selection. If you had only added one new machine to Tivoli Software Installation Service, only that one machine would be highlighted.

Notice that in the # products installed column for the machine just added is 0. This is because no Tivoli products have yet been installed on these new machines. After the machines have been created as Managed Nodes, for this example, this field changes to to 1 reflecting that the Tivoli Framework product has been installed on each of these machines.

7. To continue the creation of the Managed Nodes, select the **OK** option in the Install Repository - Select Machine dialog box shown in Figure 45.

   You are returned to the TME 10 Software Installation Service - Install details dialog box shown in Figure 46 on page 71.

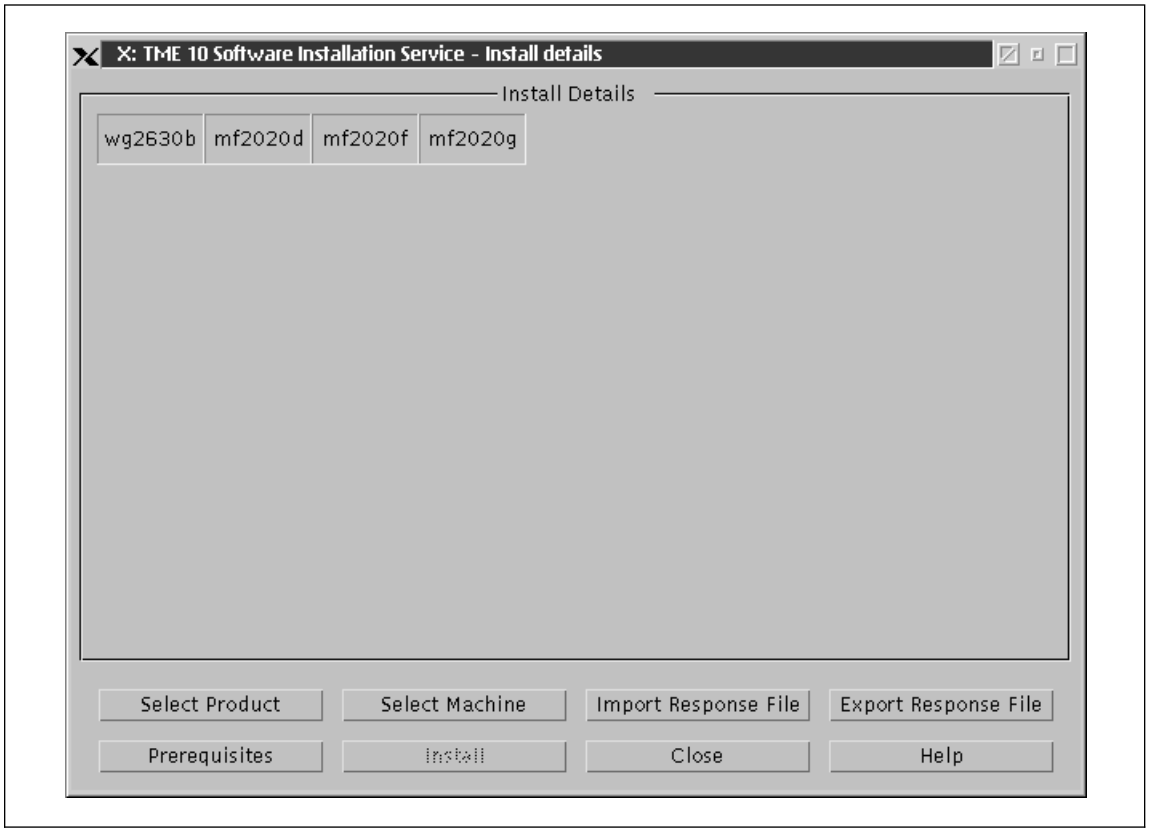

Figure 46. Install Details Showing Selected Machines

The selected nodes now appear in what is the start of a matrix in the Install Details area of the TME 10 Software Installation Service - Install details dialog. When complete, the matrix displays the selected nodes in the columns and the products to be installed on the nodes in the rows.

8. To create these machines as Managed Nodes, the Tivoli Framework product needs to be installed on each selected node. To initiate this activity, select the **Select Product** option from the TME 10 Software Installation Service - Install details dialog box shown in Figure 46.

   The Install Repository - Select Product dialog box is redisplayed as shown in Figure 47 on page 72.

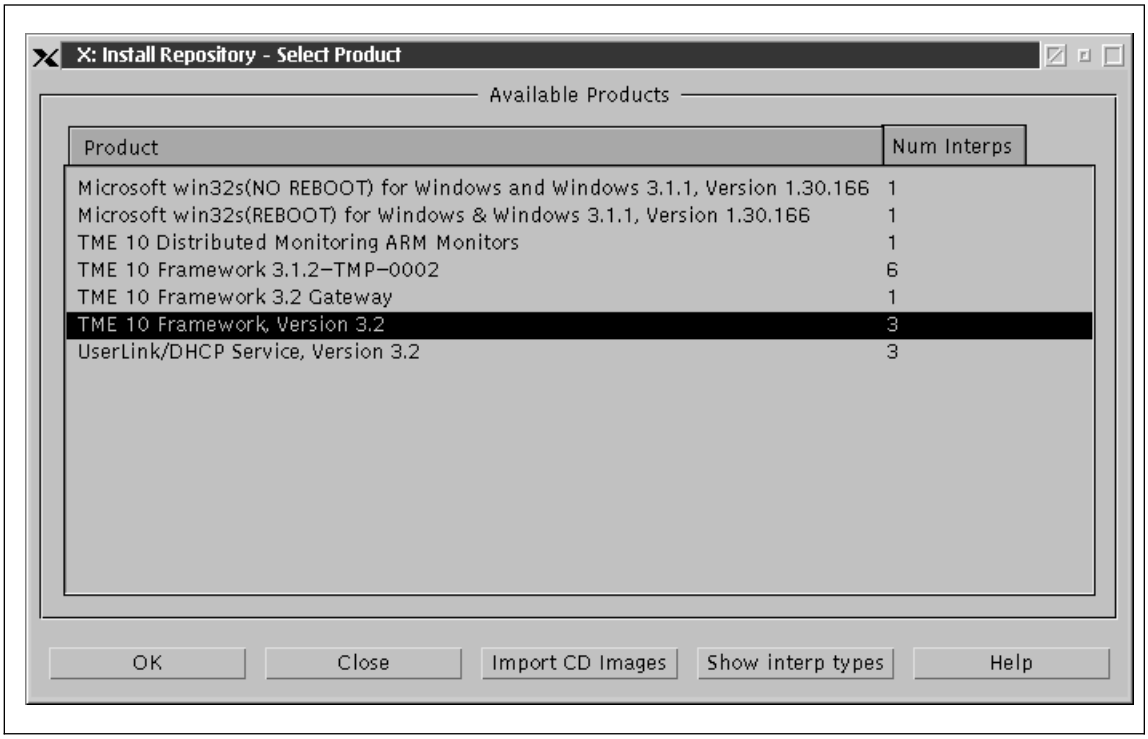

Figure 47. Install Repository - Select Product Dialog

The Install Repository - Select Product dialog box lists the Tivoli products that have been imported into the Tivoli Software Installation Service Install Repository. The list also shows the number of interp types for each product imported into the Install Repository.

Note

If your Framework software is not listed in the Install Repository - Select Product dialog box shown in Figure 47, it means that it has not yet been imported into the Install Repository. For information on importing Tivoli products, or new interp types for existing products into the Install Repository, refer to Section 4.4, “Populating the Install Repository” on page 44

9. To create a Managed Node, highlight the Tivoli Framework product (in this example it is TME 10 Framework Version 3.2) as shown in Figure 47 and select the **OK** option from the Install Repository - Select Product dialog box.

   The TME 10 Software Installation Service - Install details dialog box shown in Figure 48 on page 73 is displayed.

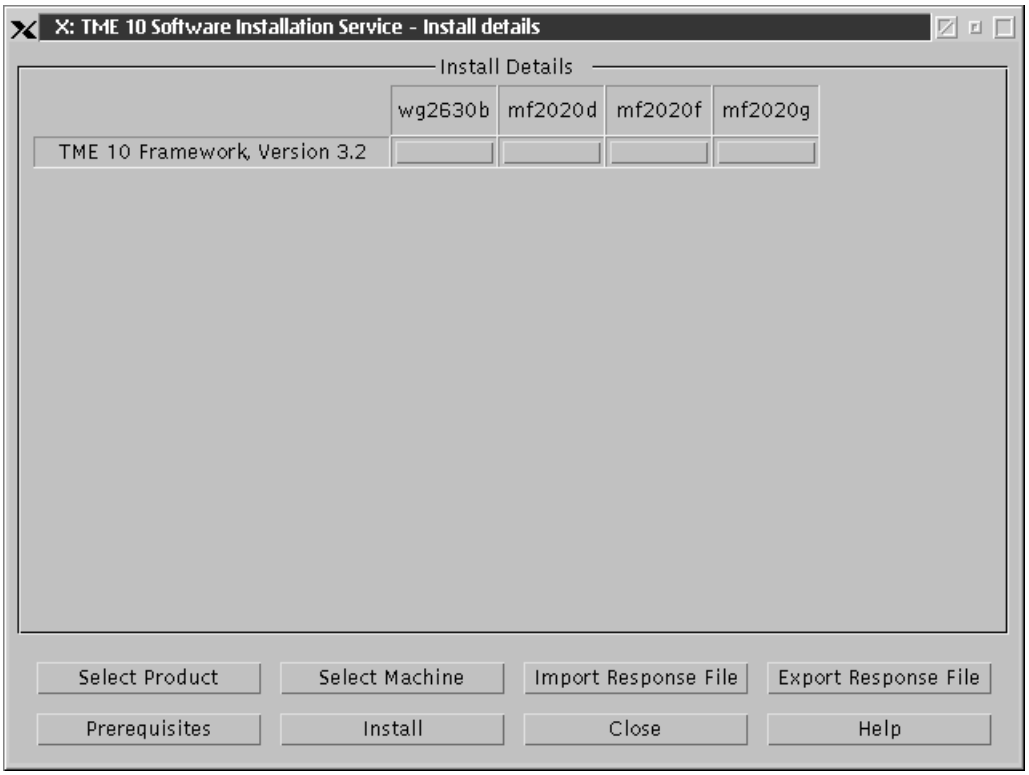

Figure 48. Install Details Showing Selected Products and Nodes

The matrix is now taking shape as follows:

- The selected Tivoli product (TME 10 Framework Version 3.2) is shown in the row on the left side of the matrix.
- The selected machines are displayed in the columns at the top of the matrix.
- There are gray cells at the junctions where the rows and columns meet.

10. To select a product to be installed on a node, you click the gray cell in the row where the product to be installed meets the column of the node onto which it is to be installed. In this example there is one product to be installed on four nodes, so click on the gray cell where the Framework Version 3.2 row meets the column of the first machine which is to be installed as a Managed Node. In this example, we have selected the mf2020g node to be the first node to be configured.

The TME 10 Framework, Version 3.2 attributes on mf2020g dialog box shown in Figure 49 on page 74 is displayed for the selected machine.

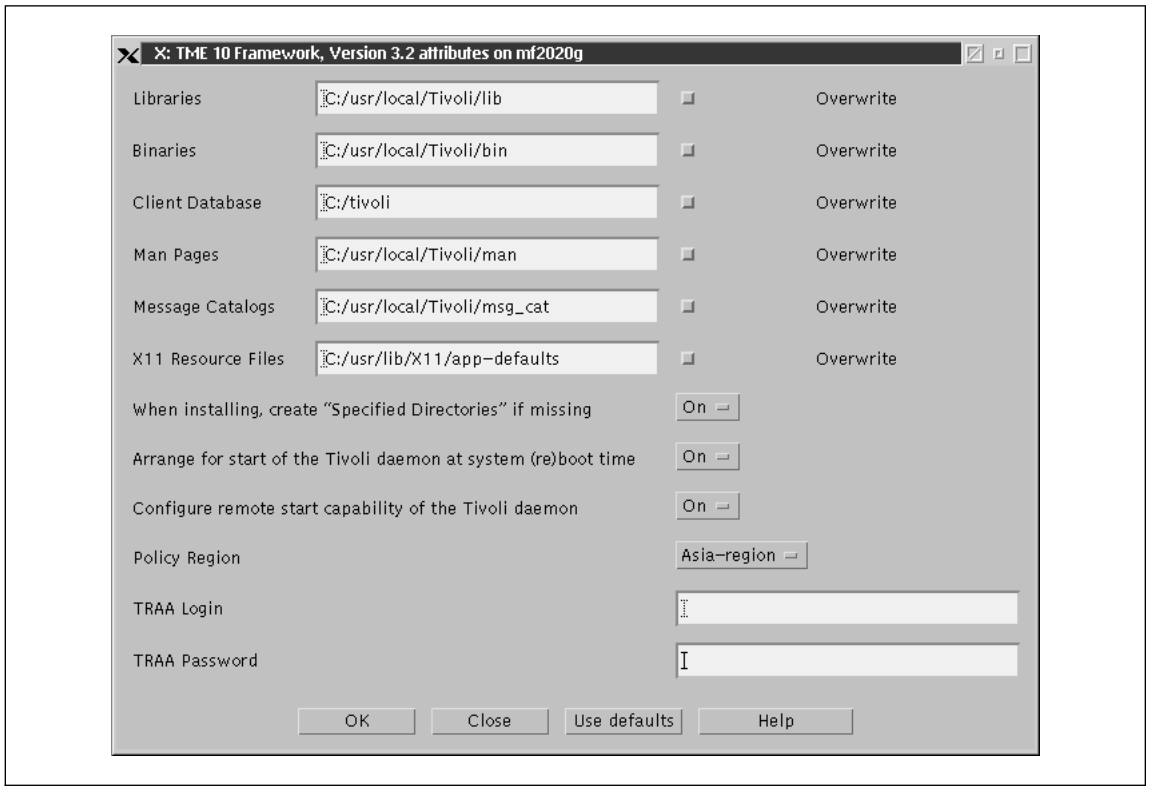

Figure 49. TME 10 Framework, Version 3.2 Attributes on mf2020g

11. The next step is to configure the installation details of the Framework software on the selected machine.

    The dialog box TME 10 Framework, Version 3.2 attributes on mf2020g shown in Figure 49 allows you to configure the following information:

    - Set the installation paths of the following components of the Tivoli Framework Version 3.2:
      - Libraries
      - Binaries
      - Client Database
      - Man Pages
      - Message Catalogs
      - x11 Resource Files (AIX)

There are also check boxes next to each of the path fields. If checked, then existing files in the specified paths are overwritten.

- Create specified directories if missing.
- Arrange for the start of the Tivoli daemon at system boot time.
- Configure remote start capability of the Tivoli daemon.
- Select the Policy Region that the new Managed Node will belong to.
- Specify the TRAA login and password.

In our example, we have left all values default. In your installation, you might want to change some of the default values to conform to your standards.

12. When you have completed the configuration of the information shown in the TME 10 Framework Version 3.2 attributes on mf2020g dialog box for the first machine selected, select the **OK** option.

    The TME 10 Software Installation Service - Install details dialog box is redisplayed as shown in Figure 50 on page 76.

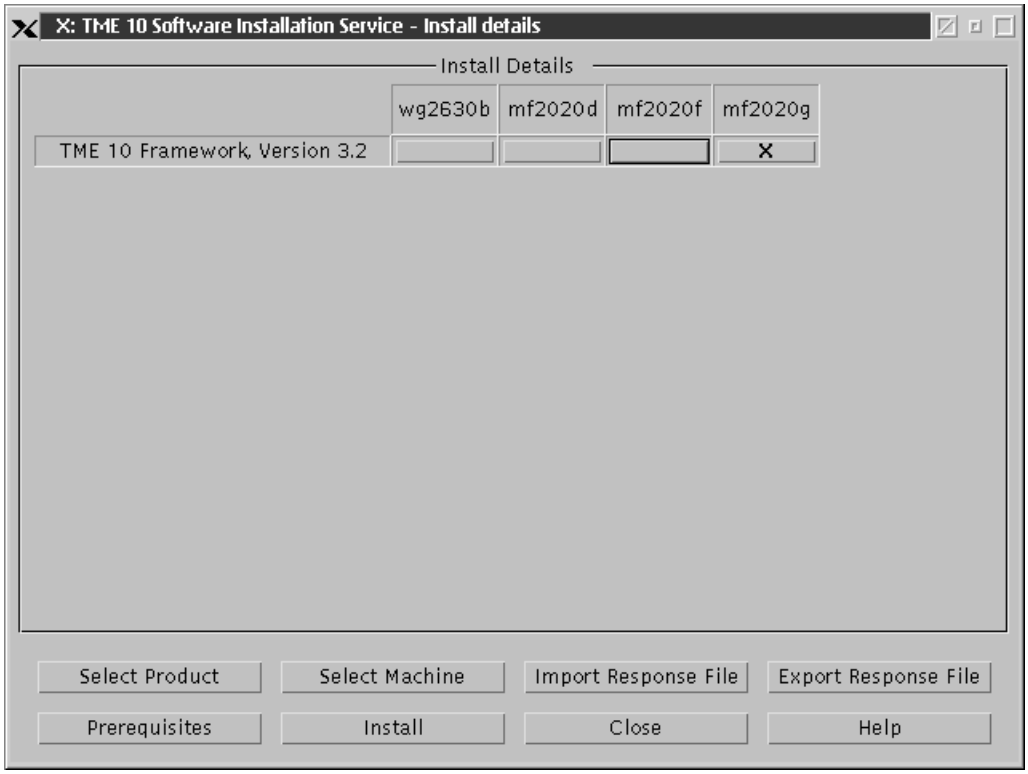

Figure 50. Install Details after Configuring One Node

Notice that on the TME 10 Software Installation Service - Install details dialog box shown in Figure 50, there is an **X** in the gray cell that was previously selected.

This confirms that Tivoli Software Installation Service is prepared to install the TME 10 Framework Version 3.2 product on node mf2020g when the Install option is selected.

To prepare the rest of the machines to have the Framework product installed, repeat the process described in step 10 on page 73 through step 12 on page 75 for each machine.

When this has been done, the TME 10 Software Installation Service - Install details dialog box shown in Figure 51 on page 77 is displayed.

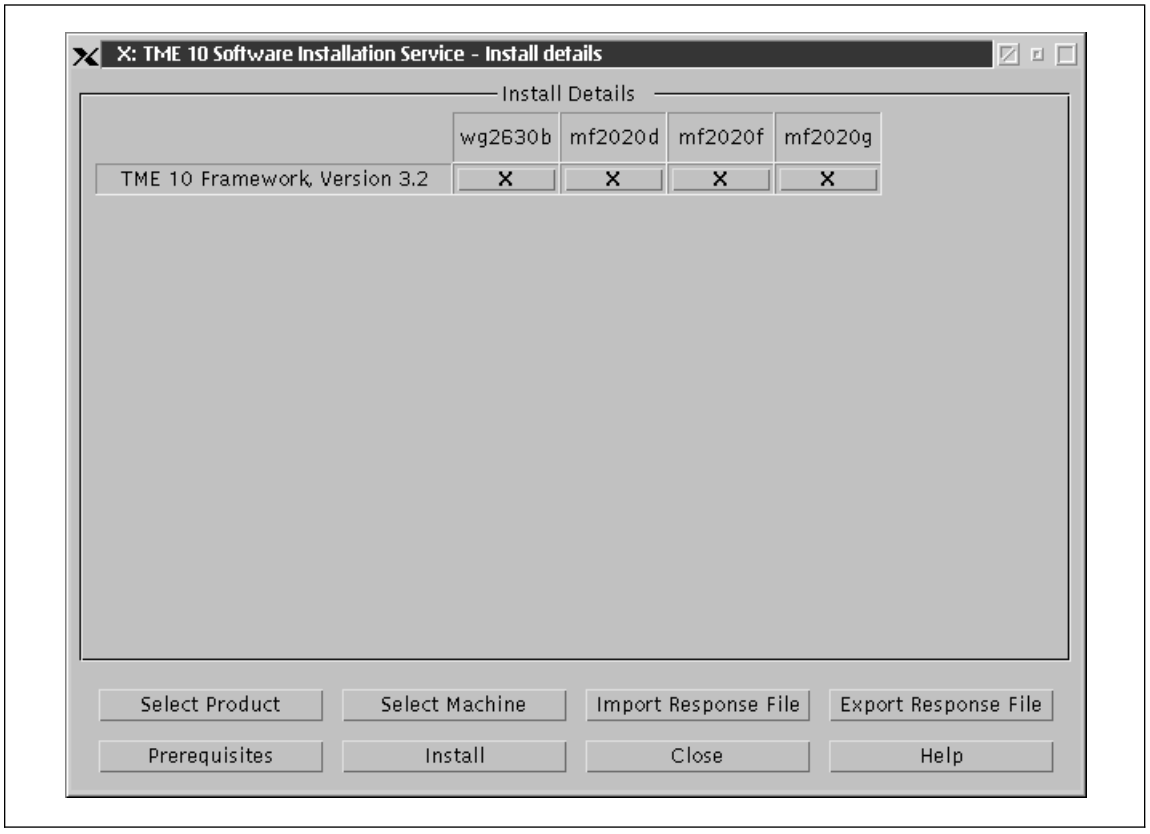

Figure 51. Install Details after Configuring Multiple Nodes

Notice that there is an **X** in all the gray cells displayed in the dialog box. This confirms that all the nodes have been configured and are ready to be installed as Managed Nodes.

13. To start the installation, select the **Install** option at the bottom of the TME 10 Software Installation Service - Install details dialog box shown in Figure 51.

    The Installation Progress dialog box shown in Figure 52 on page 78 is displayed where you can monitor the installation.

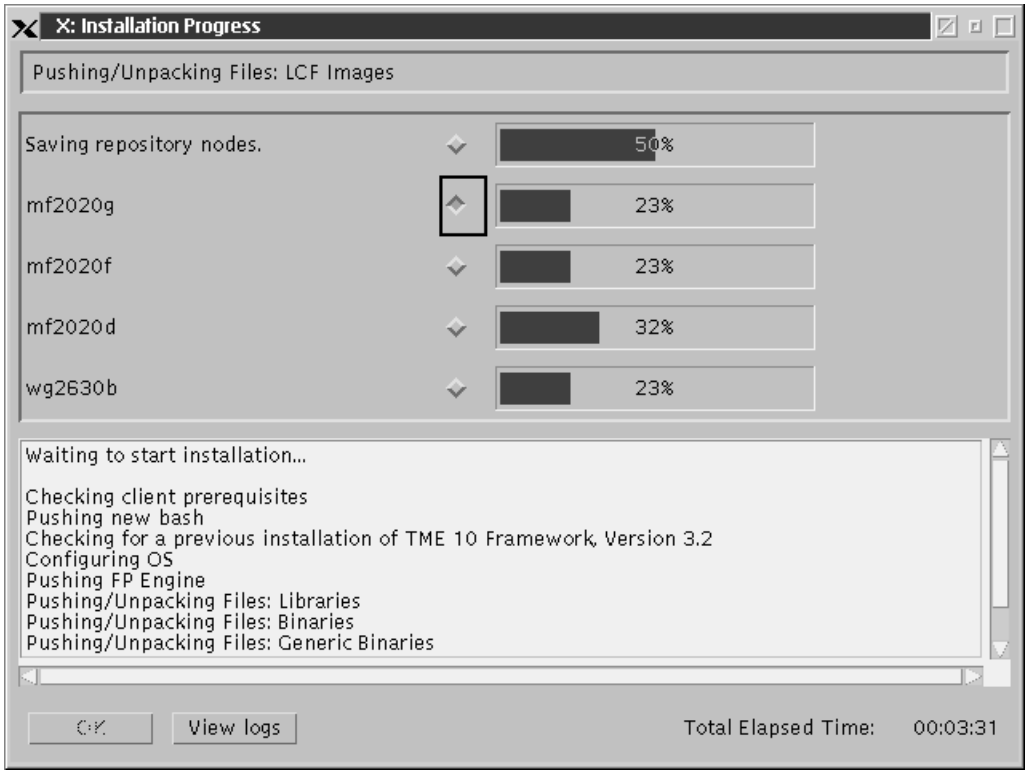

Figure 52. Installation Progress Dialog for Multiple Machines

During the installation of the Tivoli Framework Version 3.2 product, the Installation Progress dialog box shown in Figure 52 displays the following information:

- Slide bars indicating the progress of the installation for each node being installed
- A text area displaying an updated textual description of the installation progress.

As the installation progresses, you can monitor the information displayed in the text box. The text box lists the installation progress for a single node at a time. The installation progress for the different nodes can be viewed by selecting the check box next to the node whose information you want to view.

The text box also displays information on errors that may occur during the installation.

At the end of the installation, the Installation Progress dialog box shown in Figure 53 on page 79 is displayed.

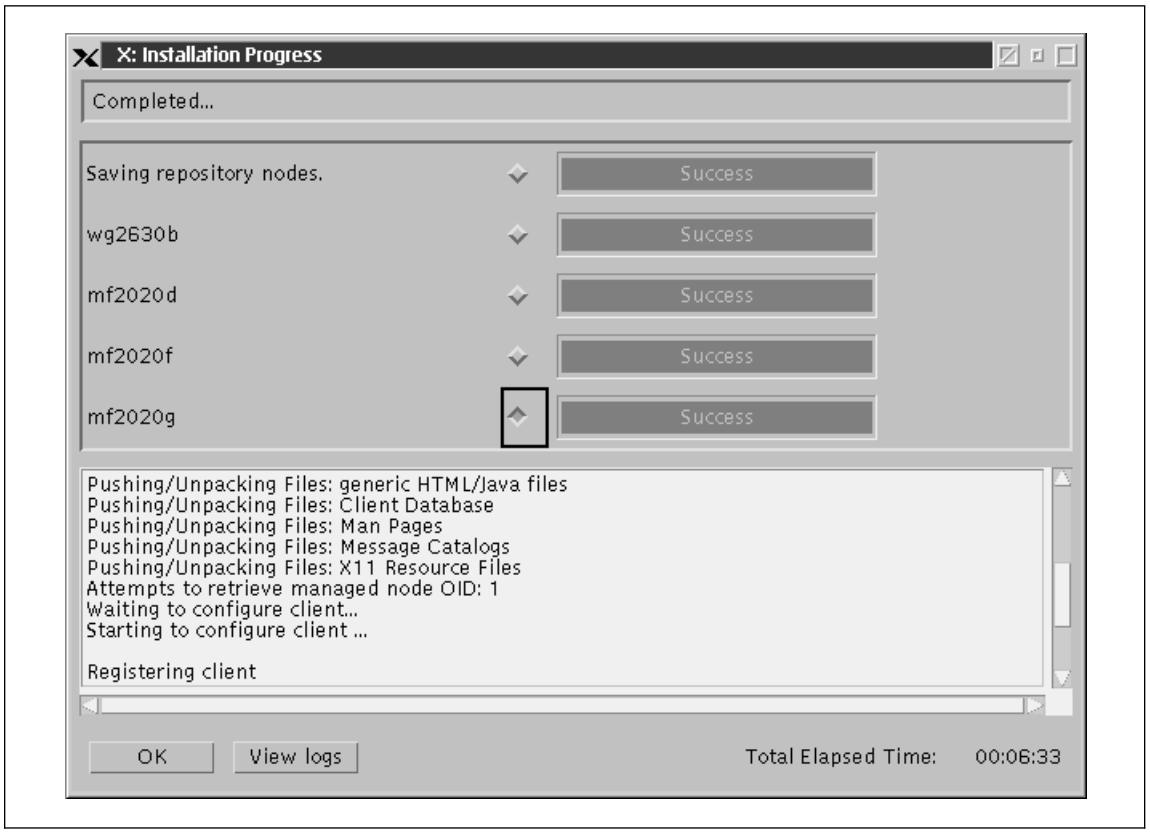

Figure 53. Installation Progress Showing Successful Installation for Multiple Machines

The installation is now complete and the slide bars in the Installation Progress dialog box shown in Figure 53 reflect the status of the installation for each node. The slide bars changes color as follows:

- Green indicates that the installation was successful.
- Red indicates that there were errors and the installation was unsuccessful.

In both cases, the **View logs** option can be selected to display detailed information on the outcome of the installation. For further detailed information on these and other types of logs, refer to Chapter 7, “Tivoli Software Installation Service Logs” on page 167.

14. To conclude the creation of the Managed Nodes, select the **OK** option on the Installation Progress dialog box shown in Figure 53.

The TME 10 Software Installation Service - Install details dialog box shown in Figure 54 on page 80 is displayed.

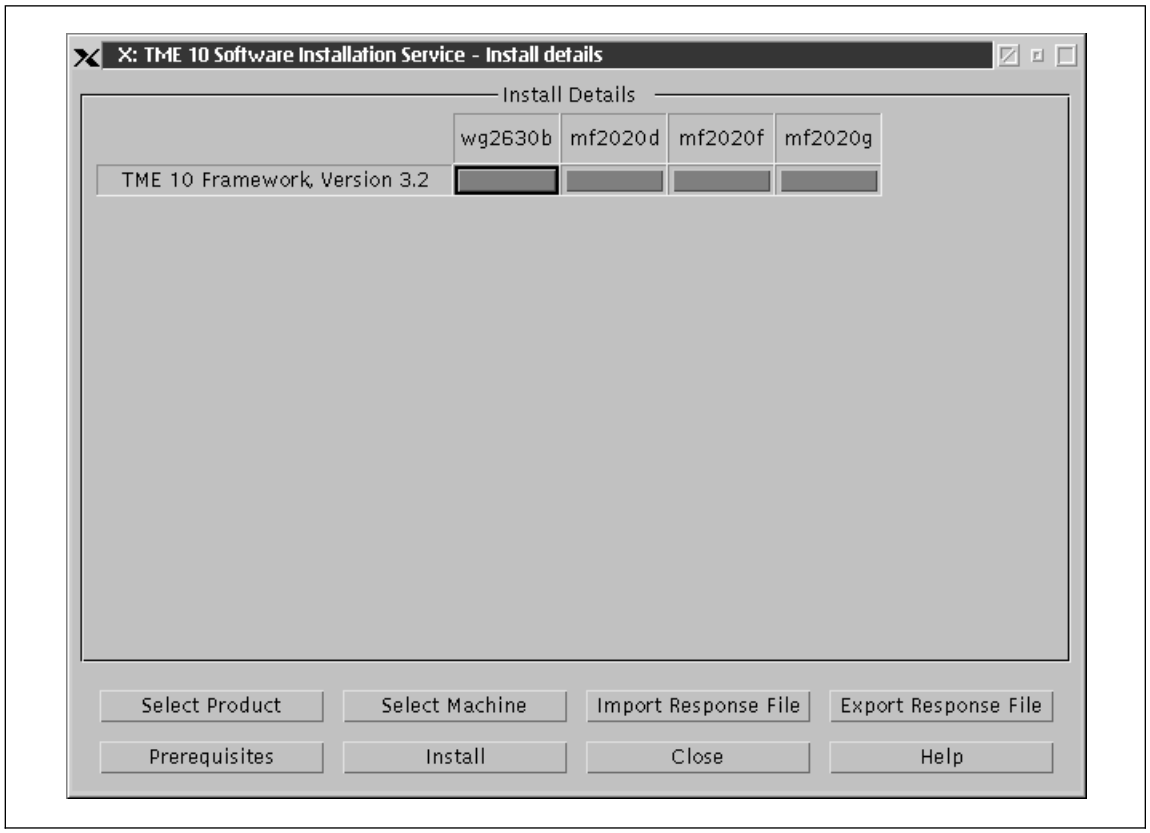

Figure 54. Install Details Showing Products Installed on Multiple Machines

If, as in this example, the installation was successful on all the nodes, the cells at the intersection of the product and the nodes have changed from gray to green. The green color indicates that the product in the row has been installed on the node in the column.

During the creation of the Managed Nodes, the TMR server communicates with the new Managed Nodes and the object database on the TMR server is updated with information pertaining to the new Managed Nodes. A small object database is also created on the new Managed Nodes. At the same time, Tivoli Software Installation Service synchronizes itself with the TMR server to update the list of nodes in the Tivoli Software Installation Service environment. This action makes the newly created Managed Nodes known to the Tivoli Software Installation Service product for further Tivoli product installations. For further detailed information on the

synchronization process, refer to Section 4.3, “Synchronizing with TMR” on page 42.

To verify that the Managed Nodes have been successfully created, open the policy region in which the new Managed Nodes were created from the Tivoli desktop, and an icon should be present for each of the new Managed Nodes, as shown in Figure 55.

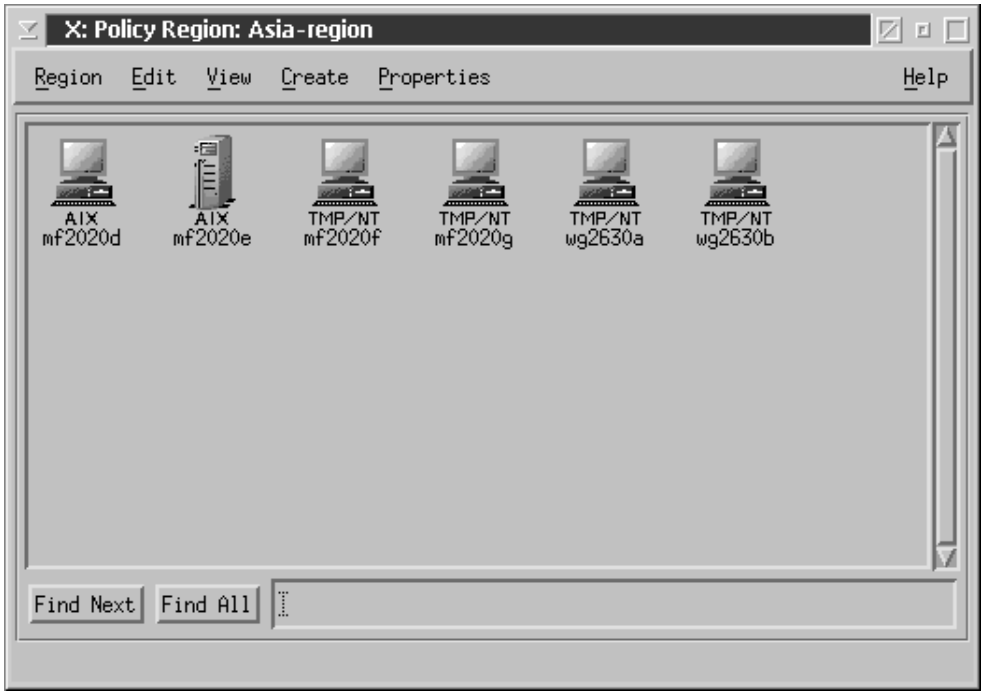

Figure 55. Policy Region Dialog with Multiple Nodes

5.3.3 Installing Endpoint Gateways.

This section gives you a step by step process to create one or more Endpoint Tivoli Managment Gateways using the Tivoli Software Installation Service graphical user interface.

An Endpoint Tivoli Managment Gateway is software that runs on a Managed Node enabling the Managed Node to operate as a gateway between Endpoints and the rest of the Tivoli Management Region. A Tivoli Management Region can have multiple Endpoint Tivoli Managment Gateways. The number of Endpoint Tivoli Managment Gateways required is dependent on the available system resources, the number of Endpoints, network topology and so on.

Currently one TMR server can handle up to 200 Endpoint Tivoli Managment Gateways. One Endpoint Tivoli Managment Gateway can handle a thousand or more Endpoints.

For further detailed information on Endpoint Tivoli Managment Gateways, refer to Chapter 2.1.1.2 "Endpoint Gateways", of redbook *TME 10 Framework Version 3.2: An Introduction to the Lightweight client Framework*, SG24-2025-00.

1. Start the Tivoli Software Installation Service graphical user interface by following the instructions described in Section 5.3.1, “Starting the Graphical User Interface” on page 59. The TME 10 Software Installation Service dialog box as shown in Figure 56 is displayed.

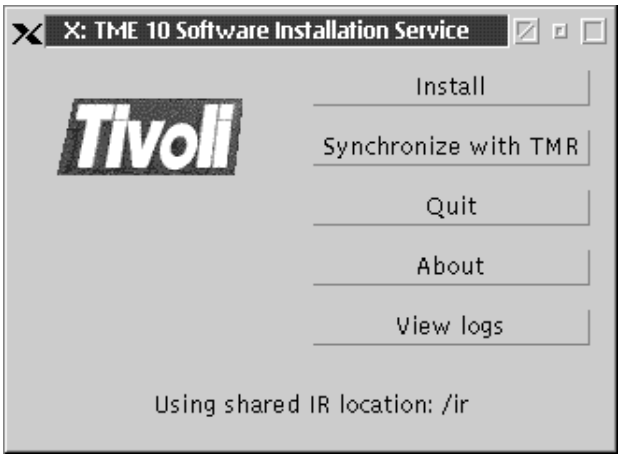

Figure 56. TME 10 Software Installation Service Main Menu

2. Select the **Install** option from the TME 10 Software Installation Service dialog box shown in Figure 56.

   The TME 10 Software Installation Service - Install details dialog box shown in Figure 57 on page 83 is displayed.

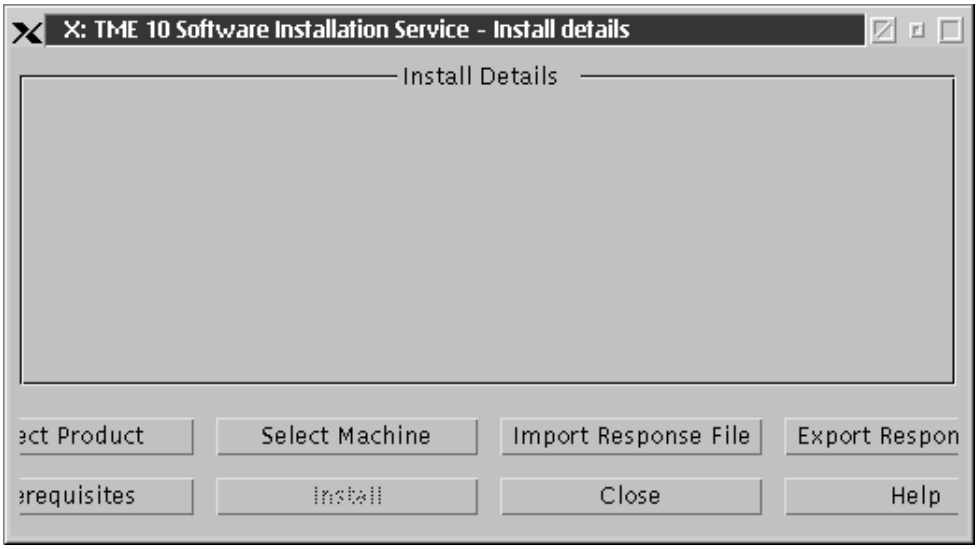

Figure 57. An Empty Software Installation Service - Install Details Dialog

3. The first activity you need to perform is to identify the Managed Nodes you want to install as Endpoint Tivoli Managment Gateways. An Endpoint Tivoli Managment Gateway must be installed on an existing Managed Node. Do this by selecting the **Select Machine** option from the TME 10 Tivoli Software Installation Service - Install details dialog box shown in Figure 57.

   The Install Repository - Select Machine dialog box shown in Figure 58 on page 84 is displayed.

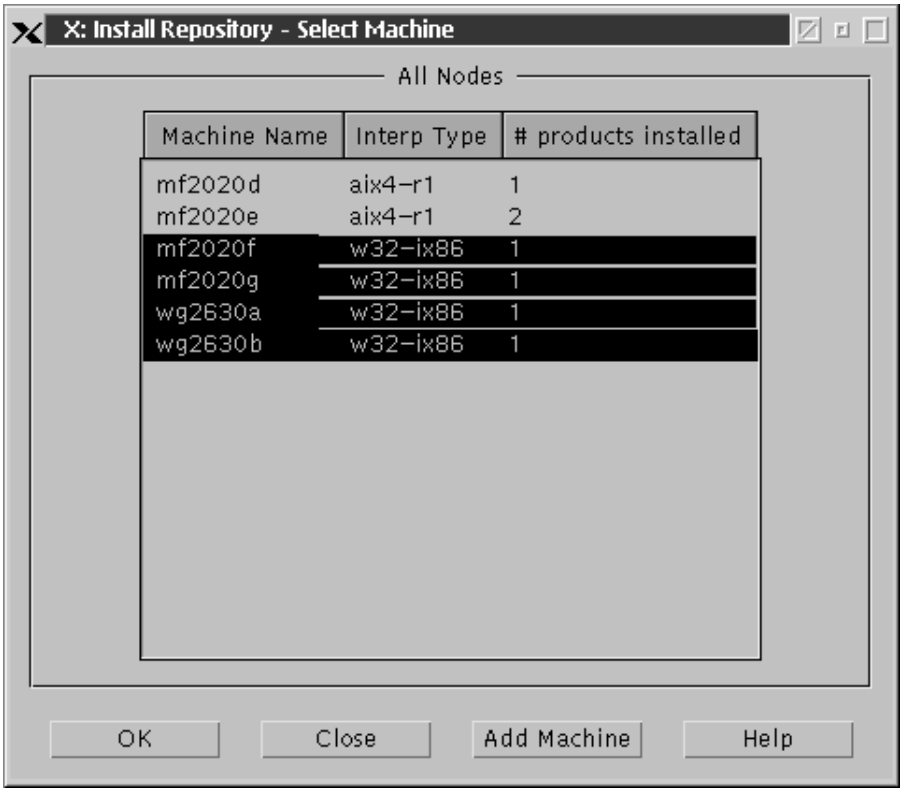

Figure 58. Install Repository - Select Machine Dialog

The Install Repository - Select Machine dialog box lists all the Managed Nodes and PC Managed Nodes in the Tivoli Management Region. The current nodes defined in the region are listed in alphabetical order under the Machine Name column of the dialog box. Then, for each node in the region, the platform (operating system) is listed under the Interp Type column as well as the number of Tivoli products currently installed on each of the nodes under the # products installed column.

In this example, there are a number of Managed Nodes available for selection. We selected the last four Managed Nodes in the list to be created as Endpoint Tivoli Managment Gateways by highlighting the nodes and selecting the **OK** option from the Install Repository - Select Machine dialog box shown in Figure 58.

The TME 10 Software Installation Service - Install details dialog box shown in Figure 59 on page 85 is displayed.

If you were only creating one Endpoint Gateway, only one Managed Node would be selected from the list of available machines.

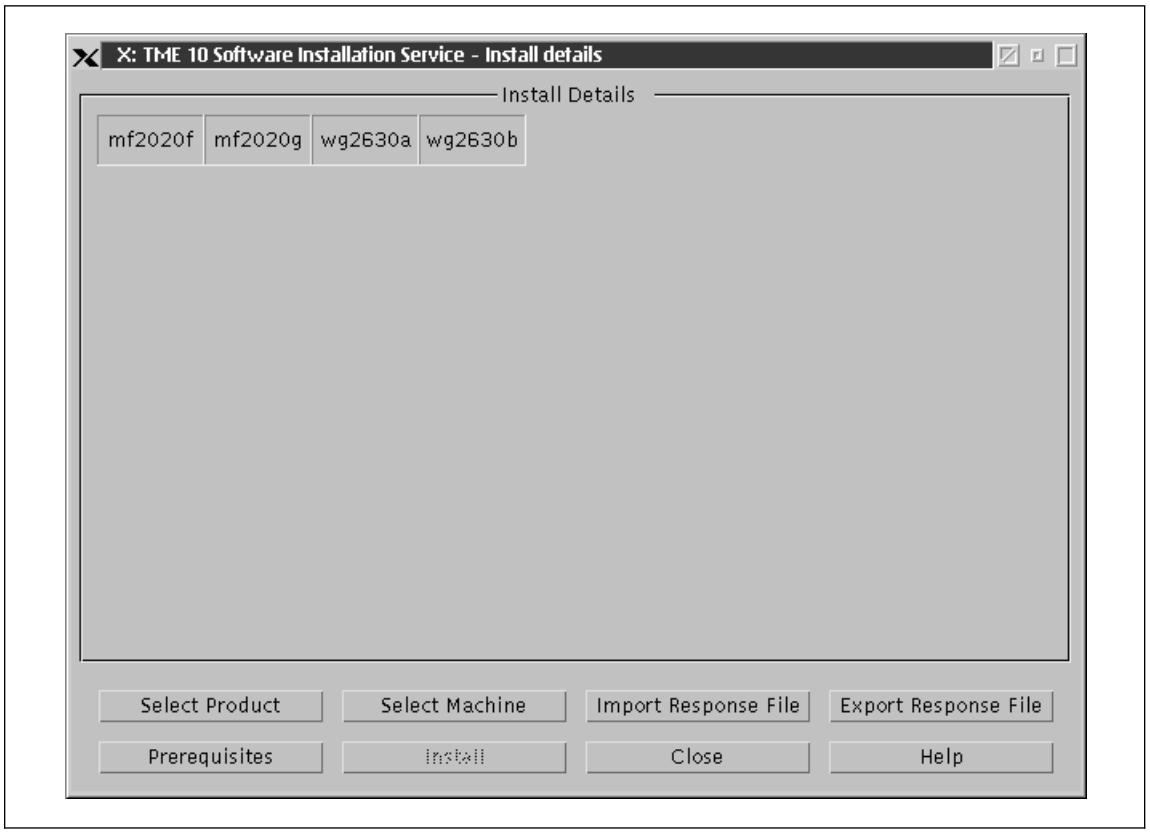

Figure 59. Install Details Showing Selected Nodes

The selected nodes now appear in what is the start of a matrix in the Install Details area of the TME 10 Software Installation Service - Install detail dialog. When complete, the matrix displays the selected nodes in the columns and the products to be installed on the nodes in the rows.

4. To create these machines as Endpoint Gateways, the Tivoli Framework Gateway product needs to be installed on the selected nodes. To initiate this activity, select the **Select Product** option from the TME 10 Software Installation Service - Install details dialog box shown in Figure 59.

   The Install Repository - Select Product dialog box shown in Figure 60 on page 86 is displayed.

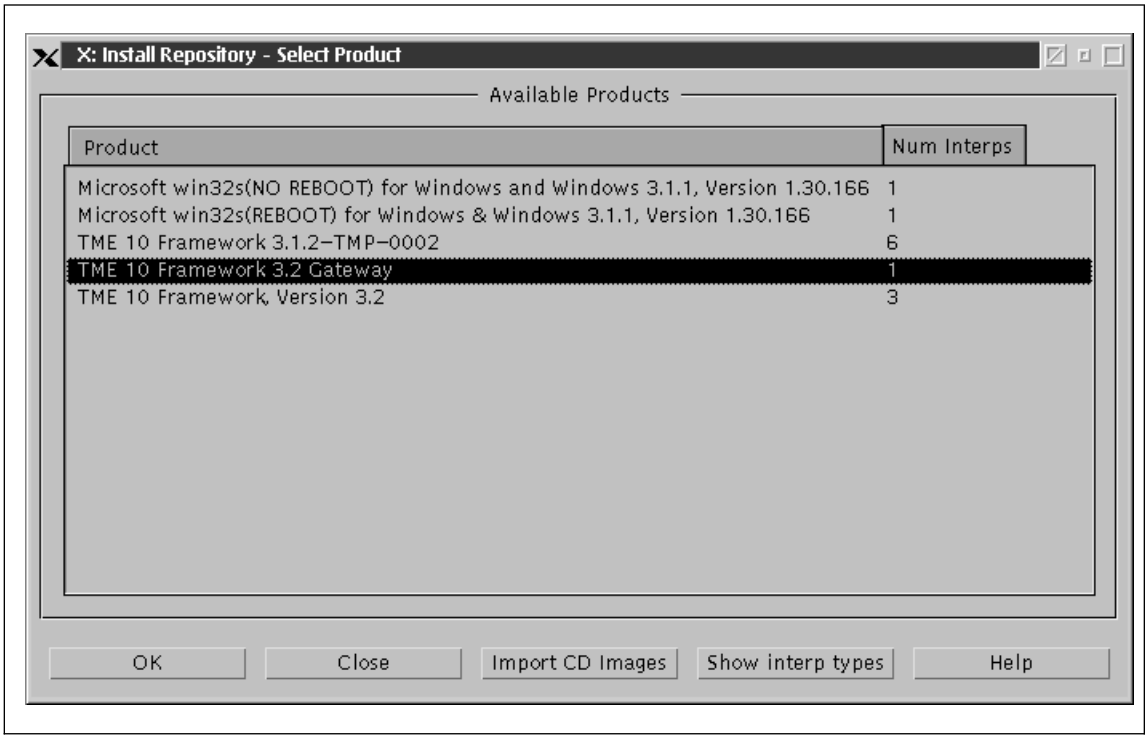

Figure 60. Install Repository - Select Product Dialog

The Install Repository - Select Product dialog box lists the Tivoli products that have been imported into the Tivoli Software Installation Service Install Repository. The list also shows the number of interp types for each product imported into the Install Repository.

Note

If your TME 10 Framework 3.2 Gateway software product is not listed in the Install Repository - Select Product dialog box shown in Figure 60, it means that it has not yet been imported into the Install Repository. For information on importing Tivoli products, or new interp types for existing products into the Install Repository, refer to Section 4.4, “Populating the Install Repository” on page 44

5. To create an Endpoint Tivoli Managment Gateway, highlight the **TME 10 Framework 3.2 Gateway** product and select the **OK** option from the Install Repository - Select Product dialog box as shown in Figure 60.

   The TME 10 Software Installation Service - Install details dialog box shown in Figure 61 on page 87 is displayed.

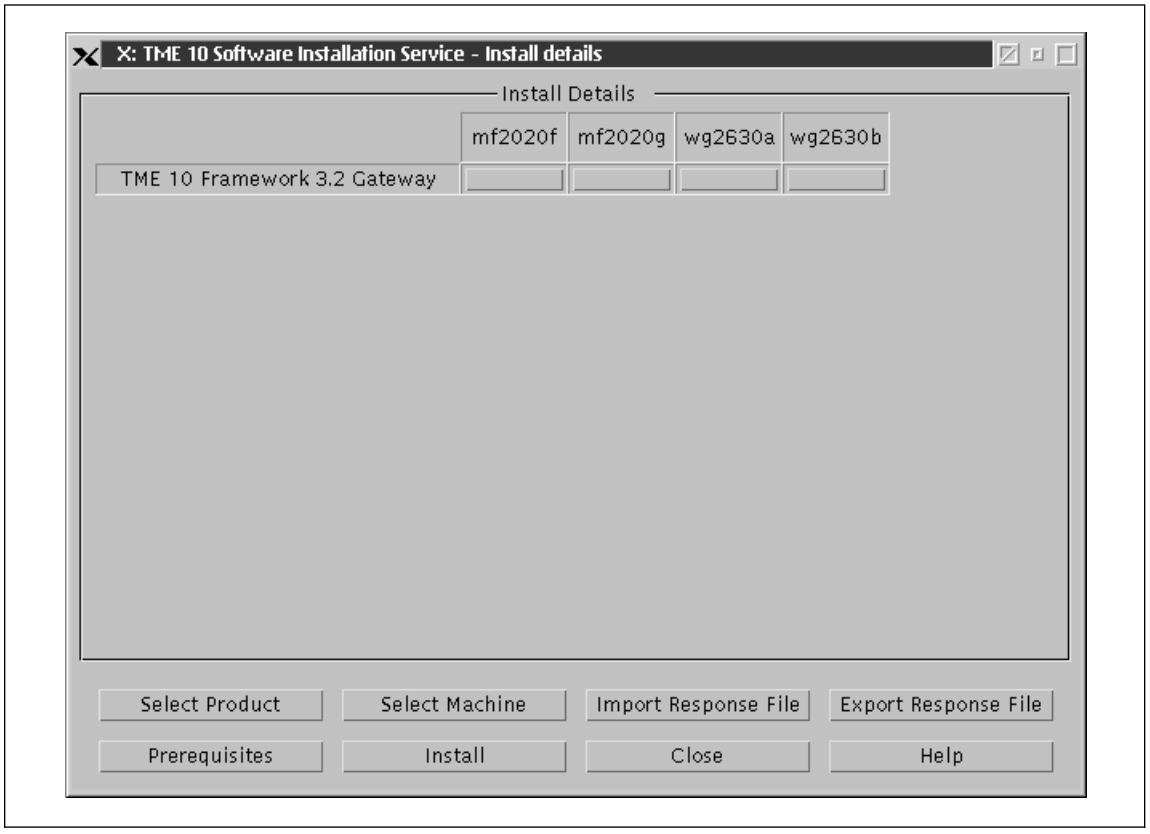

Figure 61. Install Details Showing Selected Nodes and Products

The matrix is now taking shape as follows:

- The selected Tivoli product (TME 10 Framework 3.2 Gateway) is shown in the row on the left side of the matrix
- The selected machines (mf2020f, mf2020g, wg2630a and wg2630b) are displayed in the columns at the top of the matrix
- There are gray cells at the junctions where the rows and columns meet

6. To select a product to be installed on a node, you click the gray cell in the row where the product to be installed meets the column of the node onto which it is to be installed. In this example there is one product to be installed on four nodes, so click on the gray cell where the TME 10 Framework 3.2 Gateway row meets the column of the first machine that is to be installed as an Endpoint Gateway. In this example, we have selected the mf2020f node to be the first node to be configured.

The TME 10 Framework 3.2 Gateway attributes on mf2020f dialog box shown in Figure 62 on page 88 is displayed for the selected machine.

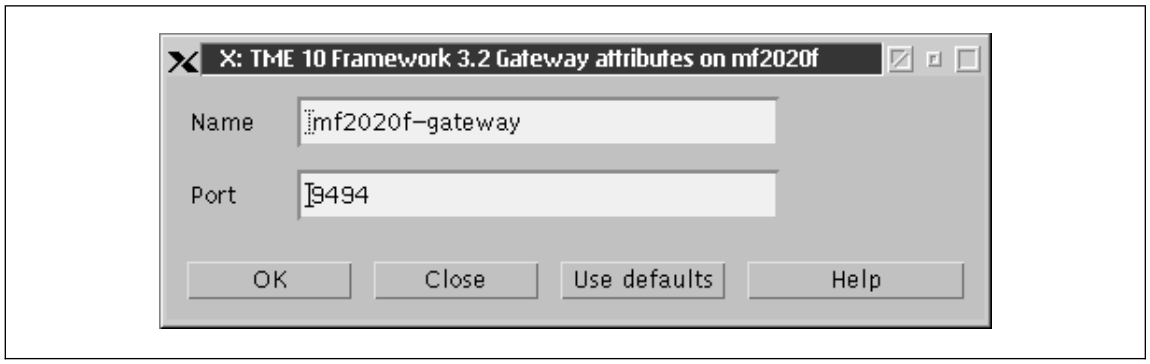

Figure 62. TME 10 Framework 3.2 Gateway Attributes on mf2020f

The TME 10 Framework 3.2 Tivoli Managment Gateway attributes on mf2020f dialog box shown in Figure 62 allows you to configure two options as follows:

Name Enter a unique name for the Endpoint Gateway. This name is the label of the Tivoli Managment Gateway icon on the Tivoli desktop

Port Enter the port number that the Gateway will use to communicate with the Endpoints. The default is 9494. (You cannot use the same port number used by the Managed Node)

In our example, we have left all values default. In your installation you might want to change some of the default values to conform to your standards.

7. When you have completed the configuration of the information shown in the TME 10 Framework 3.2 Gateway attributes on mf2020f dialog box, you must select the **OK** option to return to the TME 10 Software Installation Service - Install details dialog box shown in Figure 63 on page 89. From this dialog you can continue with the configuration of the other Managed Nodes to be created as Endpoint Tivoli Managment Gateways.

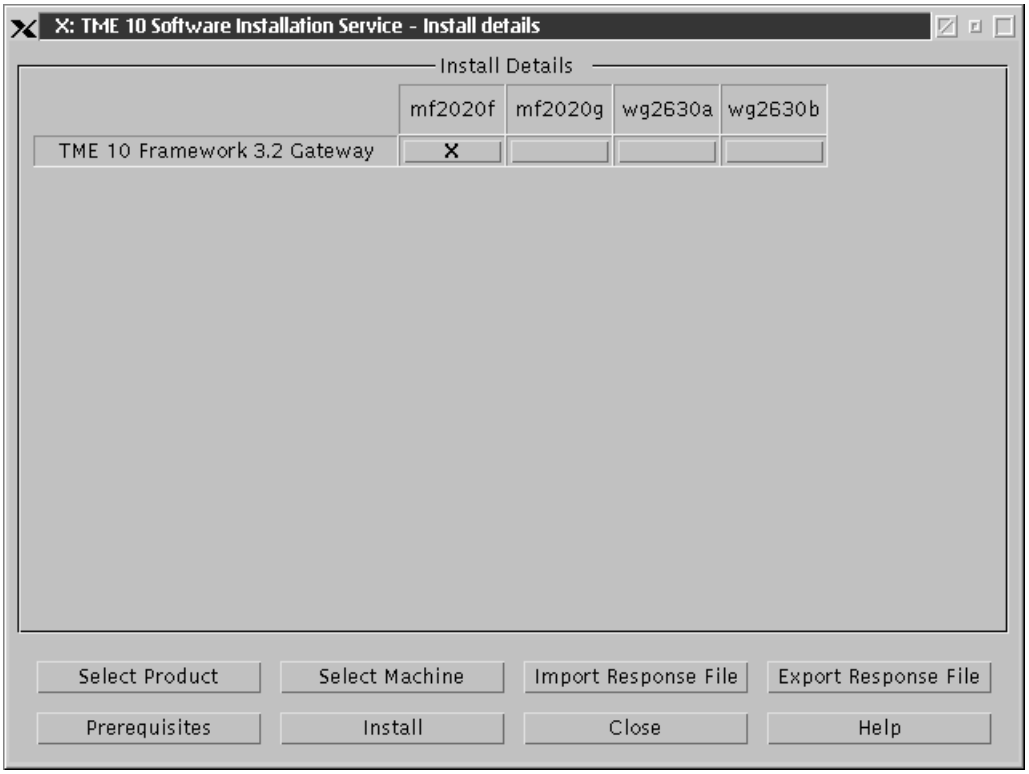

Figure 63. Install Details Showing One Node Configured

Notice that on the TME 10 Software Installation Service - Install details dialog box shown in Figure 63, there is an **X** in the gray cell that was previously selected.

This confirms that Tivoli Software Installation Service is prepared to install the TME 10 Framework 3.2 Gateway product on node mf2020f when the Install option is selected.

To prepare the rest of the machines to have the Gateway product installed, repeat the process described in step 6 on page 87 through step 7 on page 88 for each machine.

When this has been done, the TME 10 Software Installation Service - Install details dialog box shown in Figure 64 on page 90 is displayed.

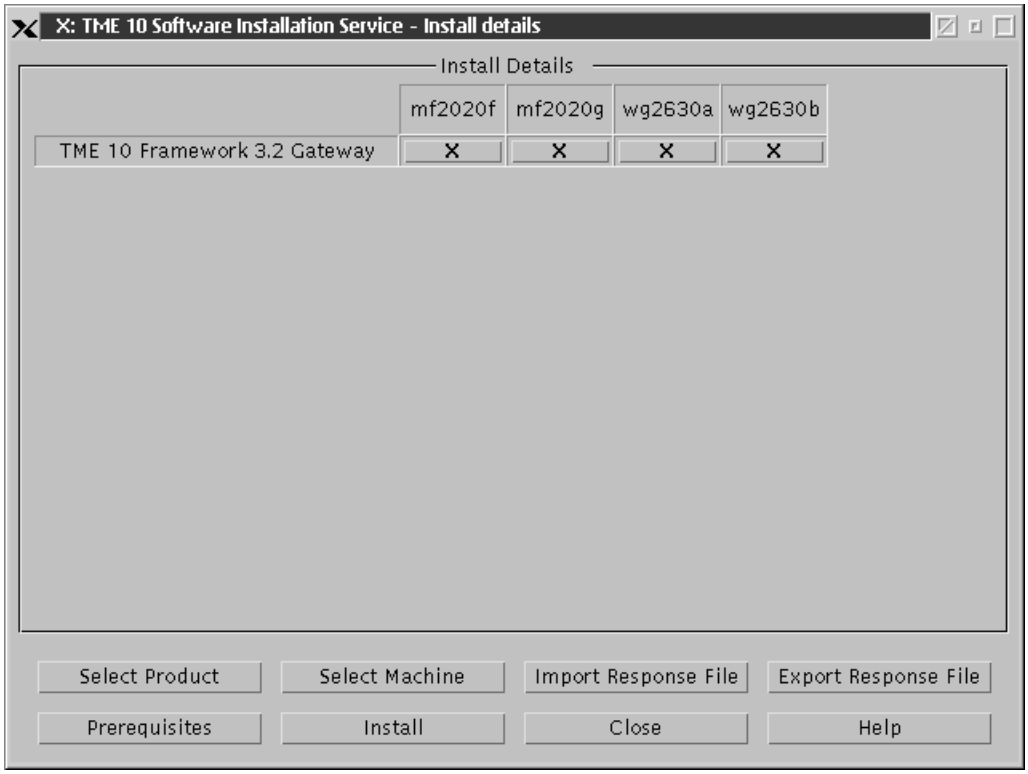

Figure 64. Install Details Showing Multiple Nodes Configured

Notice that there is an **X** in all the gray cells displayed in the dialog box. This confirms that all the nodes have been configured and are ready to be installed as Endpoint Gateways.

8. To start the installation, select the **Install** option at the bottom of the TME 10 Software Installation Service - Install details dialog box shown in Figure 64.

   The Installation Progress dialog box shown in Figure 65 on page 91 is displayed where you can monitor the installation.

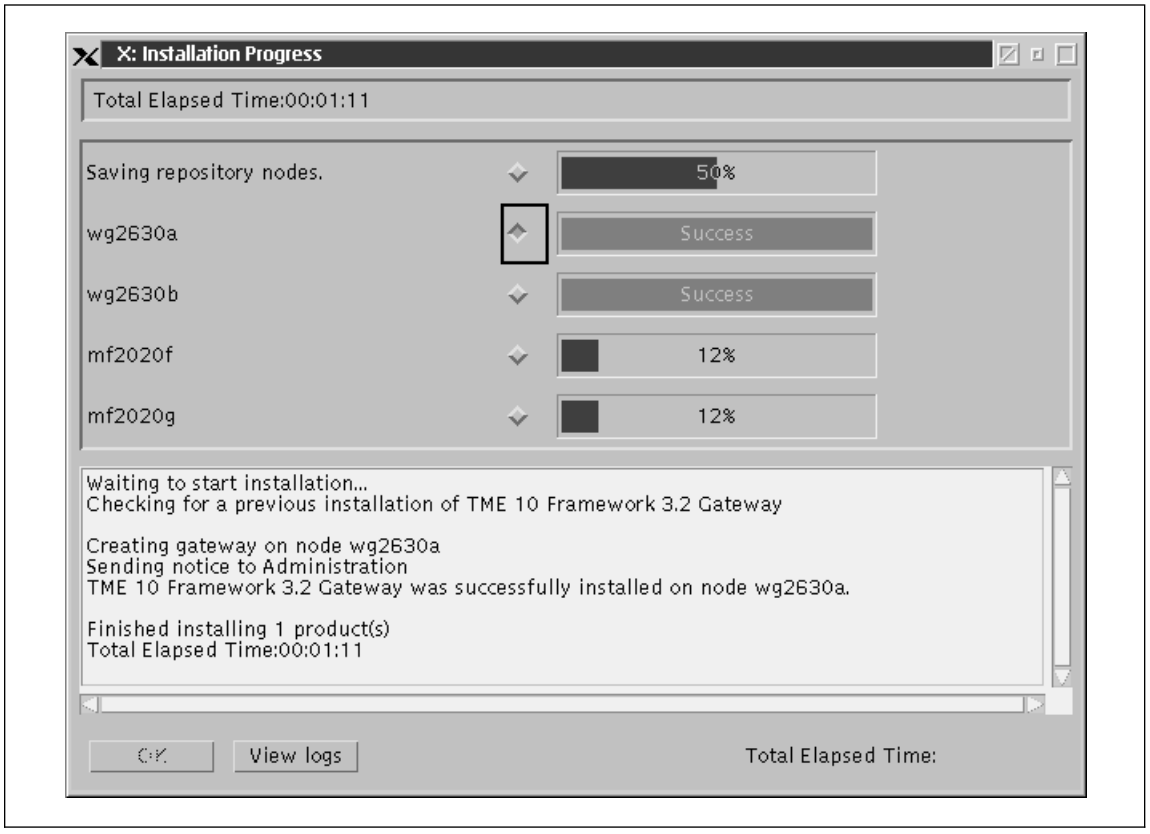

Figure 65. Installation Progress Dialog

During the installation of the TME 10 Framework 3.2 Gateway product, the Installation Progress dialog box shown in Figure 65 displays the following information:

- Slide bars indicating the progress of the installation for each node being installed
- A text area displaying an updated textual description of the installation progress

As the installation progresses, you can monitor the information displayed in the text box. The text box lists the installation progress for a single node at a time. The installation progress for the different nodes can be viewed by selecting the check box next to the node whose information you want to view.

The text box also displays information on errors that may occur during the installation.

At the end of the installation, the Installation Progress dialog box shown in Figure 66 on page 92 is displayed.

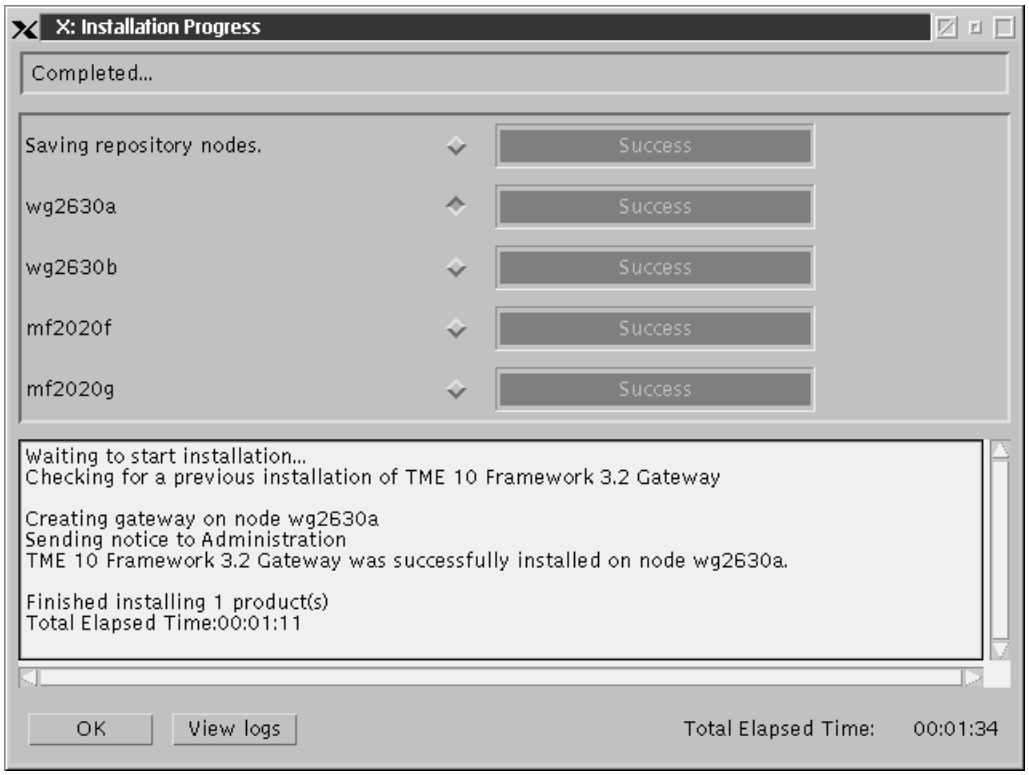

Figure 66. Installation Progress Showing Successful Installation

The installation is now complete and the slide bars in the Installation Progress dialog box as shown in Figure 66 reflect the status of the installation for each node. The slide bars change color as follows:

- Green indicates that the installation was successful.
- Red indicates that there were errors and the installation was unsuccessful.

In both cases, the **View logs** option can be selected to display detailed information on the outcome of the installation. For further detailed information on these and other types of logs, refer to Chapter 7, “Tivoli Software Installation Service Logs” on page 167.

9. To conclude the creation of the Endpoint Gateways, select the **OK** option on the Installation Progress dialog box shown in Figure 66.

The TME 10 Software Installation Service - Install details dialog box shown in Figure 67 on page 93 is displayed.

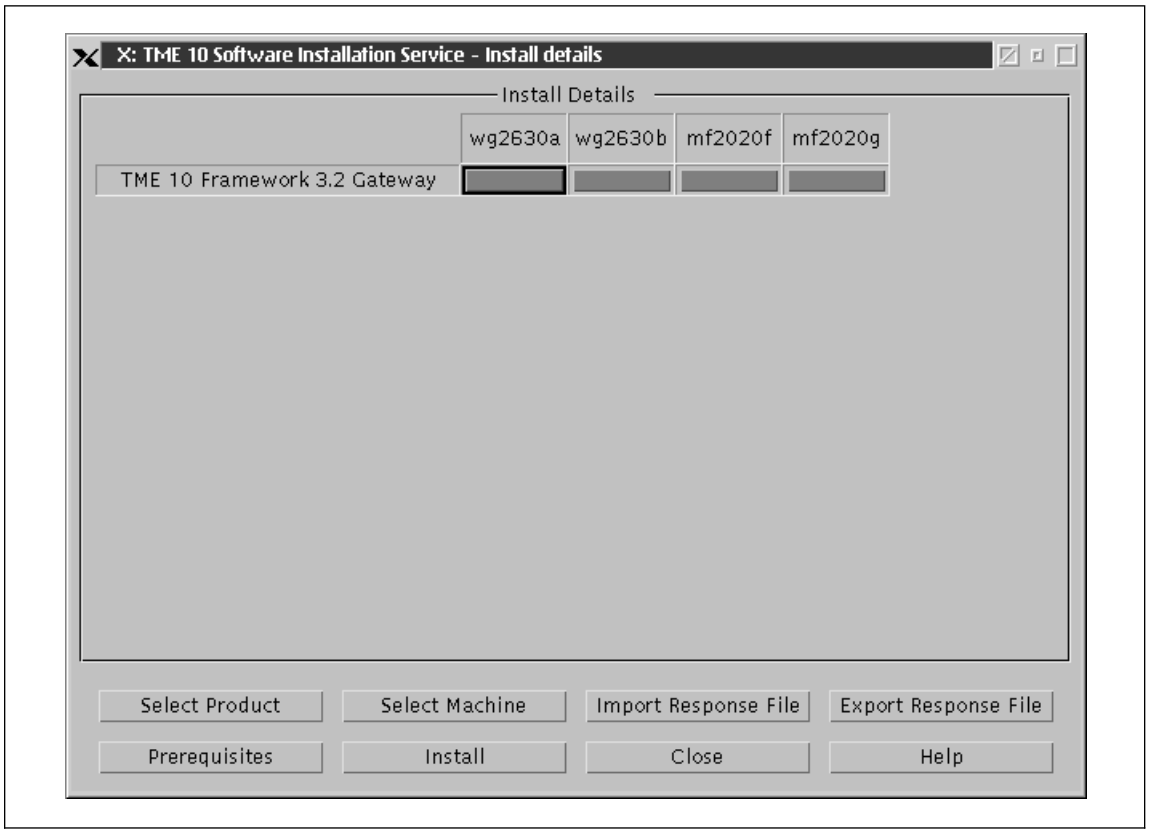

Figure 67. Install Details Showing Products Installed

If, as in this example, the installation was successful on all the nodes, the cells at the intersection of the product and the nodes change from gray to green. The green color indicates that the product in the row has been installed on the node in the column.

To verify that the Endpoint Gateway has been successfully created, open the Tivoli desktop shown in Figure 68 on page 94.

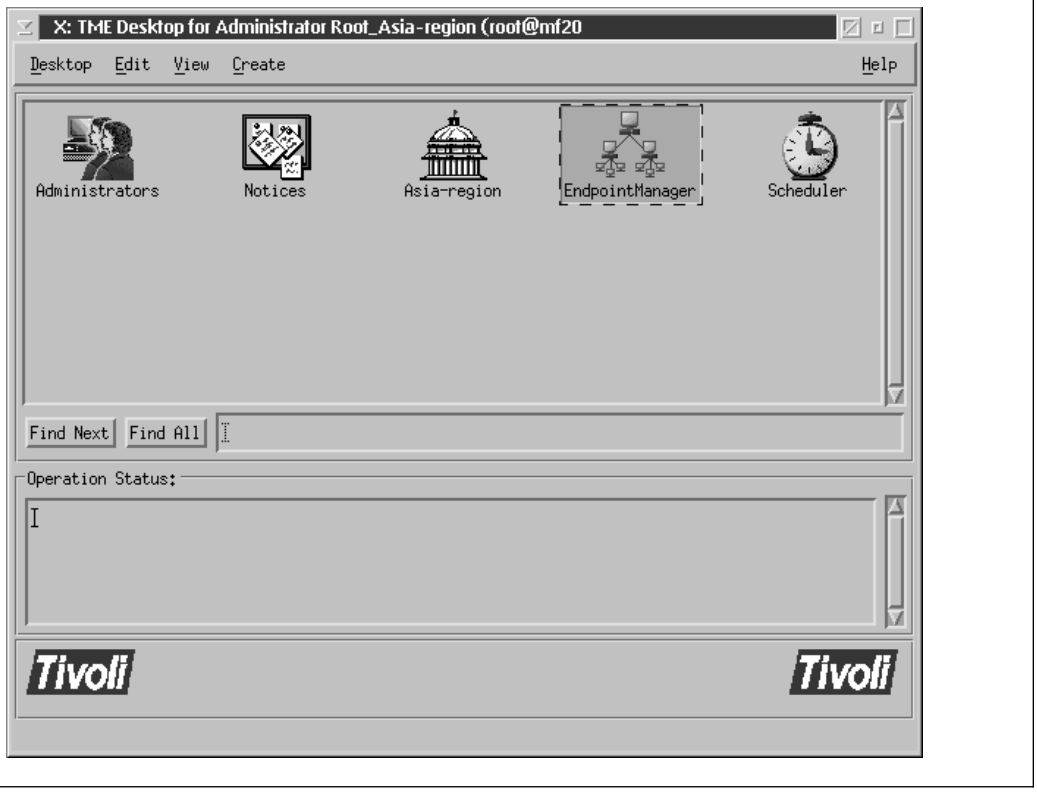

Figure 68. Tivoli Desktop with Endpoint Manager Selected

From within the Tivoli desktop you can view the Endpoint Gateways that exist for the region, by opening the **Endpoint Manager** option shown in the TME 10 Tivoli Desktop dialog box in Figure 68.

The Gateway List dialog box shown in Figure 69 on page 95 is displayed.

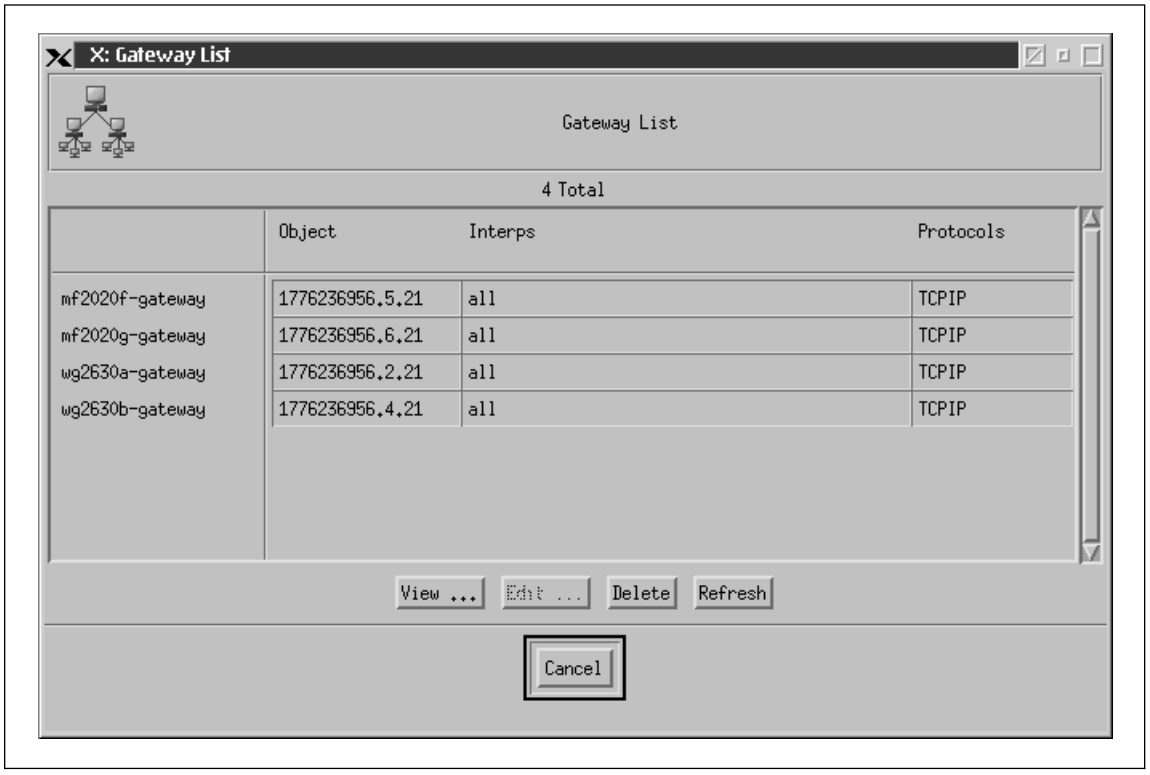

Figure 69. Endpoint Manager Gateway List

All the Managed Nodes that have been created as Endpoint Tivoli Managment Gateways appear in the list.

5.3.4 Installing Endpoints

This section gives you the step by step process you can follow to create one or more Endpoints using the Tivoli Software Installation Service graphical user interface.

1. Start the Tivoli Software Installation Service graphical user interface by following the instructions described in Section 5.3.1, “Starting the Graphical User Interface” on page 59.

   The TME 10 Software Installation Service dialog box shown in Figure 70 on page 96 is displayed.

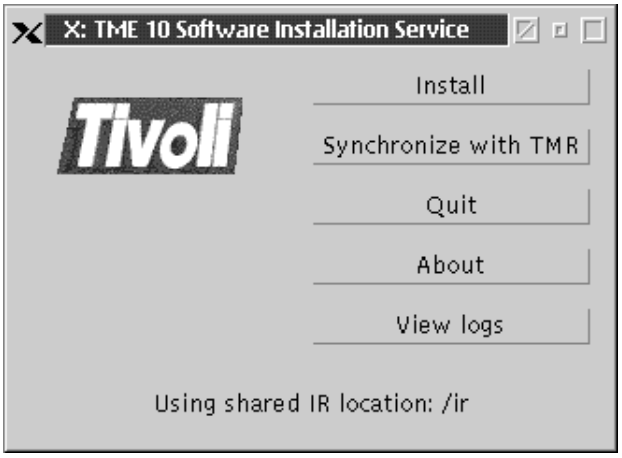

Figure 70. Software Installation Service Main Menu

2. Select the **Install** option from the TME 10 Software Installation Service dialog box shown in Figure 70.

   The TME 10 Software Installation Service - Install details dialog box shown in Figure 71 is displayed.

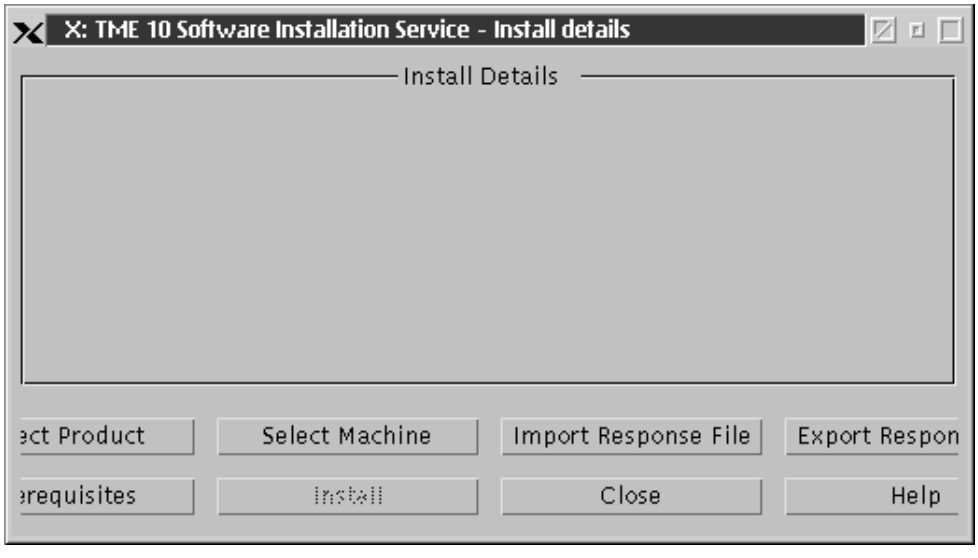

Figure 71. Software Installation Service - Install Details

3. The first activity you need to perform is to identify and select the Endpoint products to be installed on the Endpoint targets. You do this by selecting the **Select Product** option from the TME 10 Software Installation Service - Install details dialog box shown in Figure 71.

   The Install Repository - Select Product dialog box shown in Figure 72 is displayed.

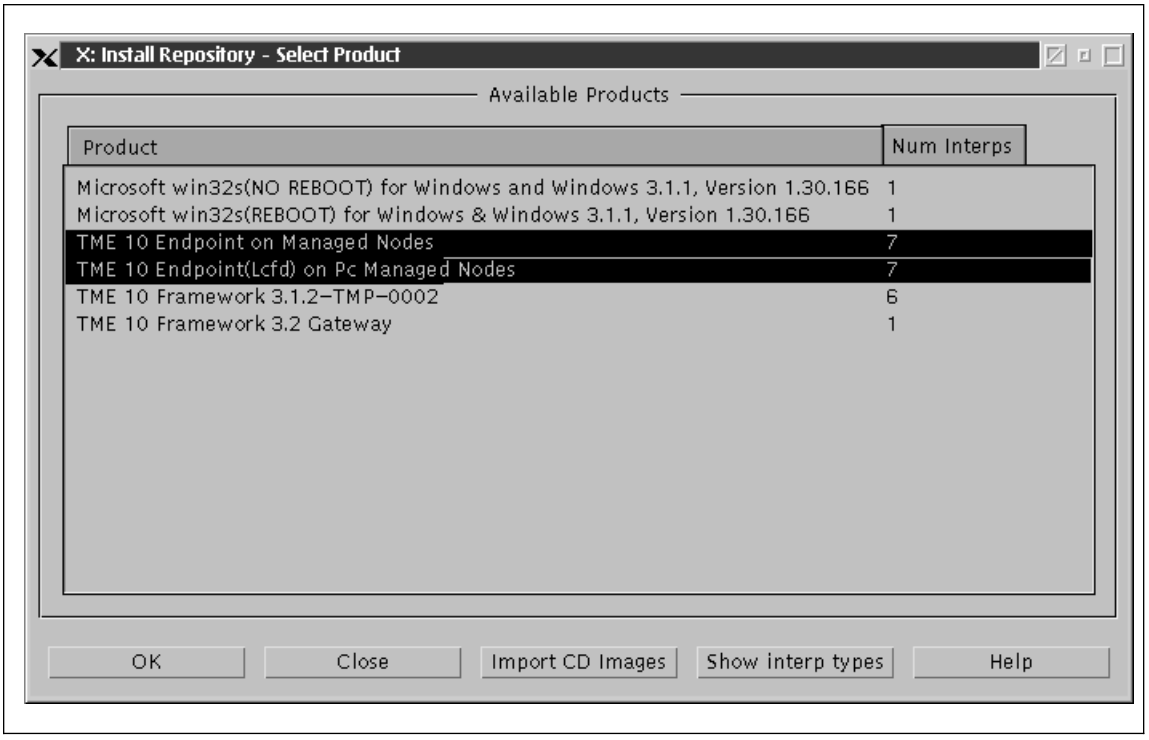

Figure 72. Install Repository - Select Product Dialog with Products Selected

There are two different products that can be used for the installation of Endpoints.

- TME 10 Endpoint on Managed Nodes
- TME 10 Endpoint (Lcfd) on PC Managed Nodes

The TME 10 Endpoint on Managed Nodes product is used for creating existing Managed Nodes as Endpoints. The TME 10 Endpoint on Managed Nodes product is also used for creating pristine UNIX and Windows NT machines as Endpoints.

The TME 10 Endpoint (Lcfd) on PC Managed Nodes product is used to create Endpoints on existing PC Managed Nodes.

In this example, we are creating Endpoints on existing Managed Nodes and PC Managed Nodes, and we are also creating Endpoints on pristine UNIX and Windows NT machines. To do this, highlight both the TME 10 Endpoint on Managed Nodes and TME 10 Endpoint(Lcfd) on PC Managed Nodes products as shown in Figure 72 on page 97. Then select the **OK** option in the Install Repository - Select Product dialog box.

The TME 10 Software Installation Service - Install details dialog box shown in Figure 73 is displayed.

Note

If your Endpoint software is not listed in the Install Repository - Select Product dialog box shown in Figure 72 on page 97, it means that it has not yet been imported into the Install Repository. For information on importing Tivoli products, or new interp types for existing products into the Install Repository, refer to Section 4.4, “Populating the Install Repository” on page 44.

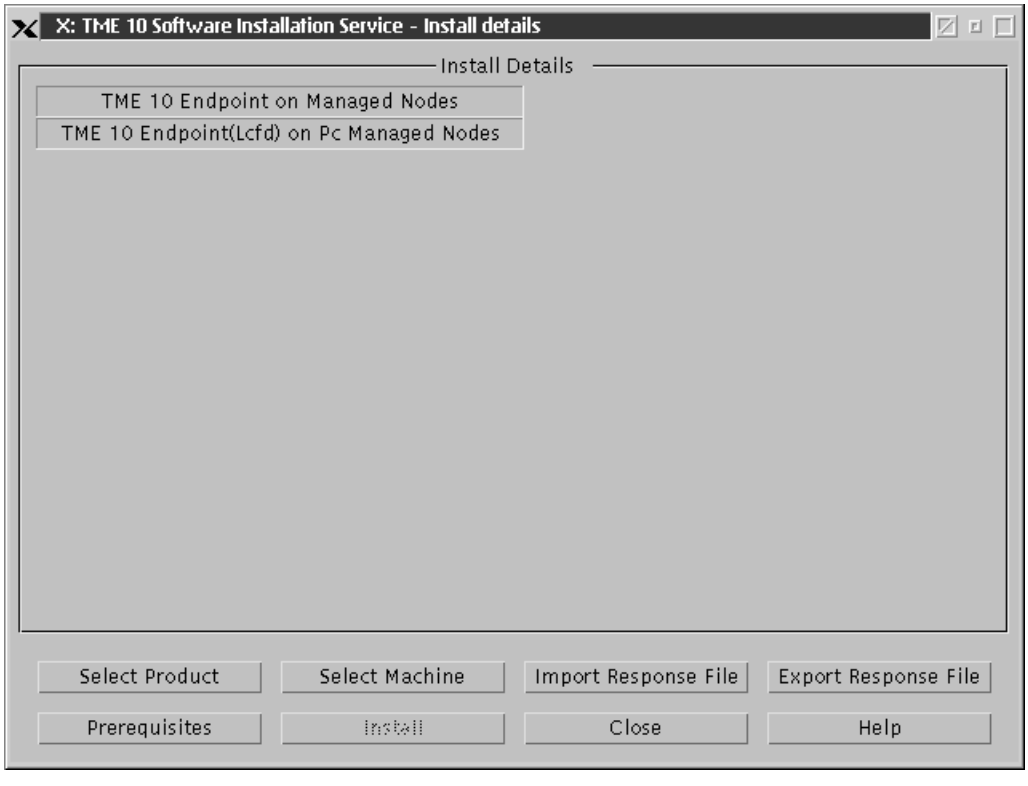

Figure 73. Install Details Showing Selected Products

The selected products appear in what is the start of a matrix in the Install Details are of the TME 10 Software Installation Service - Install dialog shown in Figure 73. When complete, this matrix displays the nodes in the columns and the products to be installed on the nodes in the rows.

4. To create Endpoints, the target machines need to be selected. To initiate this activity select the **Select Machine** option from the TME 10 Software Installation Service - Install details dialog box shown in Figure 73 on page 98.

   The Install Repository - Select Machine dialog box shown in Figure 74 is displayed.

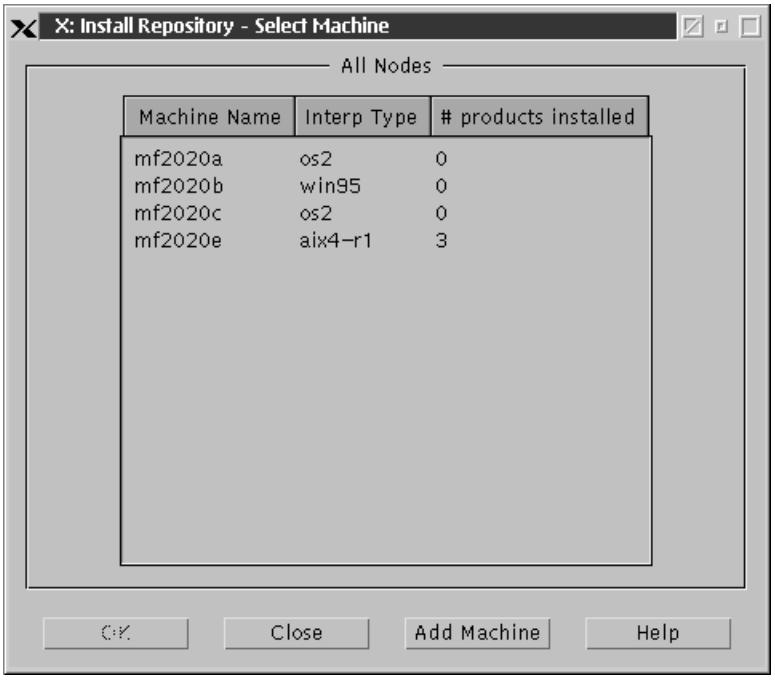

Figure 74. Install Repository - Select Machine Dialog

The Install Repository - Select Machine dialog box lists all the Managed Nodes and PC Managed Nodes in the Tivoli Management Region. The current nodes defined in the region are listed in alphabetical order under the Machine Name column of the dialog box. Then for each node in the region, the platform (operating system) is listed under the Interp Type column as well as the number of Tivoli products currently installed on each of the nodes under the # products installed column.

Endpoints can be installed on three categories of machines as follows:

- PC Managed Nodes
- Managed Nodes
- Pristine machines

PC Managed Nodes and Managed Nodes must appear in the Install Repository - Select Machine dialog box before they can be created as Endpoints. This means that they must be defined to the Tivoli region or they will not be available for selection in the Install Repository - Select Machine dialog box.

As an example, Tivoli Software Installation Service cannot create Endpoints on pristine Windows 95 and OS/2 machines. All Windows 95 and OS/2 machines must be configured as PC Managed Nodes before they are available for selection in the Install Repository - Select machine dialog box shown in Figure 74 on page 99.

Tivoli Software Installation Service can create Endpoints on pristine UNIX and Windows NT systems. This means that these types of machines do not need to be part of the Tivoli region before the Endpoint product can be installed on them.

On a pristine Windows NT machine, the only prerequisite is that the machine must have TRIP installed. TRIP can be installed manually, or if there is a Windows NT Managed Node (NT Repeater) in the region, TRIP is automatically installed from this NT Repeater by Tivoli Software Installation Service.

The result is that Tivoli Software Installation Service is unable to do mass installations of the Endpoint software on all pristine machines. For certain platform types, there are some prerequisites for installing the Endpoint software.

In this example, we have used machines running different operating systems as the targets for our Endpoint software. We are not giving step by step instructions on installing the prerequisite software. For information on the prerequisites for installing the Endpoint software on different platforms, refer to Section 5.2, “Pushing Endpoints” on page 56

The Install Repository - Select Machine dialog box shown in Figure 74 on page 99 lists the following machines:

mf2020a PC Managed Node running OS/2

mf2020b PC Managed Node running Windows 95

mf2020c PC Managed Node running OS/2

mf2020e TMR server running AIX

In this example, we are creating Endpoints on all the PC Managed Nodes in the list and we are also be creating Endpoints on some pristine UNIX and Windows NT machines.

Note

The pristine machines do not appear in the list of machines shown in the Install Repository - Select Machine dialog box shown in Figure 74 on page 99.

5. To add pristine machines to the list, select the **Add Machine** option in the Install Repository - Select Machine dialog box shown in Figure 74 on page 99.

   The Add Machine dialog box shown in Figure 75 is displayed.

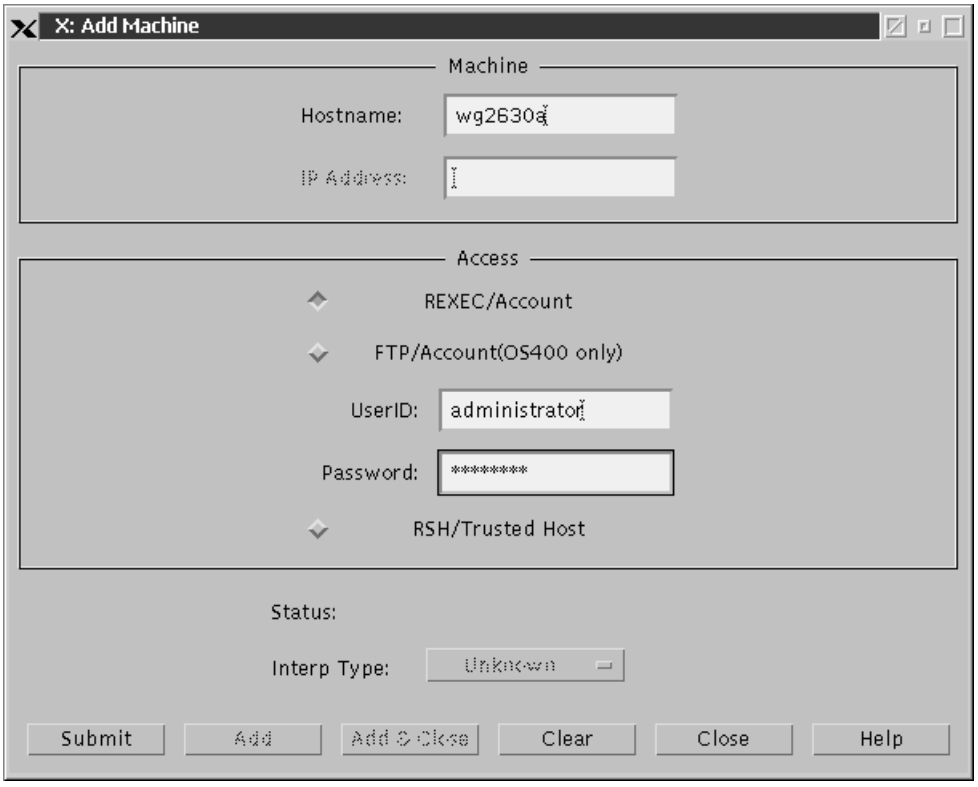

Figure 75. Add Machine wg2630a before Submit

To define a pristine machine to Tivoli Software Installation Service, you need to provide the following information in the Add Machine dialog box shown in Figure 75:

Hostname Enter the hostname of the new machine

UserID Enter a user ID with administrative access on the machine that is being created as an Endpoint

Password Enter the password for the administrator's user ID entered in the UserID field

Note

In this example, the REXEC/Account option is being used for the server to interact with the client. When the REXEC/Account option is used, a root or Administrator user ID must be entered for both UNIX and Windows NT machines.

For AIX machines, you can choose to use the RSH/Trusted Host option. To use this option, you do not have to enter a user ID and password, and you must ensure that the name of the server is added to the client's `\.rhost` file.

For further detailed information on using the RSH/Trusted Host option, refer to the *TME 10 Framework Planning and Installation Guide*.

6. When you have captured all the required information, select the **Submit** option on the Add Machine dialog box shown in Figure 75 on page 101. Tivoli Software Installation Service contacts the target machine to check its interp type.

   If the machine you are defining to Tivoli Software Installation Service is a Windows NT machine, Tivoli Software Installation Service also checks to see if TRIP is operational. If the machine does not have TRIP installed, the Connection failure dialog box shown in Figure 76 on page 103 appears.

   If the machine you are defining to Tivoli Software Installation Service is an UNIX machine, or a Windows NT machine with TRIP installed, you will not see the dialog box shown in Figure 76 on page 103 and you can proceed to step 7 on page 105 to continue with the installation.

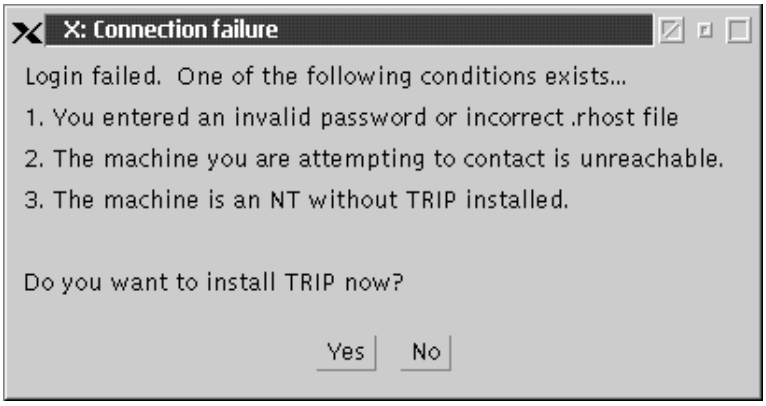

Figure 76. Connection Failure Dialog

A prerequisite for creating an Endpoint on a pristine Windows NT machine is that TRIP must be installed on the target machine. Tivoli Software Installation Service has detected that TRIP is not installed on the target machine with the displaying of the Connection failure dialog box shown in Figure 76.

You can have Tivoli Software Installation Service install TRIP on the machine by selecting the **Yes** option on the Connection failure dialog box shown in Figure 76.

If you do not want to have TRIP installed on the Windows NT machine, you can select the **No** option on the Connection failure dialog box shown in Figure 76. The installation will not continue and the system returns you to the Add Machine dialog box shown in Figure 75 on page 101 from where the additional pristine machines can be defined.

If you selected the **Yes** option to have TRIP installed, and you do not have a Windows NT Repeater configured in the Tivoli Management Region, Tivoli Software Installation Service cannot install TRIP and the TRIP installation failed dialog box shown in Figure 77 on page 104 is displayed.

Note

The first Windows NT Managed Node configured in a Tivoli Management Region is designated as a Windows NT repeater. A function of this repeater is to distribute TRIP to Windows NT machines.

If there is an existing Windows NT Managed Node in the region, then Tivoli Software Installation Service installs TRIP on the target machine and

the Add Machine dialog box shown in Figure 78 on page 105 is displayed. You can proceed to step 7 on page 105 to continue with the installation.

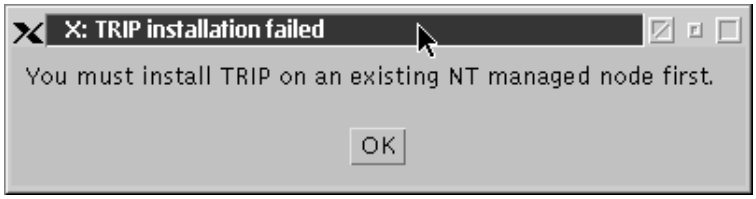

Figure 77. TRIP Installation Failed Dialog

If Tivoli Software Installation Service cannot find a Windows NT repeater in the region and is unable to install TRIP on the target machine. The Trip installation failed dialog box shown in Figure 77 is displayed.

You need to install TRIP manually on the machine before the machine can be defined to Tivoli Software Installation Service. To end the current attempt to define the machine to Tivoli Software Installation Service, select the **OK** option on the TRIP installation failed dialog box shown in Figure 77.

The Add Machine dialog box shown in Figure 75 on page 101 is displayed from where you can continue to define additional machines to be created as Endpoints.

For detailed step by step instructions on how to manually install TRIP on a Windows NT machine, refer to Chapter 8.1.3.2 "Installing Windows NT Systems as TME 10 Clients" in the redbook *An Introduction to Tivoli's TME 10*, SG24-4948-01.

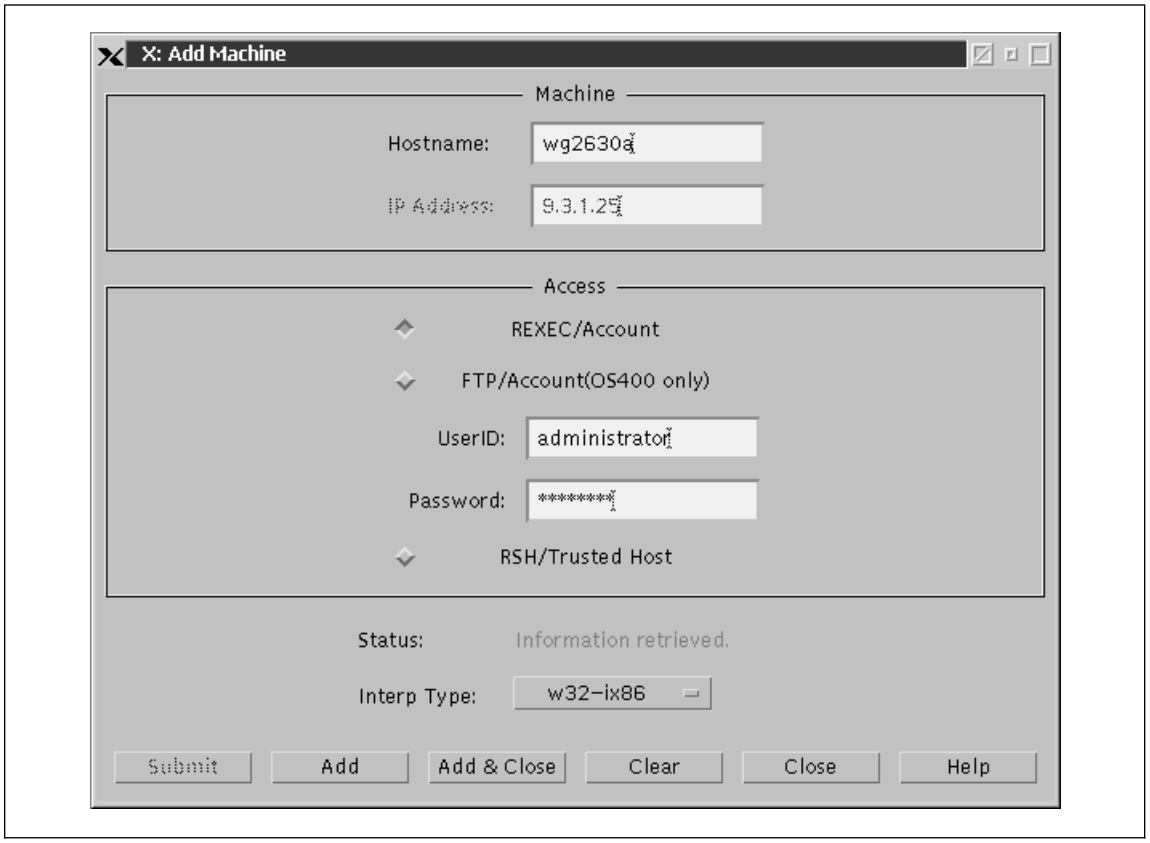

Figure 78. Add Machine wg2630a after Submit

7. As a result of the submit action, Tivoli Software Installation Service has retrieved and updated the following information on the Add Machine dialog box as shown in Figure 78:
   - The target machine's IP Address field has been filled in.
   - The Status: message area has been updated to reflect information retrieved.
   - The Add and the Add & Close command buttons are now enabled.
   - Tivoli Software Installation Service has identified and updated the Interp Type: field.

   If, as in the case of this example, the target machine is running Windows NT, the following is known:
   - TRIP is running on the target machine.

For all nodes, regardless of the operating systems installed on the machine, the following is known:

- Tivoli Software Installation Service is able to communicate with the machine.
- The user ID and password have been verified.
- The machine is now ready to have the Endpoint software installed and configured.

In this example, more than one pristine machine is being created and to continue defining the rest of the machines, select the **Add** option shown in Figure 78 on page 105.

Information about the current machine is remembered by Tivoli Software Installation Service and the Add Machine dialog box is cleared and redisplayed.

Enter the details of the next machine to be defined to Tivoli Software Installation Service by following the process described in steps 5 on page 101 through step 7 on page 105.

Note

The process described in steps 5 on page 101 through step 7 on page 105 must be repeated for each pristine machine that is defined to Tivoli Software Installation Service.

8. When the last machine's configuration has been added, select the **Close** option on the Add Machine dialog box shown in Figure 78 on page 105.

   You are returned to the Install Repository - Select Machine dialog box shown in Figure 79 on page 107 with the new machine names appearing in the list of nodes.

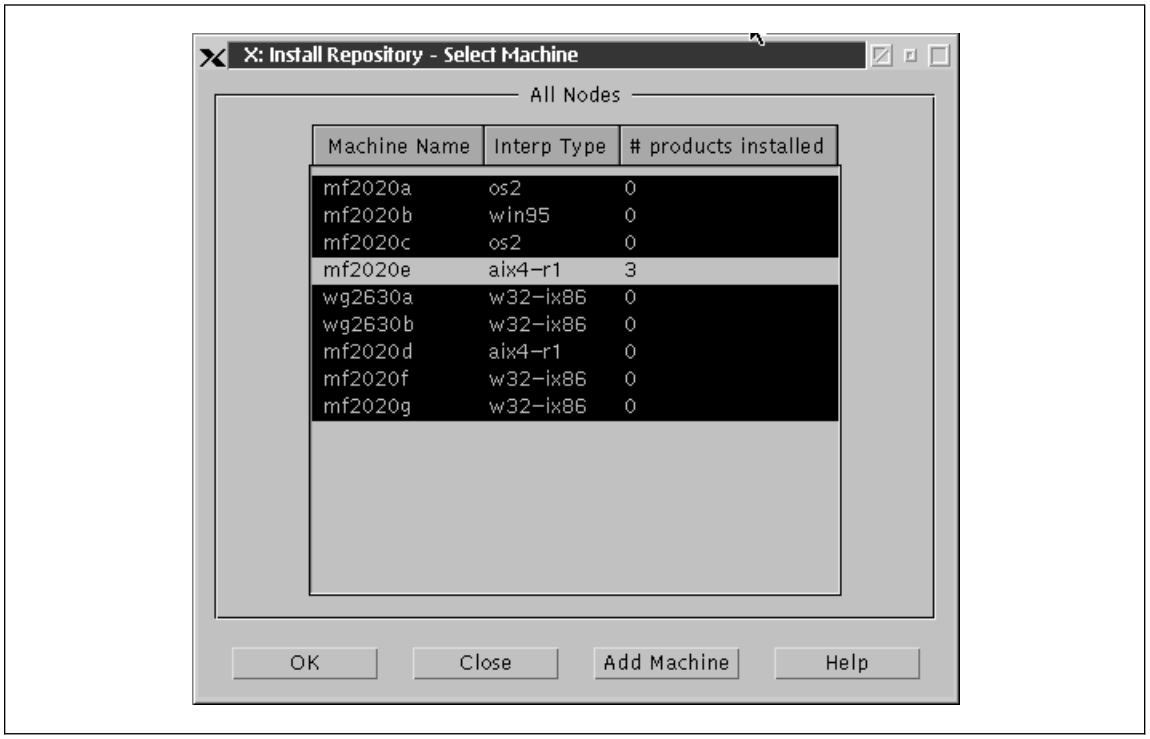

Figure 79. Install Repository - Select Machine with Machines Selected

The machines that have been identified to Tivoli Software Installation Service are highlighted in the list of machines available for selection.

9. You now need to highlight all the machines you are creating as Endpoints. In this example, we have selected all the nodes in the list except for an AIX machine that is our TMR server. When you have selected all of the machines from the list, select the **OK** option in the Install Repository - Select Machine dialog box in shown in Figure 79.

   You are returned to the TME 10 Software Installation Service - Install details dialog box shown in Figure 80 on page 108.

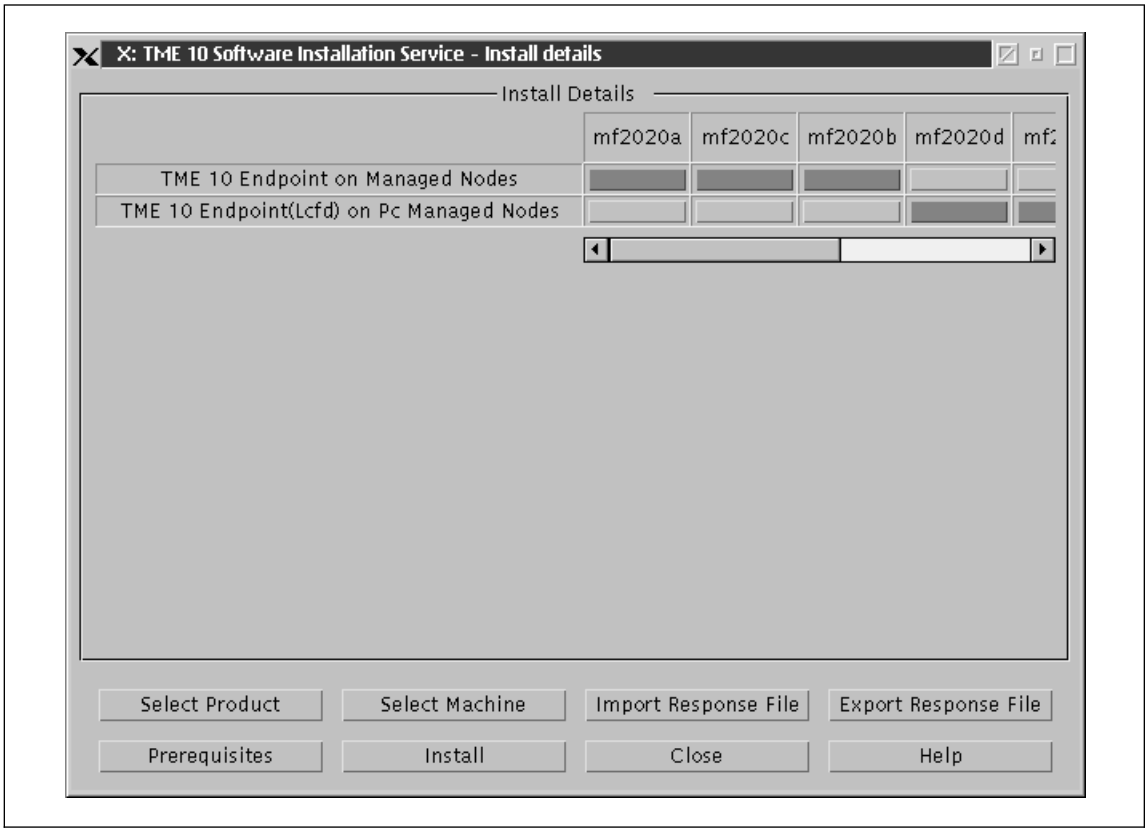

Figure 80. Install Details Showing Selected Nodes and Products

The matrix is now taking shape as follows:

- The selected Tivoli products (TME 10 Endpoint on Managed Nodes and TME 10 Endpoint(Lcfd) on PC Managed Nodes) are shown in the rows on the left side of the matrix.
- The selected machines are displayed in the columns at the top of the matrix (the scroll bar can be used to display the nodes not appearing on the screen).
- There are gray cells at the junctions where the rows and columns meet.

Some of the cells are light gray in color and some of the cells are dark gray in color. The dark gray cells mean the the product on the left is not allegeable for installation on the node and the light gray color means that the product on the left can be installed on the node in the column.

10. To select a product to be installed on a node, you click the light gray cell in the row where the product to be installed meets the column of the node onto which it is to be installed. In this example, we clicked on the light gray cell where the TME 10 Endpoint (Lcfd) on PC Managed Nodes row meets the column of the first node mf2020a.

    The TME 10 Endpoint (Lcfd) on PC Managed Nodes attributes on mf2020a dialog box shown in Figure 81 is displayed for the selected machine.

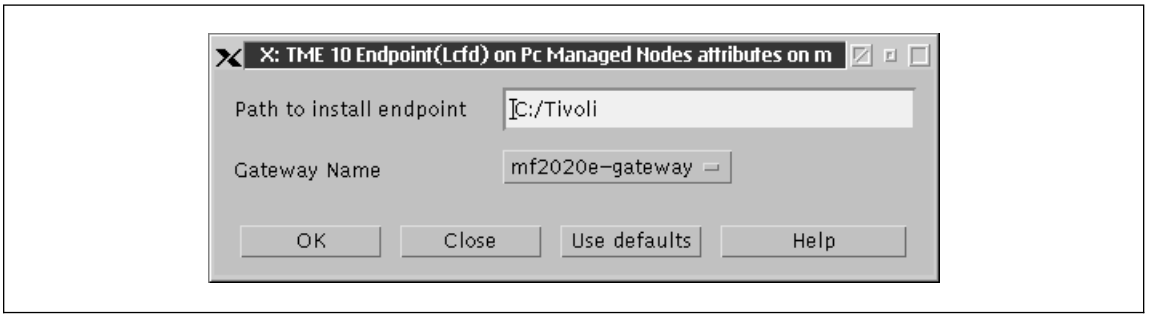

Figure 81. TME 10 Endpoint(Lcfd) on PC Managed Nodes Attributes on mf2020a

The dialog box TME 10 Endpoint(Lcfd) on PC Managed Nodes attributes on mf2020a shown in Figure 81 allows you to configure the following information:

Path to install endpoint Set the installation path for the Endpoint software.

Gateway Name Select the name of the Endpoint Tivoli Managment Gateway through which the Endpoint will communicate.

11. When you have completed the configuration of the information shown in the TME 10 Endpoint(Lcfd) on PC Managed Nodes attributes on mf2020a dialog box shown in Figure 81, select the **OK** option to return to the TME 10 Software Installation Service - Install details dialog box shown in Figure 82 on page 110. The next machine can be selected and configured from here.

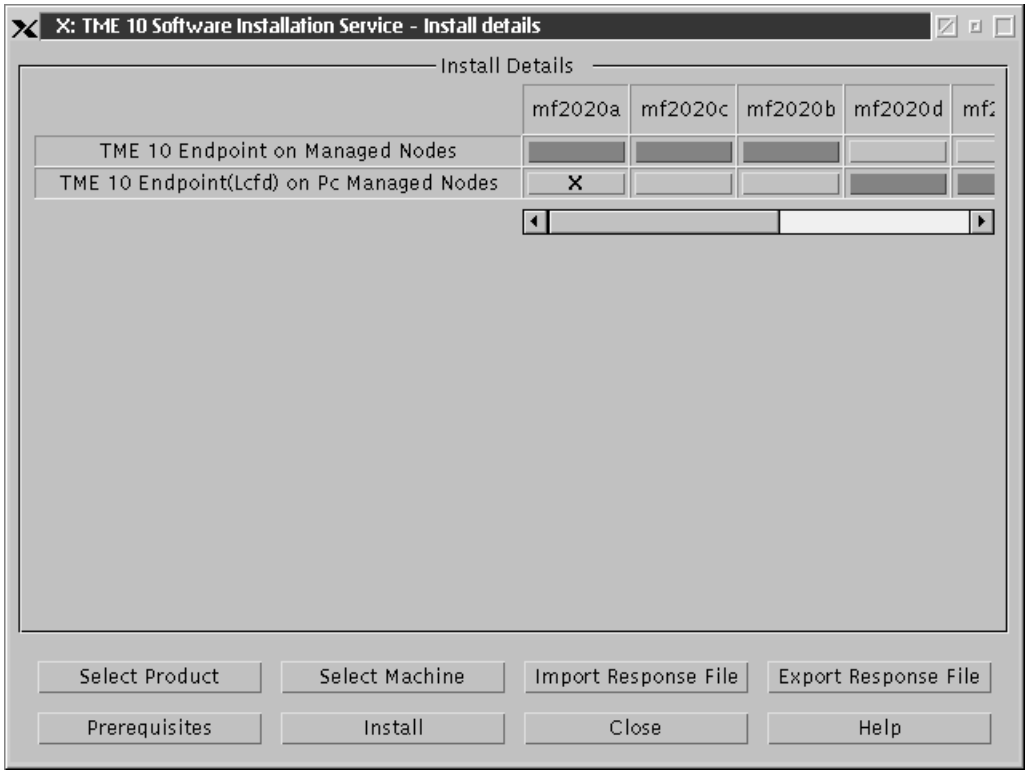

Figure 82. Install Details Showing One Node Configured

Notice that on the TME 10 Software Installation Service - Install details dialog box shown in Figure 82, there is an **X** in the gray cell that was previously selected.

This confirms that Tivoli Software Installation Service is prepared to install the TME 10 Endpoint (Lcfd) on PC Managed Nodes product on node mf2020a when the Install option is selected.

To prepare the rest of the machines to have the Endpoint product installed, repeat the process described in step 10 on page 109 through step 11 on page 109 for each machine.

When all the products are selected for installation on the machines, the Install Details matrix of the TME 10 Software Installation Service - Install details dialog will have **X**s in each cell where the product is to be installed as shown in Figure 83 on page 111.

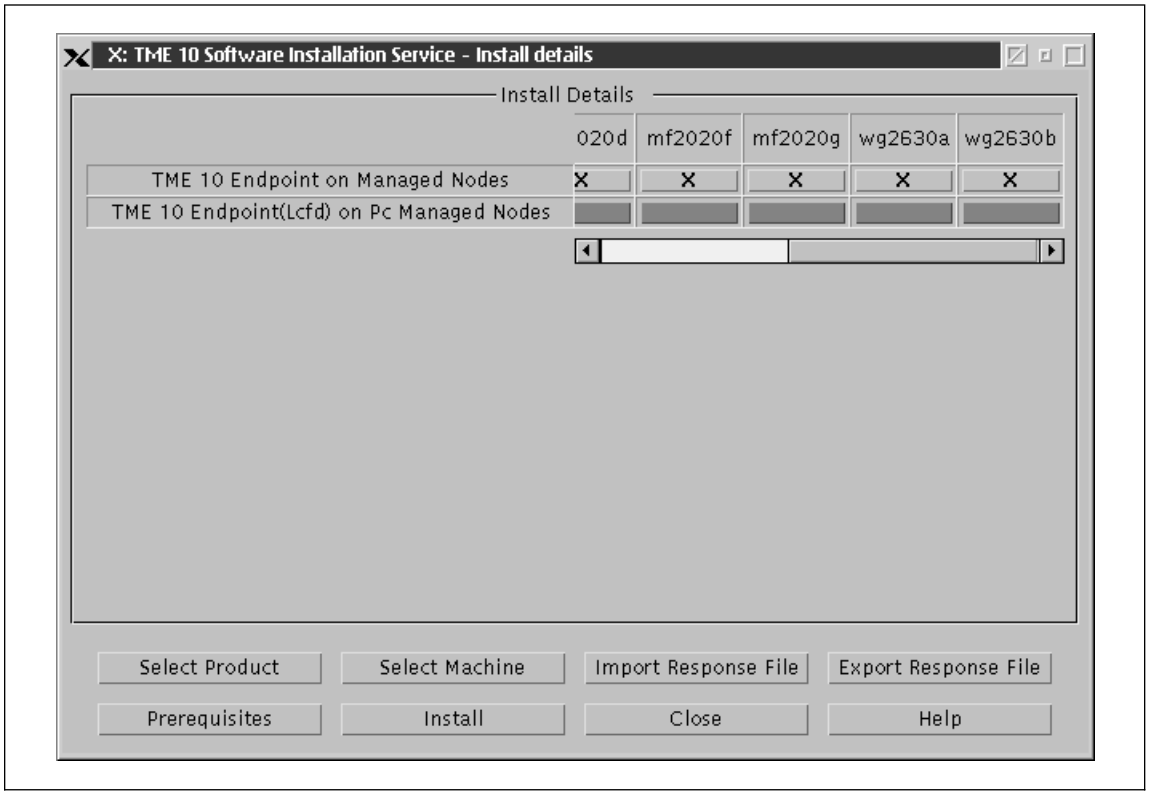

Figure 83. Install Details Showing Multiple Nodes Configured

Notice that there is an **X** in all the light gray cells displayed in the dialog box. This confirms that all the nodes have been configured and are ready to be installed as Endpoints.

12. To start the installation, select the **Install** option at the bottom of the TME 10 Software Installation Service - Install details dialog box shown in Figure 83.

    The Installation Progress dialog box shown in Figure 84 on page 112 is displayed where you can monitor the installation.

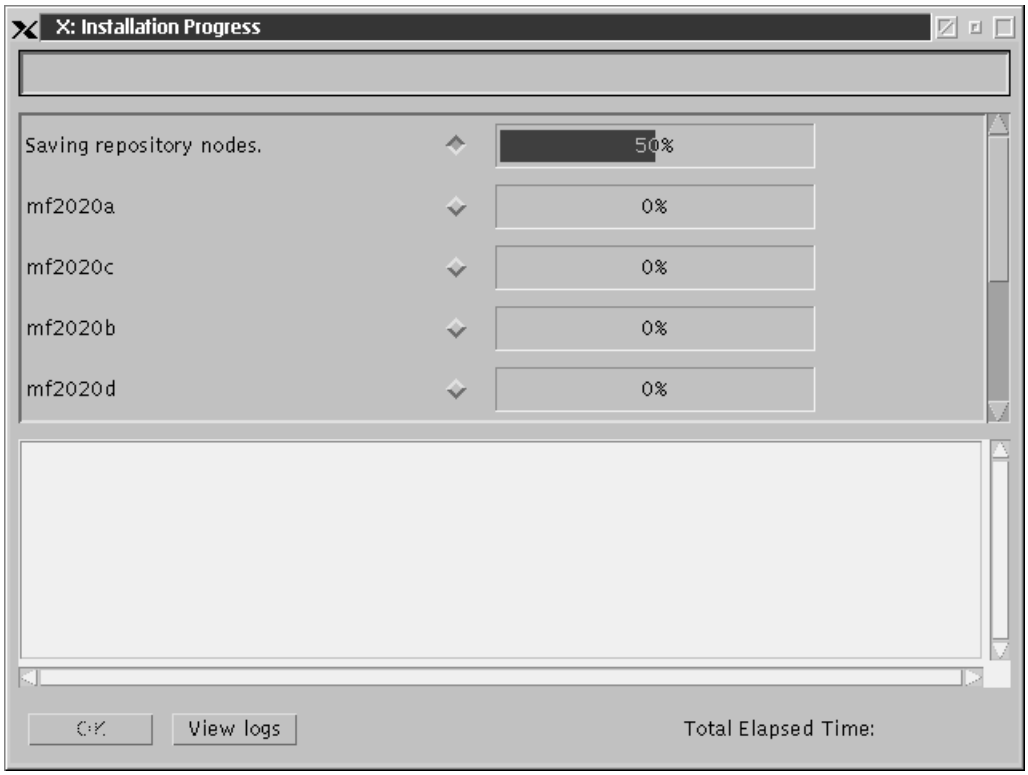

Figure 84. Multiple Nodes Installation Progress Dialog

During the installation of the Endpoint products, the Installation Progress dialog box shown in Figure 84 displays the following information:

- Slide bars indicating the progress of the installation for each node being installed
- A text area displaying an updated textual description of the installation progress.

As the installation progresses, you can monitor the information displayed in the text box. The text box lists the installation progress for a single node at a time. The installation progress for the different nodes can be viewed by selecting the check box next to the node whose information you want to view.

The text box also displays information on errors that may occur during the installation.

At the end of the installation, the Installation Progress dialog box shown in Figure 85 on page 113 is displayed.

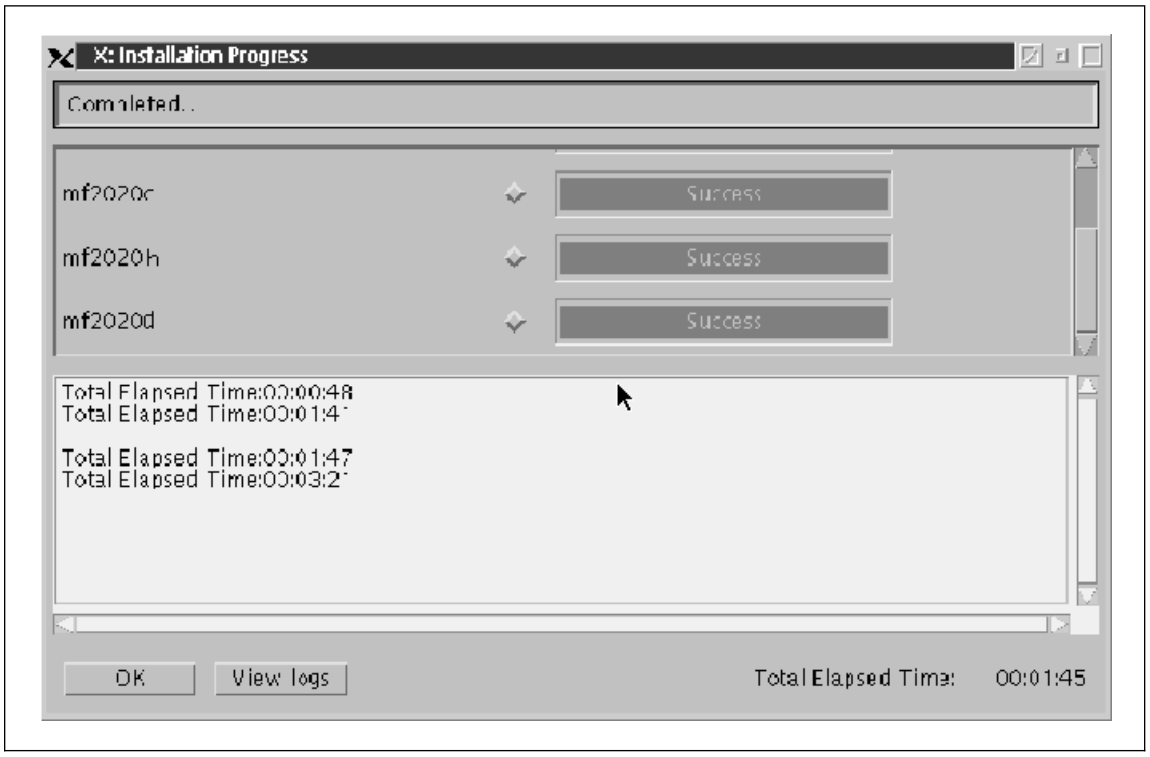

Figure 85. Installation Progress for Multiple Nodes Showing Successful Installation

The installation is now complete and the slide bars in the Installation Progress dialog box shown in Figure 85 reflect the status of the installation for each node. The slide bars change color as follows:

- Green indicates that the installation was successful.
- Red indicates that there were errors and the installation was unsuccessful.

In both cases, the **View logs** option can be selected to display detailed information on the outcome of the installation. For further detailed information on these and other types of logs, refer to Chapter 7, “Tivoli Software Installation Service Logs” on page 167.

13. To conclude the creation of the Endpoints, select the **OK** option on the Installation Progress dialog box shown in Figure 85.

    The TME 10 Software Installation Service - Install details dialog box shown in Figure 86 on page 114 is displayed.

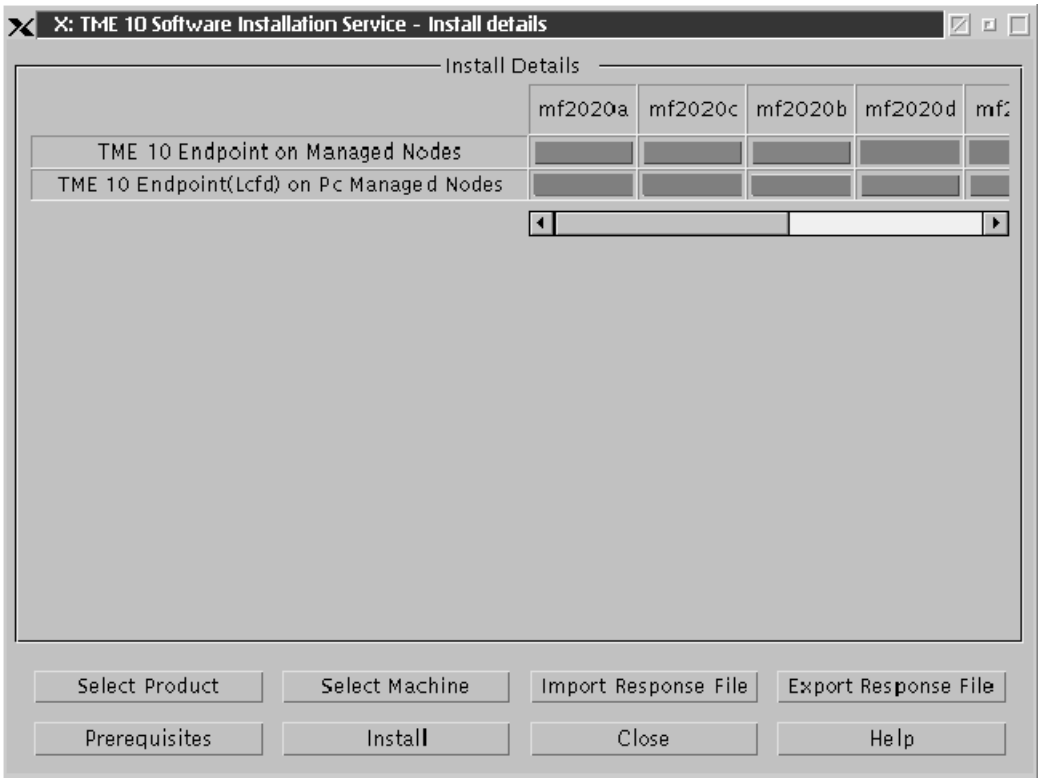

Figure 86. Install Details for Multiple Nodes Showing Products Installed

If, as in this example, the installation was successful on all the nodes, the cells at the intersection of the product and the nodes change from gray to green. The green color indicates that the product in the row has been installed on the node in the column.

To verify that the Endpoints have been successfully created, open the Tivoli desktop shown in Figure 87 on page 115.

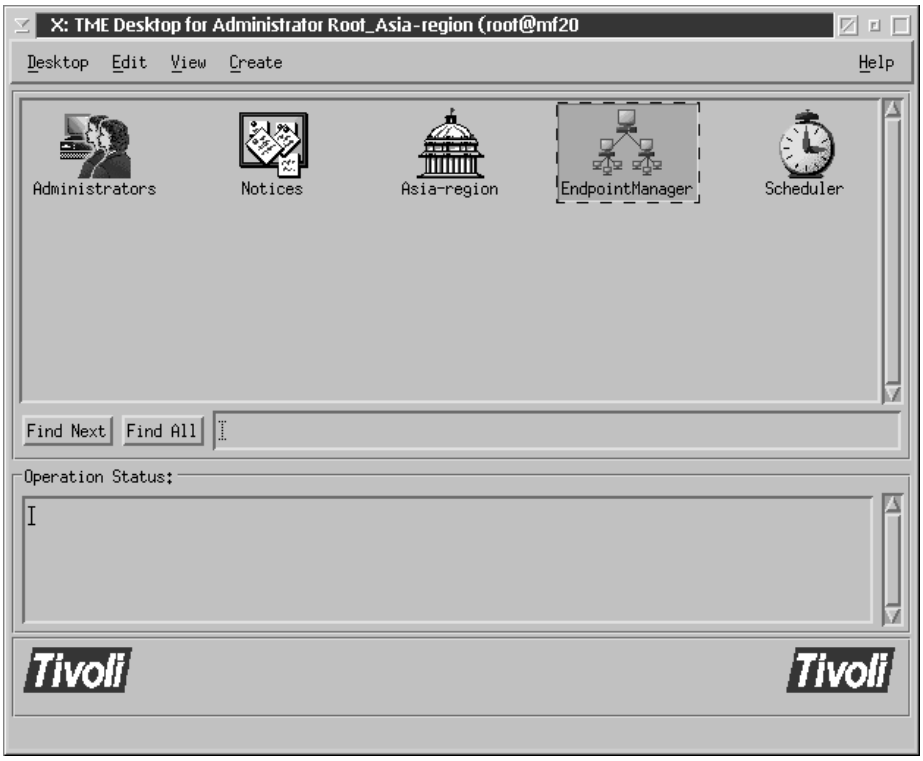

Figure 87. Tivoli Desktop

From within the Tivoli desktop, you can view the Endpoints by opening the **Endpoint Manager** option shown in the TME 10 Tivoli Desktop dialog box in Figure 87.

The Gateway List dialog box shown in Figure 88 on page 116 is displayed.

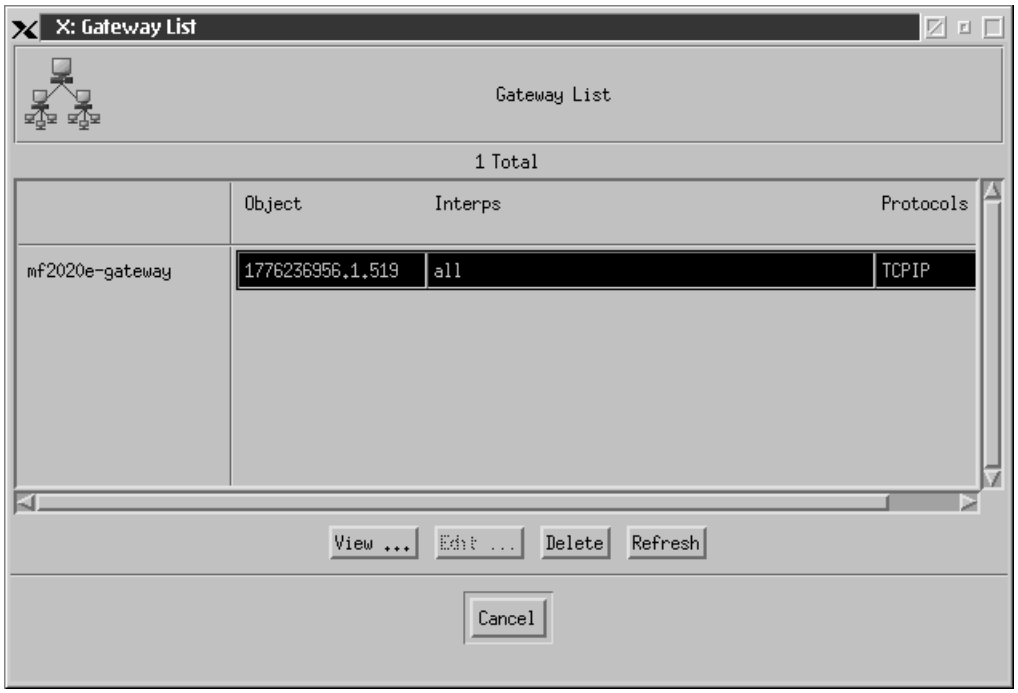

Figure 88. Gateway List for mf2020a

This dialog box displays a list of all the Endpoint Gateways in the region. In this example, there is only one Endpoint Gateway. It is defined so that in order to view a list of the Endpoints reporting through the Endpoint Gateway, you need to highlight the Endpoint Gateway and select the **View** option shown in Figure 88.

The Endpoint List dialog box shown in Figure 89 on page 117 is displayed and the newly created Endpoints are seen in the list of Endpoints.

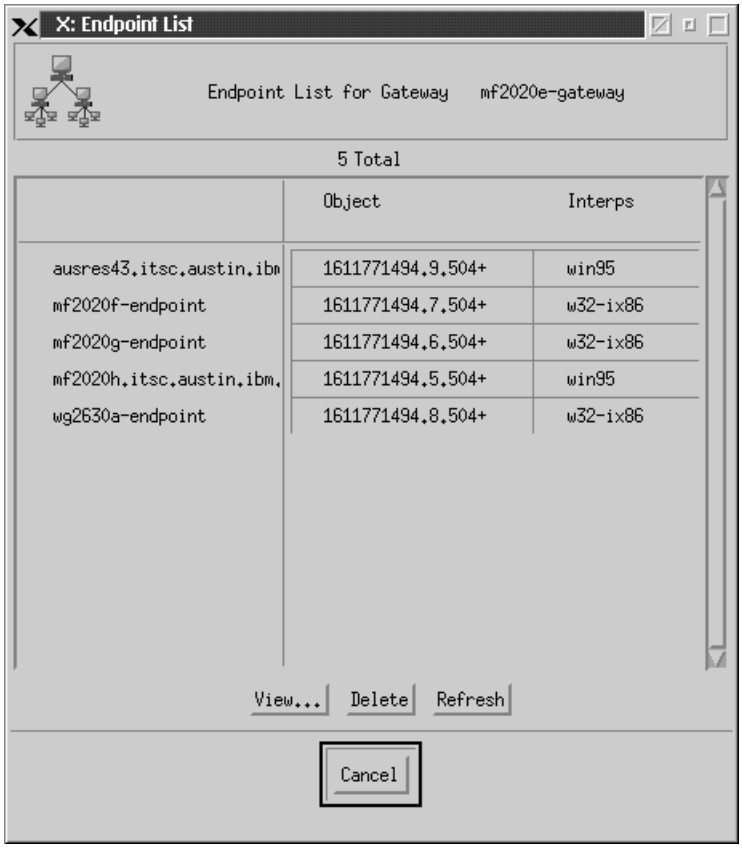

Figure 89. Endpoint List for Gateway mf2020a

5.4 Response Files

Tivoli Software Installation Service supports the use of response files that you may find useful in mass installation activities. Response files are text files that contain product and machine attributes that are required by Tivoli Software Installation Service for an installation, such as:

- Product install directory paths
- Machine name
- Machine access methods
- Operating system type
- Password settings

- Logon account information

You can define specific attributes for a product or machine, or use a global set of attributes for all machines, and pass these values to Tivoli Software Installation Service in a response file.

5.4.1 Advantage of Using Response Files

A response files is a useful tool for carrying out an unattended installation. You can create a response file where you have edited it to customize settings for your complete installation of one to many products and/or machines. You can re-use this file for future installations, using a text editor to add machine or product attributes. You can start the installation using a response file from either the command line or the Tivoli Software Installation Service graphical user interface. The installation process reads the installation parameters from this file instead of prompting you for keyboard input. An experienced administrator can create installation tasks using the `wsis` command and response files, and use the TMR Scheduler service to execute these tasks at scheduled times.

5.4.2 Creating Response Files

You can create a response file using your favorite text editor or utilize the Tivoli Software Installation Service graphical user interface to construct a response file for you. Even if you want to create your own response file you may find it useful to use the Tivoli Software Installation Service graphical user interface to start the construction of the response file before then using your favorite text editor to complete the process.

5.4.2.1 Creating a Response File Using a Text Editor

If you would like to create your own response file you need to use your favorite test editor to build the response file in the format that is understandable by Tivoli Software Installation Service. An example of the basic response file structure is shown in Figure 90 on page 119. The template shown in Figure 90 on page 119 was generated using the Tivoli Software Installation Service graphical user interface and not selecting any machines or products in step 1 on page 119 and then doing steps 2 and 3 on page 121. Figure 90 on page 119 shows the response file template structure.

```
[byProduct]

[byNode]

[globals]
InstallPassword=
```

Figure 90. TEMPLATE.RSP Response File Template

Using this response file template structure you can add or modify entries in your response file as described in 5.4.4, “Response File Structure” on page 127, using any text editor. You can check the syntax of your response file either by importing it through the Tivoli Software Installation Service graphical user interface or using the `-check` parameter of the command line interface.

5.4.2.2 Creating a Response File through the SIS GUI

The Tivoli Software Installation Service GUI provides a quick and convenient way to create a response file. Following is a step-by-step procedure for creating your own response file.

1. From the SIS Install Details dialog, use the **Select Product** and **Select Machine** options to select the machines and products required for the installation you wish to perform. A detailed example of selecting multiple products and machines can be found in Section 5.3.4, “Installing Endpoints” on page 95. Figure 91 on page 120 shows an example where the TME 10 User Administration 3.1 product is to be installed on nodes mf2020d and mf2020g, the TME 10 Framework 3.2 Gateway product is to be installed on node mf2020e, and the TME 10 Remote Control Target 3.6 product is to be installed on node mf2020g.

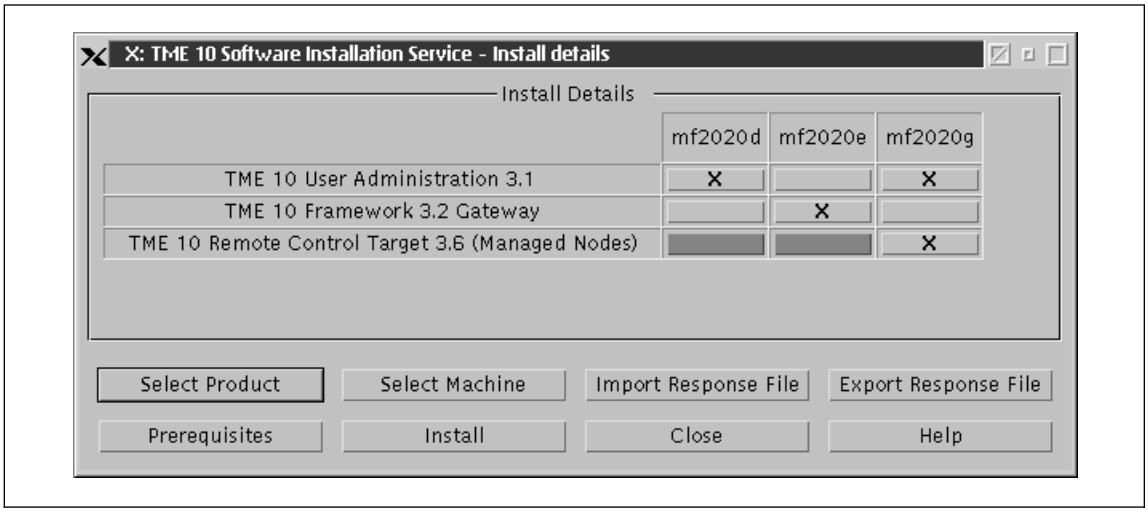

Figure 91. Machines and Products Selected for an Installation

2. From the Tivoli Software Installation Service Install details dialog, select the **Export Response File** option. You are prompted for the name and path for the `.rsp` response file on the Save response file dialog as shown in Figure 92.

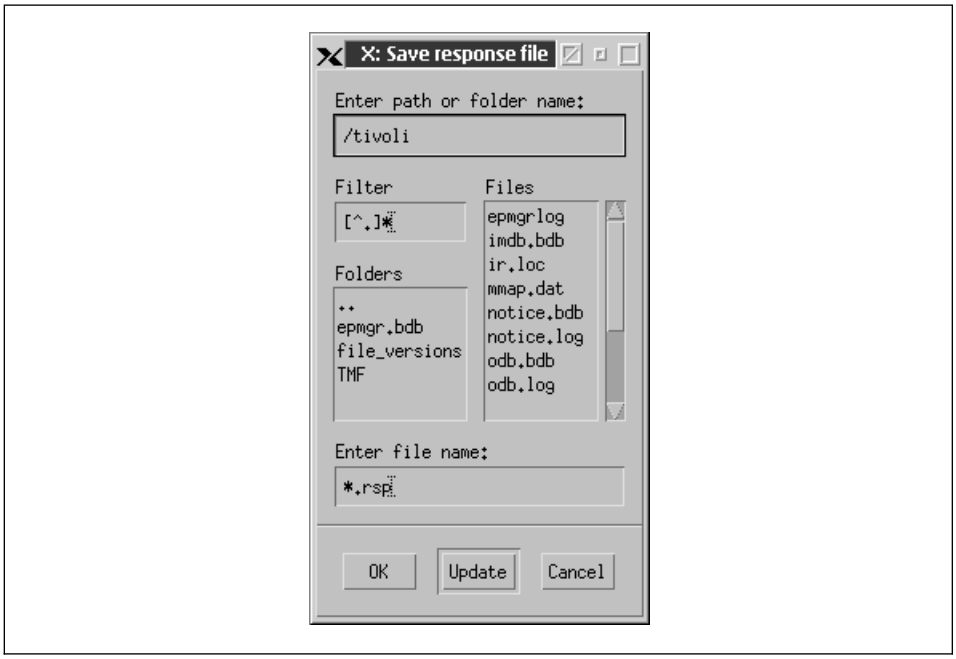

Figure 92. Save Response File Dialog

3. Select **OK** after you have entered the path and file name information where you want Tivoli Software Installation Service to generate a response file. Figure 93 on page 121 shows the response file generated for the example shown in Figure 91.

```
[byProduct]
aliasname1=mf2020d mf2020g
aliasname2=mf2020e
aliasname3=mf2020g

[byNode]
mf2020d=aliasname1
mf2020e=aliasname2
mf2020g=aliasname3 aliasname1

[globals]
InstallPassword=

[alias aliasname1 Admin-3.1-TME_10_User_Administration_3.1_]
```

Figure 93 (Part 1 of 2). SAV.RSP Response File

```
[alias aliasname2 TMP32GATEWAY-3.2-TME_10_Framework_3.2_Gateway]
@GATE_NAME@=mf2020e-gateway
@GATE_PORT@=9494
Overwrite=

[machine mf2020g]
access=tivoli
interp=w32-ix86
autoInstallTrip=no

[machine mf2020e]
access=rexec
interp=aix4-r1
userid=install
password=
promptForPassword=yes

[machine mf2020d]
access=tivoli
interp=aix4-r1

[alias aliasname3
RC_TGT_M-3.6-TME_10_Remote_Control_Target_3.6__Managed_Nodes_]
@CreatePaths@=1
@RC@=/TIVOLI/PCREMOTE
Overwrite=
```

Figure 93 (Part 2 of 2). SAV.RSP Response File

4. You can now use your favorite text editor to change any part of the response file to reflect the settings for the intended installation. In the example shown in Figure 94 on page 123, we have defined the alias names `tmusradm`, `tmfgw` and `rctarmn` to replace the `aliasname1`, `aliasname2` and `aliasname3` names for the Tivoli products being installed. These more meaningful abbreviations can make it easier for you to understand what Tivoli products the response file is directing Tivoli Software Installation Service to install even thought the changes are not required for the response file to work correctly.

```
[byProduct]
tmusradm=mf2020d mf2020g
tmfgw=mf2020e
rctarmn=mf2020g

[byNode]
mf2020d=tmusradm
mf2020e=tmfgw
mf2020g=rctarmn tmusradm

[globals]
InstallPassword=admins

[alias tmusradm Admin-3.1-TME_10_User_Administration_3.1_]

[alias tmfgw TMP32GATEWAY-3.2-TME_10_Framework_3.2_Gateway]
@GATE_NAME@=mf2020e-gateway
@GATE_PORT@=9494
Overwrite=

[machine mf2020g]
access=tivoli
interp=w32-ix86
autoInstallTrip=no

[machine mf2020e]
access=rexec
interp=aix4-r1
userid=install
password=
promptForPassword=yes

[machine mf2020d]
access=tivoli
interp=aix4-r1

[alias rctarmn
RC_TGT_M-3.6-TME_10_Remote_Control_Target_3.6__Managed_Nodes_]
@CreatePaths@=1
@RC@=/TIVOLI/PCREMOTE
Overwrite=
```

Figure 94. Customized SAV.RSP Response File

5. If you have modified the response file, then you need to verify the response file. You can do this by importing the file into the Tivoli Software Installation Service graphical user interface. From the TME 10 Software Installation Service Install details dialog, select the **Import Response File** option. You are prompted for the location of the `.rsp` response file in the Load response file dialog, as shown in Figure 95 on page 124.

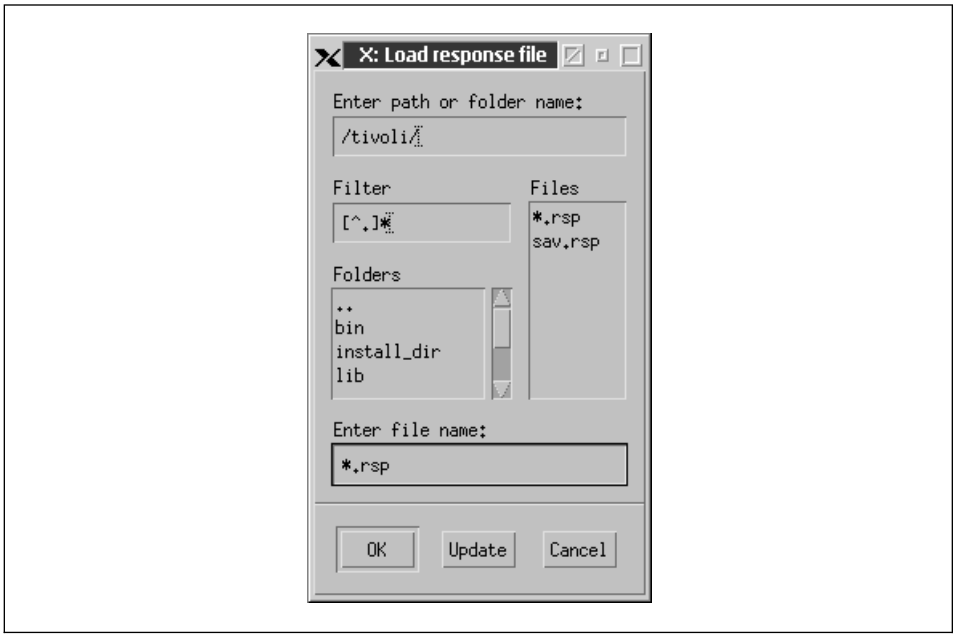

Figure 95. Load Response File Dialog

6. When you have specified the file you wish to use in the Load response file dialog, select **OK**. Tivoli Software Installation Service parses the response file to check the syntax, contact the machines listed in the file, and check product settings. You can view the progress of this checking in the Response file progress dialog as shown in Figure 96.

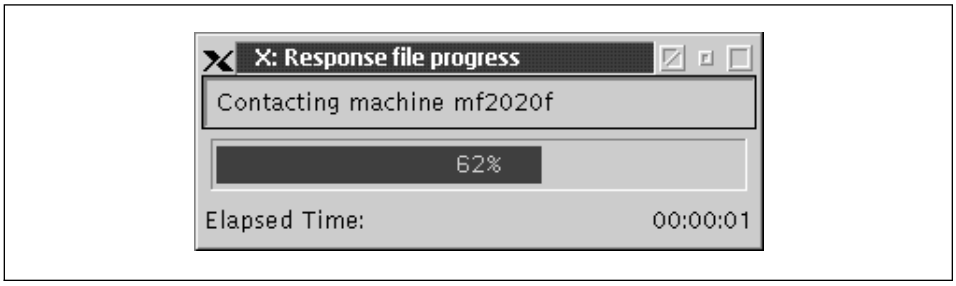

Figure 96. Response File Import Progress Status

After the input response file has been verified, the Response file progress dialog box briefly displays a progress bar filled in green if there were no errors, or a red filled in progress bar in case errors were found in the response file. Figure 97 on page 125 shows a successful import.

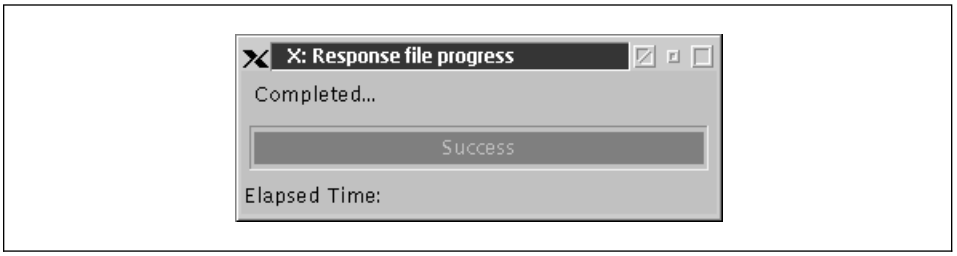

Figure 97. Successful Response File Import

After a few seconds, the Response file progress dialog disappears, and the SIS Install details dialog is updated to show the products and machines that have been input in the response file for the current installation, as shown in Figure 98. In the Install Details matrix, there is an `X` placed in each cell corresponding to the products that are to be installed on each machine.

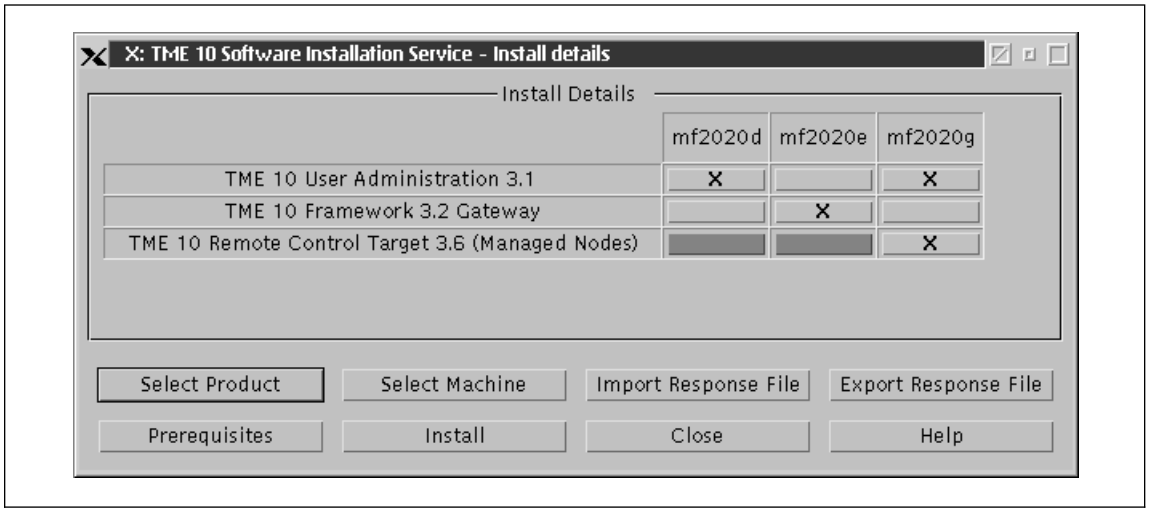

Figure 98. Install Details Dialog after a Successful Response File Import

7. If you want Tivoli Software Installation Service to begin the installation at this time you can now select the **Install** option from the TME 10 Software Installation Service - Install details dialog to start the installation. If you only wanted to verify the response file at this time you can select the **Close** option at the bottom of the TME 10 Software Installation Service Install details dialog.

5.4.3 Using the Command Line Interface.

The `wsis` command can be used to install clients and products from the command line interface. The authorization required to run this command is super, or install_client and install_product. When used with a response file, the format of the command is

```
WSIS <path_name>\<response_file_name>
```

where `<path_name>` is the directory path where your response file `<response_file_name>` is located. Using the example shown in Figure 95 on page 124, the response file named `sav.rsp` is located in the `/tivoli` directory.

Tivoli Software Installation Service parses the response file to check the syntax, contact the machines and check product settings, and then automatically start the installation. Informational and error messages are displayed on the dialog, as well as written to the Tivoli Software Installation Service logs. Chapter 7, “Tivoli Software Installation Service Logs” on page 167 provides detailed information on how to use the Tivoli Software Installation Service logs.

The use of the `-check` parameter in the command

```
wsis <path_name>\<response_file_name> -check
```

causes Tivoli Software Installation Service to parse the response file and verify machine connectivity, but not start the installation. When using the command-line interface, you must ensure that the products listed in your response-file have already been imported into the install repository, otherwise the SIS server may stall while importing the response file.

An example of the installation information displayed to the dialog from the execution of the `wsis` command is shown in Figure 100 on page 127. For this example the response file `dhcp.rsp` shown in Figure 99 was input to the command.

```
[byNode]
mf2020e=udhcp

[alias udhcp UserLink_DHCP_Service-3.2-UserLink_DHCP_Service,_Version_3.2]

[machine mf2020e]
access=tivoli
interp=aix4-r1
```

Figure 99. Response File to Install UserLink/DHCP

```
# wsis dhcp.rsp
Starting wsis
Creating TMR lock...
Creating IR lock...
TMR and IR locks created.
Importing Install Repository.  Please wait...
Install Repository Imported.
Starting dhcp.rsp Import
Importing Response file from dhcp.rsp
Machine mf2020e contacted
Importing Response file from dhcp.rsp succeeded
Beginning the installation...
mf2020e:  Checking product prerequisites
mf2020e:  Checking for a previous installation of UserLink/DHCP
Service, Version  3.2
mf2020e:  Pushing/Unpacking Files: Binaries
mf2020e:  Pushing/Unpacking Files: Server Database
mf2020e:  Pushing/Unpacking Files: Message Catalogs
mf2020e:  Registering product
mf2020e:  Sending notice to Administration
mf2020e:  UserLink/DHCP Service, Version 3.2 was successfully installed
on node mf2020e.
mf2020e:  Finished installing 1 product(s)
mf2020e:  Finished at: Thu Mar 26 09:53:43 CST 1998, final status: SUCCESS
Saving repository nodes.:  Finished at: Thu Mar 26 09:53:47 CST 1998, final
status:  SUCCESS
dhcp.rsp Import Succeeded
Removing TMR and IR locks...
Removing TMR lock...
Removing IR lock...
TMR and IR locks removed.
wsis Succeeded
#
```

Figure 100. Using the wsis Command

5.4.4 Response File Structure

Response files can be constructed to reflect the specific settings needed for each installation scenario you want to perform. This section briefly describes the entries that make up the different parts of a response file. By correctly building or modifying your response files you can describe to Tivoli Software Installation Service the installation process and any attributes required for an intended installation. You can refer to Section 5.4.5, “Response File Examples” on page 131 for examples using response files with these sections.

- [globals]

  This section is optional, and contains global installation attributes. For example in Figure 94 on page 123 the password `admins` was provided in the `InstallPassword=` entry. This TMR installation password is required in this example so that when the SIS installation process starts it can connect to the TMR server.

- [machine]

  The format of this entry is [machine <machine_hostname>]. This section is optional, and allows you to define machine information that is stored in the Install Repository. Following are entries you can specify for machines:

  access=

  The valid values for access= are rexec or rsh or tivoli or pcnode. Access is used to specify the access method to be used to contact a machine during the importing of the response file by Tivoli Software Installation Service.

  rexec Used for Windows NT and AIX machines.

  rsh Can be used to access AIX machines if the TMR server name is listed in the .rhosts file on the machine to be accessed.

  tivoli Specifies that the machine is accessed through a Tivoli connection. This method can be used to access existing managed nodes in the TMR.

  pcnode Indicates that the machine is a PC managed node, therefore it will not be tested for connectivity during the response file import process.

  userid=

  Is the user ID required to logon to the machine. User ID is mandatory when ever access=rexec or access=rsh. is specified.

  password=

  The password required to logon to a machine and is stored as a text field. It is mandatory whenever access=rexec is specified.

  promptForPassword=

  The valid values for promptForPassword are yes or no.

  This entry is optional and specifies whether the installer is to be prompted to enter the machine logon password through standard input at the time of the installation. If set to yes, as for node mf2020e in the response file example shown in Figure 94 on page 123, the password

specified in the `password=` field is ignored and the installer is required to enter the password.

`autoInstallTrip=`

The valid values for `autoInstallTrip` are `yes` or `no`.

This is an optional entry that specifies whether TRIP should be installed on a specified Windows NT machine. If this entry is not specified or set to `yes`, Tivoli Software Installation Service installs TRIP on the Windows NT machine.

`interp=`

Interp is an optional entry that specifies the operating system of the machine. If not specified, Tivoli Software Installation Service determines the the operating system of the machine using the `uname -a` command.

- [alias ...]

  The alias entry allows you to define a short names for products instead of using the unique product required and used by Tivoli Software Installation Service.

  Note

  Tivoli Software Installation Service uses the unique product name when creating the directory to store a Tivoli product image in the Install Repository These product directories are created in either the Framework, Products, Upgrades or Patches sub directories of your Install Repository. You can find the unique product names for the Tivoli products in your Install Repository by looking at a listing of the sub directories in the Framework, Products, Upgrades or Patches directories.

  The format of the [alias ...] entry is

  [alias <user_defined_alias> <unique_product_name>]

  The alias section contains the attributes to be associated with the product. You can create multiple aliases to reference to a single Tivoli product. In each alias section you can customize the product attributes for the different platforms in your Tivoli Managed Environment. Then by using the different aliases you can customize your response file for the correct product setup for the different interps you are installing.

- [byNode] and [byProduct]

  These sections use aliases to specify which products are to be installed on which machines.

  The format of the [byNode] entry is

  <machine_hostname>= <alias_name1>, <alias_name2>...>

  The format of the [byProduct] entry is

  <alias_name>= <machine_hostname1>, <machine_hostname2>...>

A response file can contain either the [byNode] or the [byProduct] section or it can contain both sections. Examples of using these are shown in Section 5.4.5, “Response File Examples” on page 131. The entries in these sections tell Tivoli Software Installation Service which products to associate with which machines. The Tivoli Software Installation Service graphical user interface displays this relationship by placing an X in the corresponding cells of the Install Details matrix after the response file has been imported, as shown in Figure 98 on page 125.

Tips

To create a template of product attributes for the Tivoli products in your Tivoli Managed Environment you can use the Software Installation Service graphical user interface. On the TME 10 Software Installation Service Install details dialog use the **Select Machine** to load one of every Interp machine type in your Tivoli Managed Environment and the **Select Product** options to load all the Tivoli products stored in your Install Repository. Then select each product for installation so that an X appears in each cell in the Install Details matrix where valid. Use the **Export Response File** option to create a response file that contains all the selected products with their attributes.

To append a product and its attributes to an existing response file use the **Import Response File** option to read the response file into the Tivoli Software Installation Service graphical user interface. Then select the required product into the Install Details matrix for the machines in your Tivoli Managed Environment as if you were going to install the product. Then use the **Export Response File** option to save your updated response file.

5.4.5 Response File Examples

Response files can be used to simplify the process of initiating an install, and to be able to edit and re-use a response file to suit various installation requirements. The following examples are intended to illustrate this.

5.4.5.1 Installing the Same Product on Multiple Nodes

In this example, the Tivoli Managed Environment Remote Control Target 3.6 is to be installed on to three machines (wg2630a, wg2630b and wg2630c) and the Tivoli Managed Environment Tivoli Management Framework Gateway product is to be installed on three other machines (mf2020h, mf2020i and mf2020j) in the Tivoli Management Region.

You can build the response file by either using an existing response file that includes some of the information you need for the installation or you can create the response file by entering all the information using a text editor. This example modifies an existing response file. The response file shown in Figure 94 on page 123 is used as the starting point since it includes information about both of the Tivoli products that are to be installed.

The response file shown in Figure 101 on page 132 is the edited response file for the installation of the two Tivoli products on the six machines. This response file demonstrates the use of the `[byProduct]` section. The `[byProduct]` section works very well in this example because the same product is being installed on several machines. The `[byNode]` section is not needed in this example and its values have been eliminated.

The attributes for the `[alias tmfgw...` have been copies and modified to reflect the three new gateway nodes that are going to be created. The attributes for the `[alias rctarmn...` in the original response file for the installation of the remote control product are correct for the machines in this example and remain unchanged in the edited response file. All other values in the original response file are unnecessary and have been deleted from the response file.

```
[byProduct]
tmfgw=mf2020h mf2020i mf2020j
rctarmn=wg2630a wg2630b wg2630c

[globals]
InstallPassword=admins

[alias tmfgw TMP32GATEWAY-3.2-TME_10_Framework_3.2_Gateway]
@GATE_NAME@=mf2020h-gateway
@GATE_PORT@=9494
Overwrite=

[alias tmfgw TMP32GATEWAY-3.2-TME_10_Framework_3.2_Gateway]
@GATE_NAME@=mf2020i-gateway
@GATE_PORT@=9494
Overwrite=

[alias tmfgw TMP32GATEWAY-3.2-TME_10_Framework_3.2_Gateway]
@GATE_NAME@=mf2020j-gateway
@GATE_PORT@=9494
Overwrite=

[alias rctarmn
RC_TGT_M-3.6-TME_10_Remote_Control_Target_3.6__Managed_Nodes_]
@CreatePaths@=1
@RC@=/TIVOLI/PCREMOTE
Overwrite=
```

Figure 101. SAMPLE2.RSP Response File to Install Additional Nodes

5.4.5.2 Installing Multiple Products on One Node

In this example Tivoli Framework Gateway, Remote Control Server, User Administration, Software Distribution, Userlink DHCP Service products and a patch for User Administration are all going to be installed on the single machine mf2020e.

This example demonstrates the use of the `[byNode]` section. When several products are installed on a single node the `[byNode]` section allows for you to easily define this type of installation to Tivoli Software Installation Service.

The response file in Figure 102 on page 133 defines the install of the five products and one patch onto a single machine. The `[byNode]` associates these products with the single node.

Each of the `[alias...` sections provide information about the products or patches to be installed. The `[machine mf2020e]` section provides information about the node where the products are to be installed.

```
[byNode]
mf2020e=fwgwy rcsrv usradm swdist udhcp usadupgr

[alias swdist Courier-3.1-TME_10_Software_Distribution_Release_3.1]

[alias usadupgr ADM_3.1_Service_Pack_02-3.1-TME_10_User_Administration_3.1.2_Upgrade]

[alias rcsrv RC_ALI-3.6-TME_10_Remote_Control_Server_3.6]

[alias fwgwy TMP32GATEWAY-3.2-TME_10_Framework_3.2_Gateway]
@GATE_NAME@=mf2020e-gateway
@GATE_PORT@=9494
Overwrite=

[alias usradm Admin-3.1-TME_10_User_Administration_3.1_]

[machine mf2020e]
access=tivoli
interp=aix4-r1

[alias udhcp UserLink_DHCP_Service-3.2-UserLink_DHCP_Service,_Version_3.2]

[globals]
InstallPassword=
```

Figure 102. Response File to Install Many Products on One Node

5.4.5.3 Installing Multiple Products on Multiple Nodes

In this example a single response file is used to install multiple products on to multiple machines. The response file shown in Figure 103 on page 134 directs Tivoli Software Installation Service to install the Tivoli Software Distribution product on the nodes mf2020g and mf2020b, the Tivoli User Administration product on the nodes wg2630a and wg2630b, and the patch for User Administration on the node wg2630b.

Because this response file is directing Tivoli Software Installation Service to install the multiple products to multiple machine both the `[byNode]` and `[byProduct]` session are utilized. By using both sections the response file can be logically divided to show the installation activity being requested. The `[byProduct]` section associates the Tivoli Software Distribution product with nodes mf2020g and mf2020b. The `[byNode]` section associates the node wg2630a with the Tivoli User Administration product, and node wg2630b with the Tivoli User Administration and the patch for Tivoli User Administration products. Figure 103 on page 134 displays the response file.

```
[byProduct]
swdist=mf2020g mf2020b

[byNode]
wg2630a=usradm
wg2630b=usradm usadupgr

[alias swdist Courier-3.1-TME_10_Software_Distribution_Release_3.1]

[alias usadupgr ADM_3.1_Service_Pack_02-3.1-TME_10_User_Administration_3.1.2_Upgrade]

[alias usradm Admin-3.1-TME_10_User_Administration_3.1_]

[globals]
InstallPassword=
```

Figure 103. Response File to Install Multiple Products on Multiple Nodes

5.4.6 Caution When Using Both byProduct and byNode

The use of both the [byProduct] and [byNode] sections in the same response file can be useful as shown in the example of Section 5.4.5.3, “Installing Multiple Products on Multiple Nodes” on page 133. But the use of both sections in the same response file can lead to confusion and problems. With both sections in a response file it is easy for you to make some simple mistakes when editing your response file. Having both sections in a response file makes it harder for you to visually see where errors have been introduced into your response file.

Sometimes Tivoli Software Installation Service performs just one of many actions you have specified. And this one may not be what you are intending. Sometimes the installation action performed by Tivoli Software Installation Service may complete without error making it harder for you to be aware of the deviation from what you intended. For this reason you may find that it is better to use only one of the sections in a response file.

The example shown in Figure 104 on page 135 demonstrate some of the confusion that can arise from incorrectly specifying items in a response file. In this response file the [machine mf2020d] is defined twice. First as a managed node (access=tivoli) and then later as a PC managed node (access=pcnode). In such a case, Tivoli Software Installation Service associates the alias tmfcl with the machine mf2020d as the managed node (access=tivoli) only and ignores the other information. When the installation activity takes place, Tivoli Software Installation Service will not install anything on the machines as a PC agent, even if the managed node was mistakenly defined as a managed node in the response file using the hostname of the PC managed node.

```
[byProduct]
tmfcl=mf2020f mf2020d
tmfclupgr=mf2020g

[byNode]
mf2020f=tmfcl
mf2020d=tmfcl
mf2020g=tmfcl

[alias tmfcl TMF-client-3.
LIB=C:/tivoli/lib
BIN=C:/tivoli/bin
DB=C:/tivoli
MAN=C:/tivoli/man
CAT=C:/tivoli/msg_cat
APPD=C:/tivoli/X11/app-defaults
@CreatePaths@=1
@AutoStart@=1
@SetPort@=1
PR_NAME=Asia-region
Overwrite=

[alias tmfclupgr TMF-client-3.2]
LIB=C:/Tivoli/lib
BIN=C:/Tivoli/bin
DB=C:/tivoli
MAN=C:/Tivoli/man
CAT=C:/Tivoli/msg_cat
APPD=C:/lib/X11/app-defaults
@CreatePaths@=1
@AutoStart@=1
@SetPort@=1
PR_NAME=Asia-region
TapUser=
TapPassword=
Overwrite=LIB BIN MAN CAT APPD
```

Figure 104 (Part 1 of 2). SAMPLE5.RSP Response File with Cross-References

```
[machine mf2020d]
access=tivoli
interp=aix4-r1

[machine mf2020f]
access=tivoli
interp=w32-ix86

[machine mf2020g]
access=tivoli
interp=aix4-r1

[machine mf2020d]
access=pcnode
interp=w32-ix86

[globals]
InstallPassword=
```

Figure 104 (Part 2 of 2). SAMPLE5.RSP Response File with Cross-References

The response file shown in Figure 104 on page 135 also has two aliases referencing the same product. The alias `tmfcl` refers to the Tivoli Management Framework software, whereas the alias `tmfclupgr` refers to an upgrade for the Tivoli Tivoli Management Framework. The alias `tmfclupgr` has an `Overwrite` entry specifying which of the existing Tivoli Tivoli Management Framework directories on a client should be overwritten. In the `[byNode]` section, machine `mf2020g` is associated with alias `tmfcl`, but in the `[byProduct]` section alias `tmfclupgr` is also associated with machine `mf2020g`. In such a case, Tivoli Software Installation Service picks up the association made in the `[byProduct]` section, and only the alias `tmfclupgr` is installed on machine `mf2020g`.

One of the best ways to verify that your response file will perform the actions that you desire is to import the response file into the Tivoli Software Installation Service graphical user interface. This not only parses the response file and lists any syntactical errors that Tivoli Software Installation Service finds with your response file but you then have the added advantage of viewing the Install Details matrix. By studying the Install Details matrix you see exactly which products will be installed onto which machines by the `X` placed in each cell of the Install Details matrix based on how Tivoli Software Installation Service interpreted your response file. For guidance on importing response files into the Tivoli Software Installation Service graphical user interface, see step 5 on page 123.

Chapter 6. Using Tivoli Software Installation Service to Install Tivoli Products

This chapter describes how to use Tivoli Software Installation Service for installing Tivoli products. Two examples are presented. The first shows how to install a single Tivoli product to a single machine. The second is more complex and shows the installation of multiple Tivoli products onto multiple machines.

6.1 Overview of Pushing Products

The significant advantage of using Tivoli Software Installation Service for the installation of Tivoli products lies in the fact that it allows you to select a number of products and machines in a single session. Then install all the selected products to these machines by the selection of a single (Install) button.

Another advantage of using Tivoli Software Installation Service is that you are allowed to select a set of products for a particular machine while selecting a different set of products for other machines. In this way Tivoli Software Installation Service gives you the flexibility of selecting and tailoring the products that meet your requirements.

An added advantage of using Tivoli Software Installation Service to install Tivoli products is that the install of the products can be done in parallel making the total installation time shorter. To be able to perform parallel installations Tivoli Software Installation Service needs to be aware of prerequisite products and the order they need to be installed. By doing this for you, it is easier to install Tivoli products using Tivoli Software Installation Service since it both checks and enforces the prerequisites for the products you are installing.

6.2 Examples of Pushing Tivoli Products

This section presents two examples that show how you can use Tivoli Software Installation Service to install Tivoli products. The first example in Section 6.2.1, “Single Product and Machine” on page 138 is a simple install of a single product on a single machine. Then to better show the full capabilities of Tivoli Software Installation Service the second example in Section 6.2.2, “Multiple Products and Machines” on page 148 illustrates how to install multiple products to multiple machines.

6.2.1 Single Product and Machine

In this first example, step by step guidance is given on how to install a single product to a single machine in a Tivoli Managed Environment using Tivoli Software Installation Service.

Table 4 gives information about the activity to be performed. A node mf2020e, an AIX machine, is the TMR server and Tivoli Software Installation Service is running on this TMR server. The column Products to be Installed shows the product, Remote Control Server, that is to be installed on to the TMR server, mf2020e.

Table 4. Single Product

Node Name/ Machine Name	Platform	Role	Products to be Installed
mf2020e	AIX	TMR server running SIS	Remote Control Server

Before you can push Tivoli products using Tivoli Software Installation Service you need to first import them into the Install Repository. In this example where Tivoli Software Installation Service is running on the TMR server the Install Repository is located on the server as well. For more information on how to import the Remote Control Server product into Install Repository follow the steps described in Section 4.4, “Populating the Install Repository” on page 44.

When the product you want to install has been imported into the Install Repository you can then perform the following steps to push the install of the product to a machine.

1. You need to start the Tivoli desktop if it is not already running. In this example the Tivoli desktop was started on the TMR server mf2020e.
2. From the Tivoli desktop start Tivoli Software Installation Service. Section 4.2, “Starting Tivoli Software Installation Service” on page 40 describes how to perfrom this task. After the Tivoli Software Installation Service product initializes you see the TME 10 Software Installation Service dialog shown in Figure 105 on page 139. This may take a few seconds, so be patient.

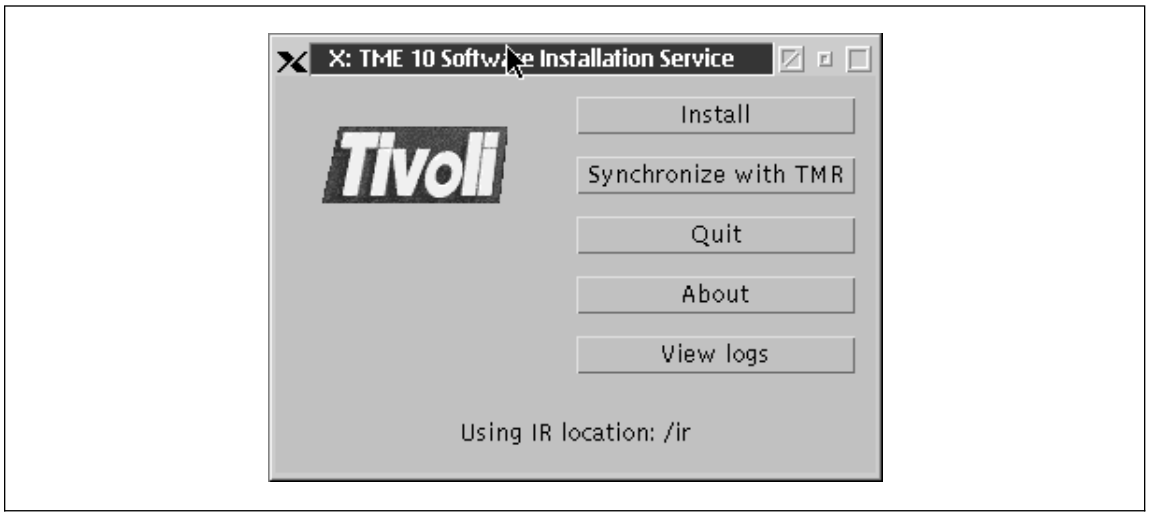

Figure 105. SIS Main Dialog

3. From the TME 10 Software Installation Service dialog, select **Install** and the TME 10 Software Installation Service - Install details dialog box shown in Figure 106 is displayed.

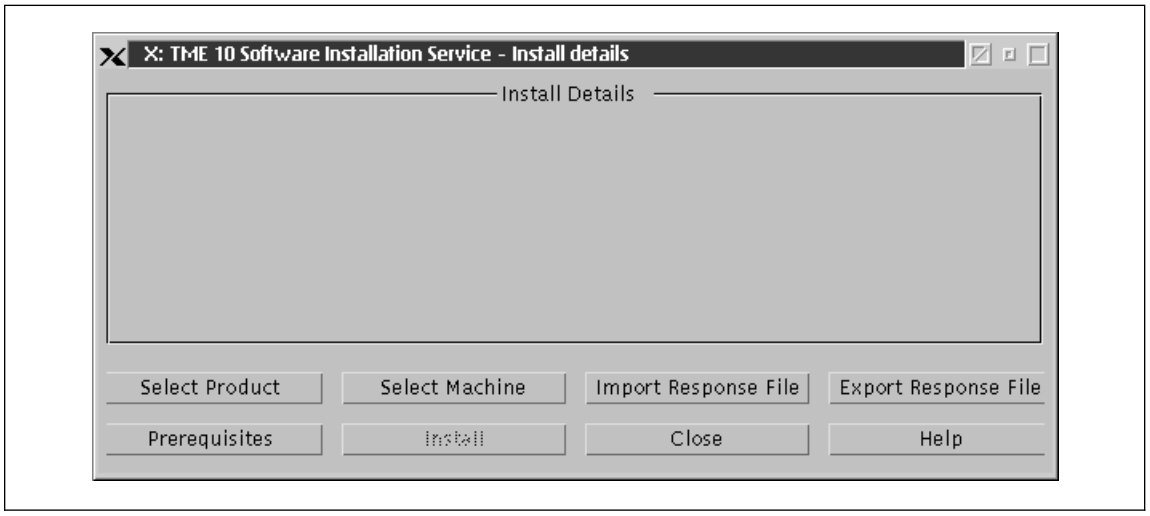

Figure 106. An Empty SIS Install Details Dialog

When you initially start Tivoli Software Installation Service no products or machines are displayed in the Install Details area of the TME 10 Software Installation Service - Install details dialog. This Install Details area is where you build a worksheet matrix of products and machines. You use

this matrix to direct Tivoli Software Installation Service throughout the installation process.

In this matrix you:

- Select the product that you want to install
- Select the machine on which the product is to be installed

4. To select the product you want to be placed on the worksheet, from the TME 10 Software Installation Service - Install details dialog shown in Figure 106 on page 139 select **Select Product**. The Install Repository - Select Product dialog shown in Figure 107 is displayed.

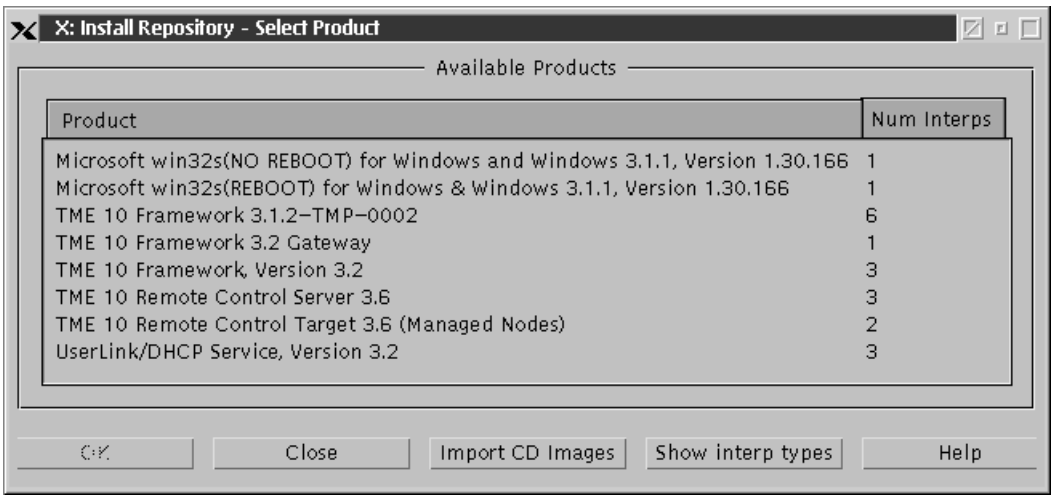

Figure 107. Available Products Dialog

5. From the list of Available Products of the Install Repository - Select Product dialog shown in Figure 107 select the product that you want to be installed. In this example **TME 10 Remote Control Server 3.6** is selected as shown in Figure 108 on page 141. After you have selected the product that you want to install select **OK** on the bottom of the Install Repository - Select Products dialog.

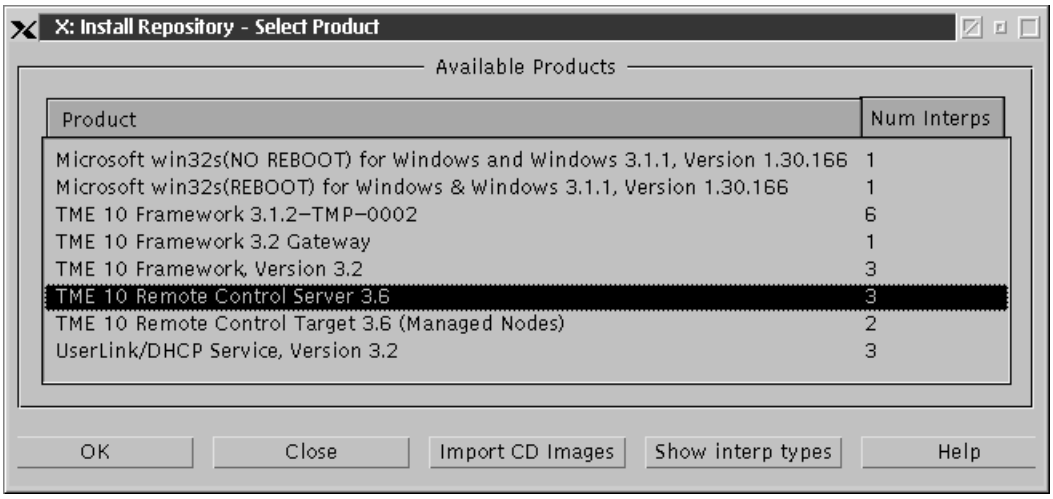

Figure 108. Select Product Dialog with One Product Selected

You are returned to to the TME 10 Software Installation Service - Install details dialog shown in Figure 109 with the selected product shown in the Install Details area of the dialog. In this example **TME 10 Remote Control Server 3.6** is displayed in the Install Details list.

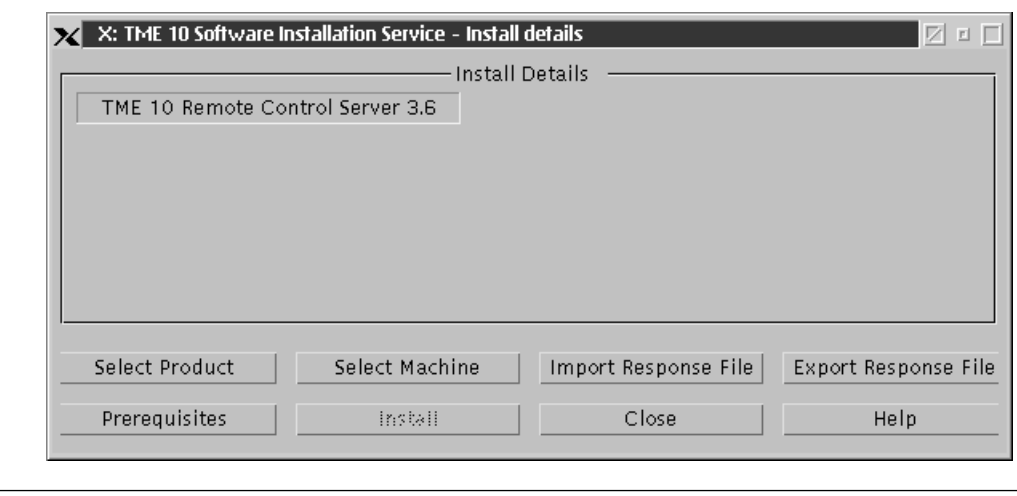

Figure 109. Install Details Dialog with One Product Selected

Now that you have identified the product you want installed, the next step is to select the machine on which you want to install this product.

6. From the TME 10 Tivoli Software Installation Service - Install details dialog shown in Figure 109 select **Select Machine**. This takes you to the Install Repository - Select Machine dialog shown in Figure 110 on page 142. The Install Repository - Select Machine dialog lists all of the existing machines in the Tivoli Management Region.

Figure 110. Select Machine Dialog

7. From the machines listed in the All Nodes area of the dialog you need to select the machine where you want to install the product. In this example, machine **mf2020e** was selected as shown in Figure 111 on page 143. After you select the machine select **OK** on bottom of the Install Repository - Select Machine dialog.

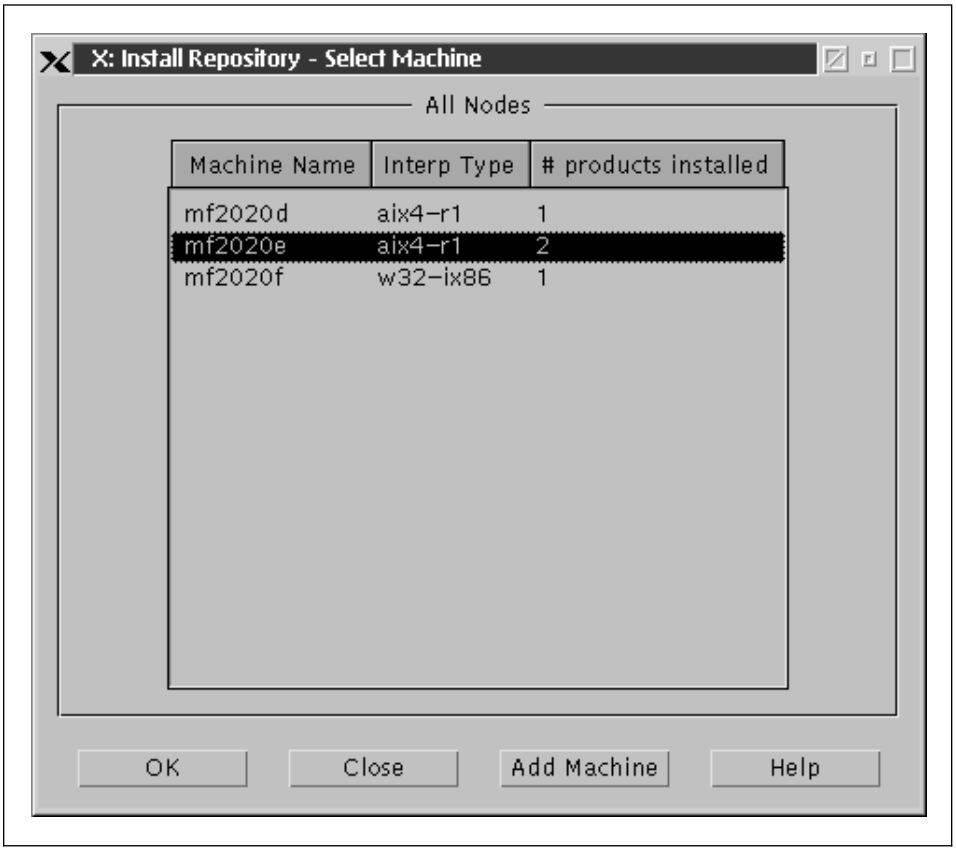

Figure 111. Select Machine Dialog with Machine Selected

You are returned to the TME 10 Software Installation Service - Install details dialog as shown in Figure 112 on page 144. The Install Details matrix of the TME 10 Software Installation Service - Install details dialog has been filled in with the product and machine you selected.

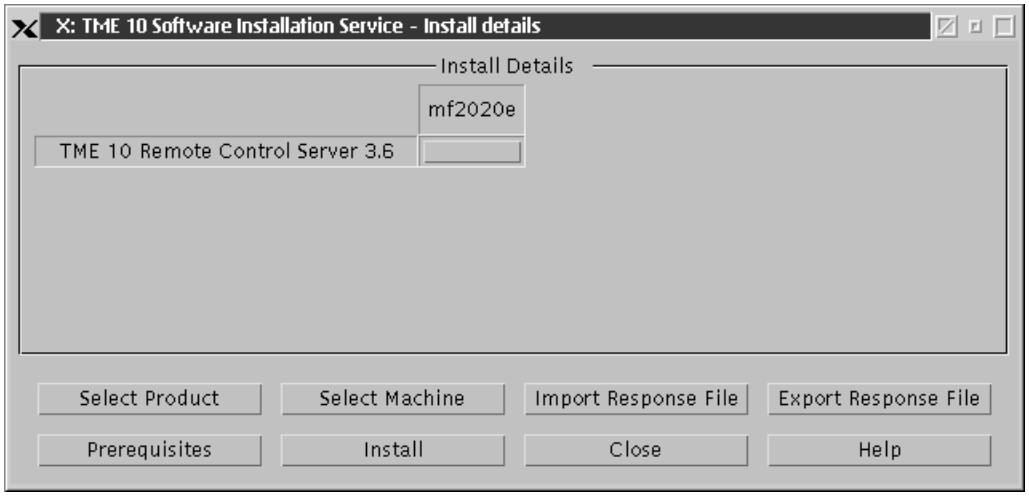

Figure 112. Install Details Dialog Showing One Product and Machine

The TME 10 Software Installation Service - Install details dialog Install Details matrix lists the selected machine in the column and the selected product in the row of the matrix. All of the cells at the intersections of rows and columns of the worksheet matrix display information about the status of each product on each machine. The cells are different colors depending on the status of each product's installation on each machine as follows:

Green The product is already installed.

Gray The product has got all the prerequisites loaded on the selected machine and is ready to be installed.

Dark Gray One or more of the prerequisites are not installed on the selected machine. You can click on the dark gray cells to display detail information on the prerequisite product or products that need to be installed before you can proceed with the installation of the product you have selected to be installed on this machine.

In the example shown in Figure 112 the single cell for the one product on the one machine is gray indicating that the installation can proceed.

8. To indicate to Tivoli Software Installation Service that you want a product on be installed on a machine, you need to select the cell in the Install Details matrix that corresponds to the product and machine. In the example shown in Figure 112 where only the single TME 10 Remote Control Server 3.6 product is to be installed on the mf2020e machine there is only one cell available for selection. When you select this cell an X

appears in the cell as shown in Figure 113 on page 145. This indicates that Tivoli Software Installation Service is ready to install the product on the selected machine.

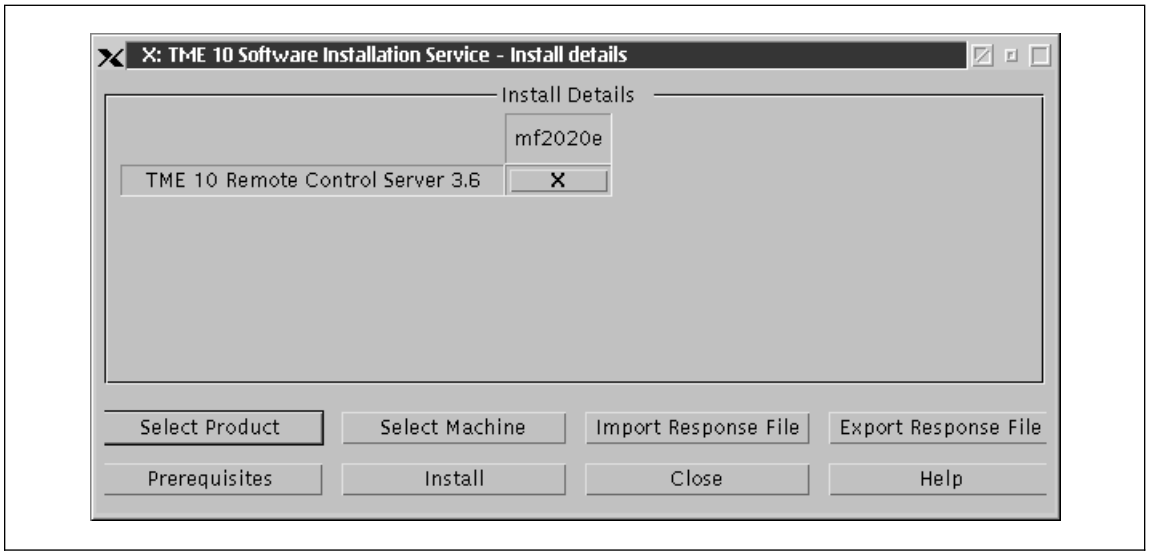

Figure 113. Install Details Dialog with One Product and Machine Selected

9. To start installation and push the product to the machine select **Install** at the bottom of the TME 10 Software Installation Service - Install details dialog. The Installation Progress dialog shown in Figure 114 on page 146 is displayed.

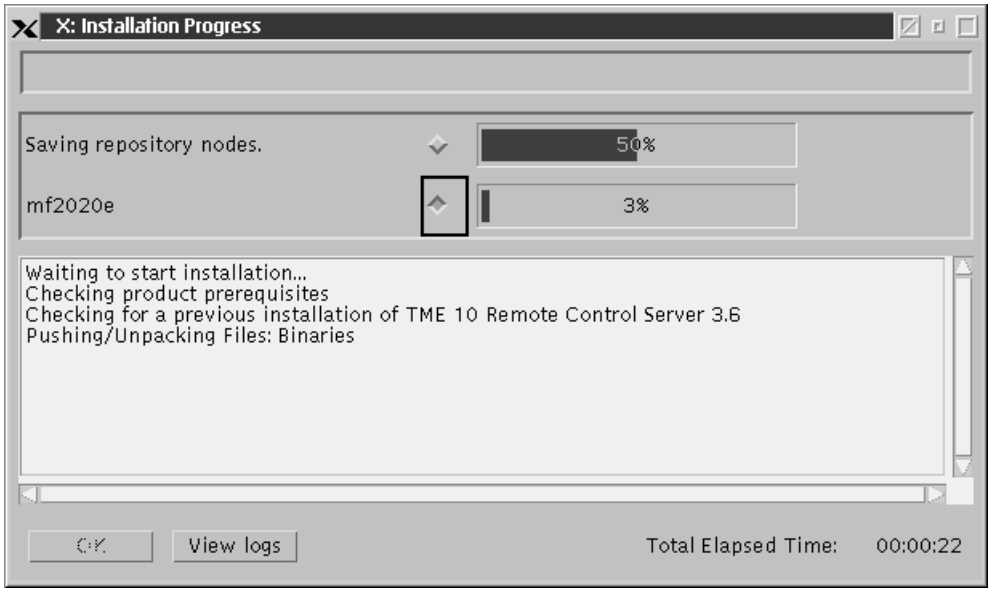

Figure 114. Installation Progress Dialog

You can follow the various activities being performed by Tivoli Software Installation Service on the Installation Progress dialog. Slide bars show the progress of the different installation activities. Colors are used to indicate the status of the installation as well as the percent complete. The colors and their meanings are:

Blue Installation in progress.

Green The installation has completed successfully.

Red The installation has failed.

In addition to the slide bars Tivoli Software Installation Service displays status messages about the installation activity in the bottom half of the Installation Progress dialog.

When Tivoli Software Installation Service successfully completes the installation of the selected product on the selected machine the color of the status bars changes to green and the Success message is displayed in the slide bar as shown in Figure 115 on page 147.

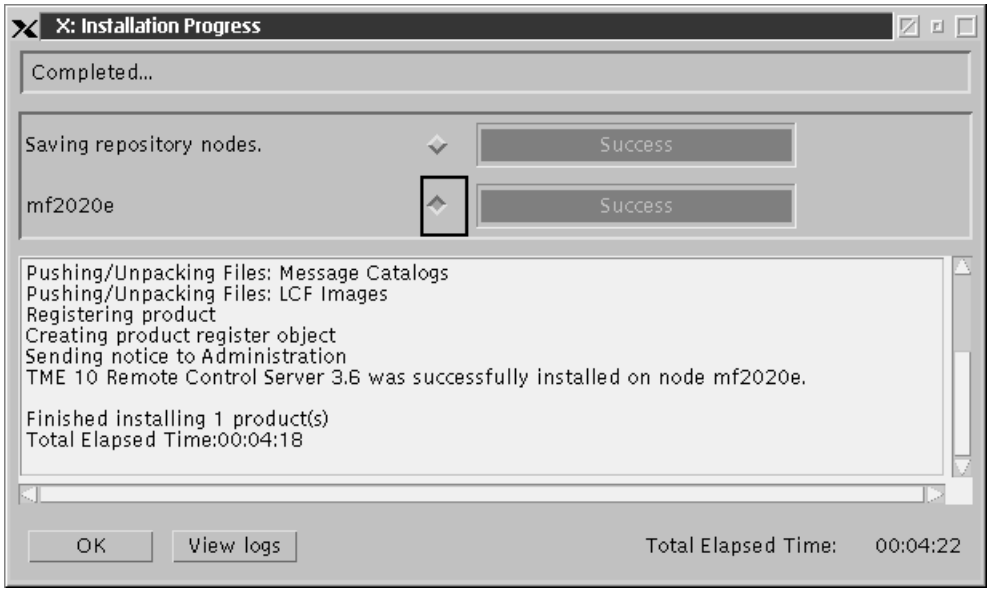

Figure 115. Installation Progress Complete for One Product and Machine

10. To conclude the installation of the product select **OK** on the bottom of the Installation Progress dialog. You are returned to the TME 10 Software Installation Service - Install details dialog shown in Figure 116 on page 148.

    If the installation has failed select **View logs** on the Installation Progress dialog to find out more information about the cause of failure.

    Note

    For more information on how to view and interpret the logs refer Chapter 7, “Tivoli Software Installation Service Logs” on page 167.

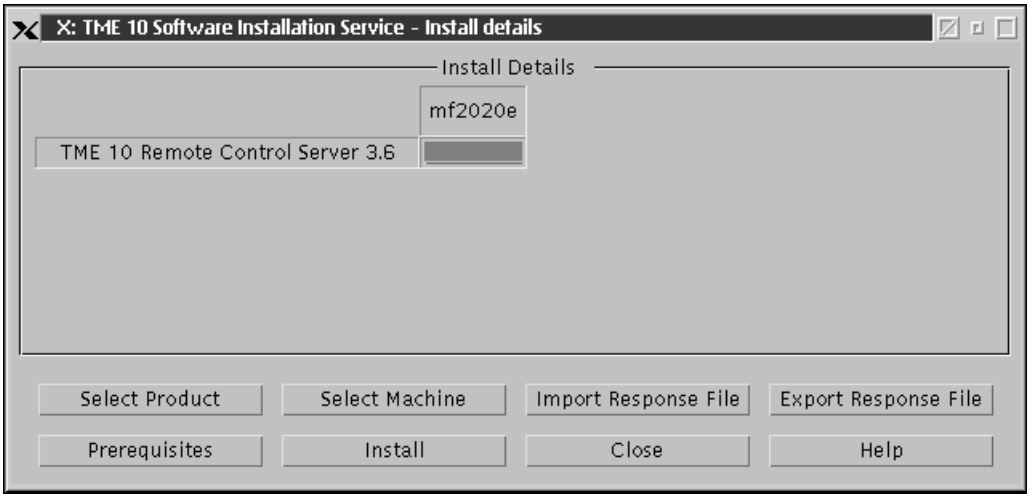

Figure 116. Install Details Dialog Showing One Product and Machine Installed

In the Install Details matrix the cell corresponding to the product and machine just installed is green. In the example shown in Figure 116 the one cell for the TME 10 Remote Control Server 3.6 product on the machine mf2020e is now green. Following a successful installation, as in this example, any time in the future when you select the TME 10 Software Installation Service Remote Control Server 3.6 product and the mf2020e machine the cell in the Install Details matrix for this product on this machine is always displayed in green indicating that the product is installed on this machine.

11. To end the installation activity select **Close** on the TME 10 Software Installation Service - Install details dialog. You are returned to the TME 10 Software Installation Service dialog shown in Figure 105 on page 139 where you can select **Quit** to terminate the Tivoli Software Installation Service session.

6.2.2 Multiple Products and Machines

This section provides you with step by step guidance on how to install multiple Tivoli products to multiple machines using Tivoli Software Installation Service. Table 5 on page 149 lists a set of machines in a Tivoli Management Region, the roles associated with these machines, the platform that these machines are running on and the products that are to be installed on these machines for this example.

Table 5. Multiple Products and Machines to be Installed

Node Name/ Machine Name	Platform	Role	Products to be Installed
mf2020e	AIX	TMR Server running SIS	Software Distribution and User Administration
mf2020d	AIX	Managed Node	User Administration
mf2020f	NT	Managed Node	Remote Control Controller, Remote Control Target, User Administration and Software Distribution
mf2020g	NT	Managed Node	Remote Control Target, User Administration and Software Distribution

In this example, the Tivoli Managed Environment listed in Table 5 is made up of the TMR server that is an AIX machine at node mf2020e. On this machine Software Installation Service is installed and running. There are 3 other managed nodes (mf2020d, mf2020f and mf2020g) in the region running on various platforms where four Tivoli products are to be installed. The Products to be Installed column of Table 5 indicates which of the following products are to be installed on the various machines:

1. Remote Control Controller
2. Remote Control Target
3. Software Distribution
4. User Administration

Before you can install any Tivoli products using Tivoli Software Installation Service, you first need to import the products into the Install Repository. For guidance on importing the above products into the Install Repository follow the steps outlined in Section 4.4, “Populating the Install Repository” on page 44. When the products you wish to install are imported into the Install Repository you can perform the following steps to install the multiple products on to the various machines:

1. Start the Tivoli desktop. In this example the Tivoli Desktop is started on the TMR Server, mf2020e.
2. From the Tivoli Desktop, start Tivoli Software Installation Service. Detailed directions on how to start Tivoli Software Installation Service can be found in Section 4.2, “Starting Tivoli Software Installation Service” on page 40.

The TME 10 Software Installation Service dialog shown in Figure 117 on page 150 is displayed. This may take a few seconds, so be patient.

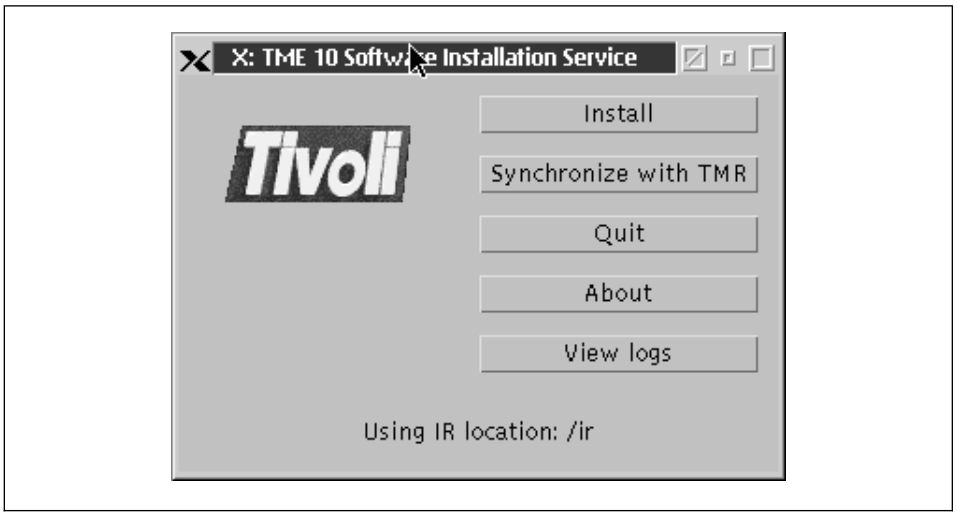

Figure 117. SIS Dialog

3. From the TME 10 Software Installation Service dialog shown in Figure 117 select **Install** and the TME 10 Software Installation Service - Install details dialog shown in Figure 118 is displayed.

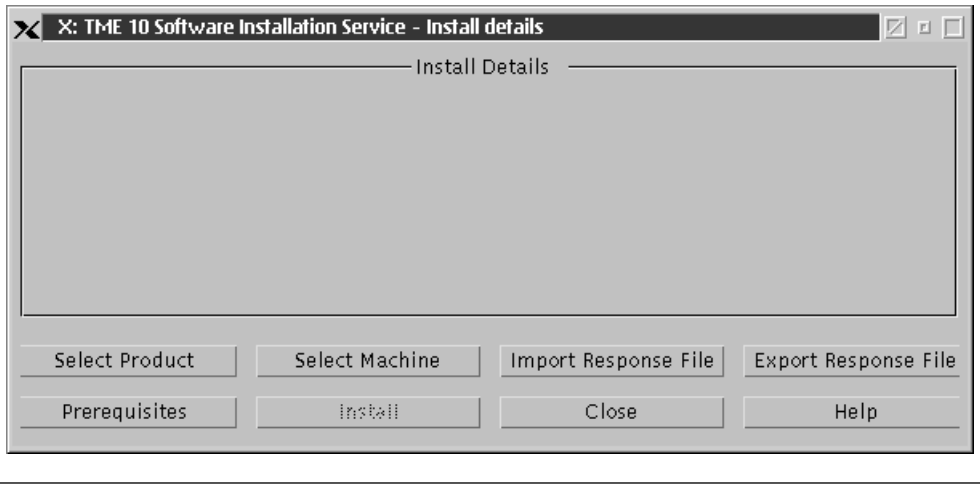

Figure 118. Empty Install Details Dialog

When you initially start Tivoli Software Installation Service no products or machines are displayed in the TME 10 Software Installation Service - Install details dialog. As you

- Select the products that you want to installed
- Select the machines on which you want the products to be installed

the Install Details area of the dialog becomes a worksheet matrix. You use this worksheet matrix to direct Tivoli Software Installation Service as to the products you want installed on particular machines.

You build the worksheet matrix by selecting products and machines from various Tivoli Software Installation Service dialogs. This can be done in any order. In this example, first the products are selected and then the machines. The order of this selection is not important, as long as you do both.

4. To begin to build your worksheet matrix select **Select Product** from the TME 10 Software Installation Service - Install details dialog shown in Figure 118 on page 150. The Install Repository- Select Product dialog shown in Figure 119 is displayed.

Figure 119. Available Products Dialog

5. Select the products that you want to install during this session from the list of Available Products on the Install Repository-Select Product dialog

shown in Figure 119. In this example the following four products are selected:

a. TME 10 Remote Control Controller 3.6 (Managed Nodes)

b. TME 10 Remote Control Target 3.6 (Managed Nodes)

c. TME 10 Software Distribution Release 3.1

d. TME 10 User Administration 3.1

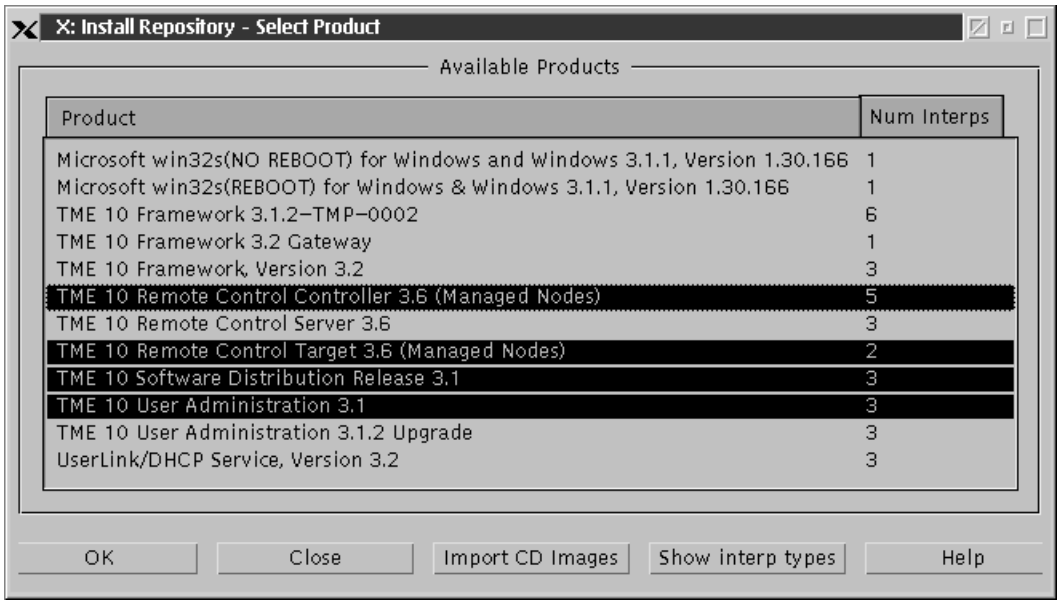

Figure 120. Four Products Selected from Available Products List

Figure 120 shows the four products selected for this example from the list of Available Products. When you have finished selecting the products you want to install, select **OK**.

This returns you to the TME 10 Software Installation Service - Install details dialog shown in figure Figure 121 on page 153. The worksheet matrix is starting to take shape with the products selected listed in the Install Details area of the dialog.

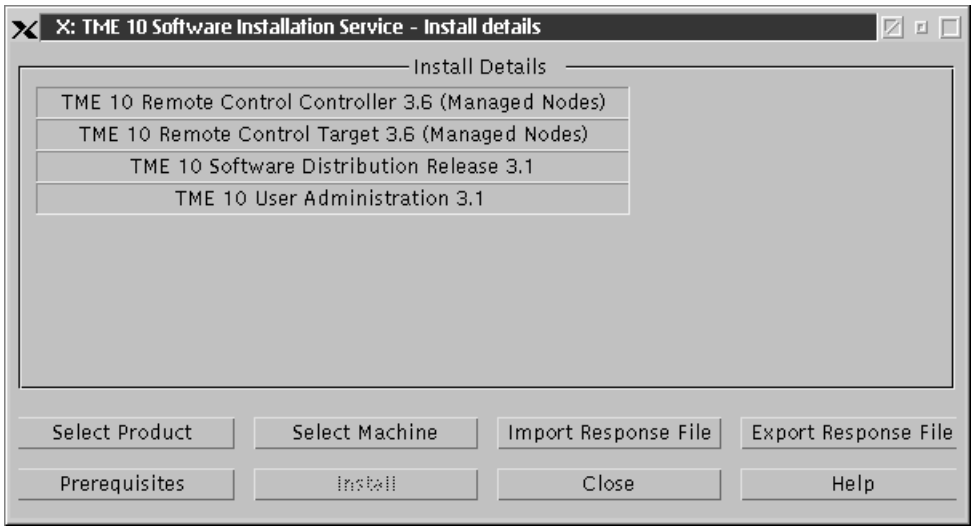

Figure 121. Install Details Dialog Showing Four Products

Now that you have selected the products that you want to install, the next step is to select the machines you want to install these products upon.

6. From the TME 10 Software Installation Service - Install details dialog shown in Figure 121 select **Select Machine**. This takes you to the Install Repository - Select Machine dialog shown in Figure 122 on page 154.

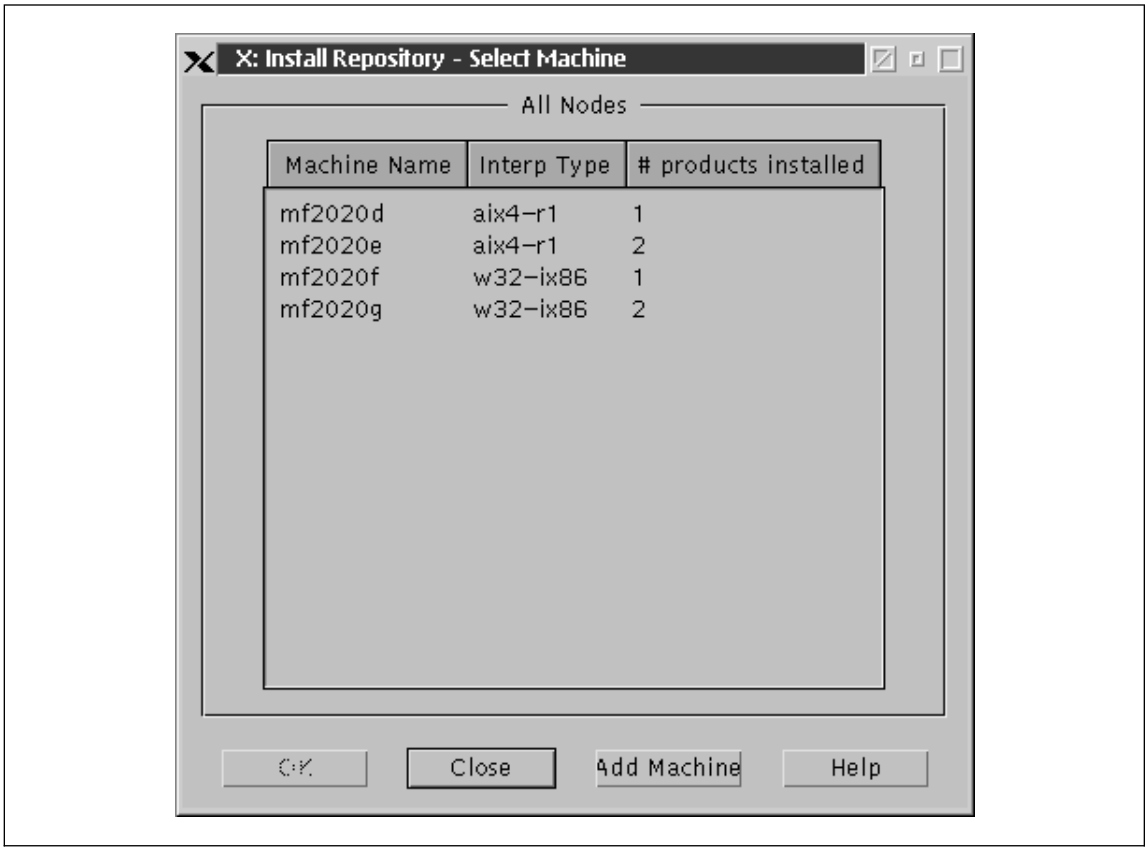

Figure 122. Select Machine Dialog

7. From the machines in the All Nodes list select the machines you want to install the selected products upon. In this example, the machines mf2020d, mf2020e, mf2020f and mf2020g are selected as shown in Figure 123 on page 155.

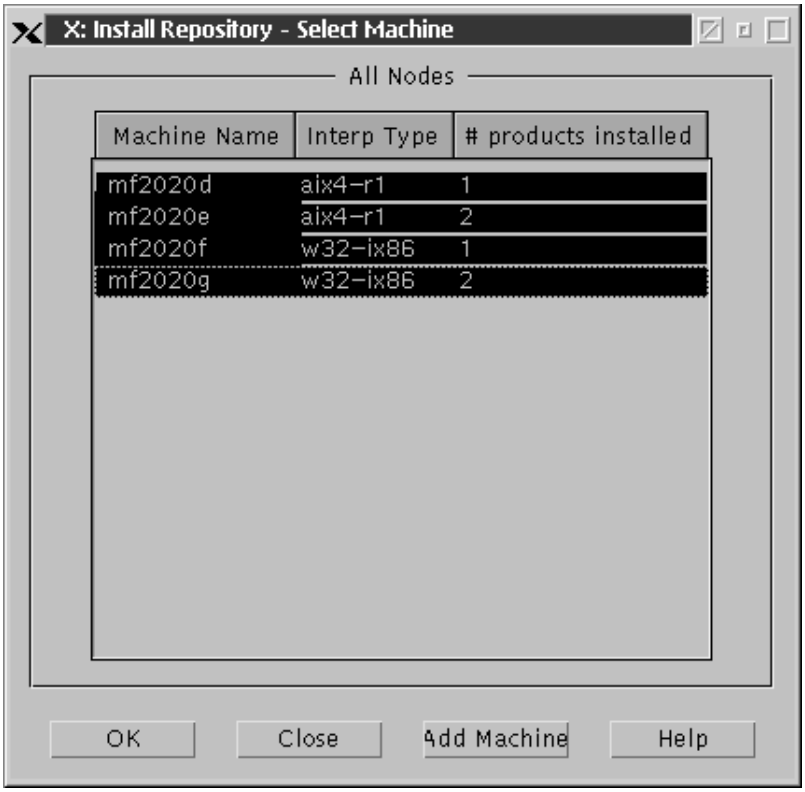

Figure 123. Select Machine Dialog with Machines Selected

8. After you finish selecting the machines form the All Nodes list select **OK** on the Install Repository - Select Machine dialog. You are returned to the TME 10 Software Installation Service - Install details dialog shown in Figure 124 on page 156.

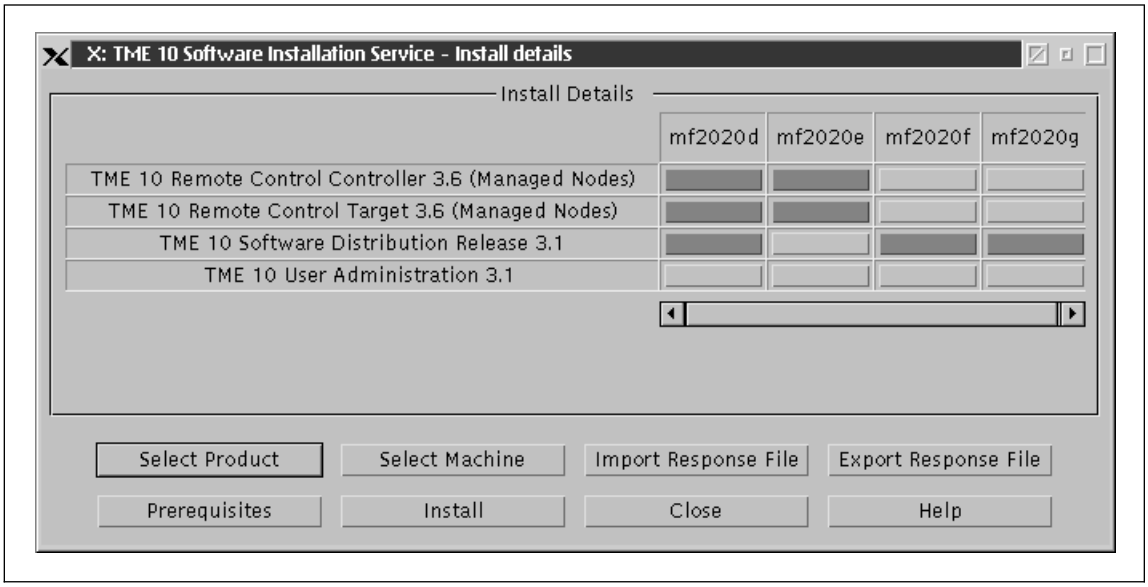

Figure 124. Install Details Dialog Showing Multiple Products and Machines

The Install Details matrix now has all the machines selected displayed in the columns and the products selected listed in the rows of the matrix. At the intersection of of each row and column is a cell of the worksheet. These cells use different colors to represent the status of a product with respect to a particular machine.

Green The product is already Installed

Gray The product has passed all prerequisite checks for the selected machine and is ready to be installed.

Dark Gray One or more of the prerequisites are not installed on the selected machine. Clicking on this cell gives details about the prerequisite products that needs to be installed.

In Figure 124 there are several cells that are displayed in dark gray. This indicates that the one or more prerequisites for that particular product are missing. If you click on a dark gray cell you are given additional information about the missing prerequisites for the product on the machine that the cell represents.

If for example, you are interested in knowing more about the missing prerequisites for TME 10 Software Distribution Release 3.1 on the mf2020d, mf2020f and mf2020g machines you can click on any one of the dark gray cells at the intersection of the product and machines in the Install Details matrix. You are shown the dialog stating that the product

has to be installed on the TMR server first as shown in Figure 125 on page 157.

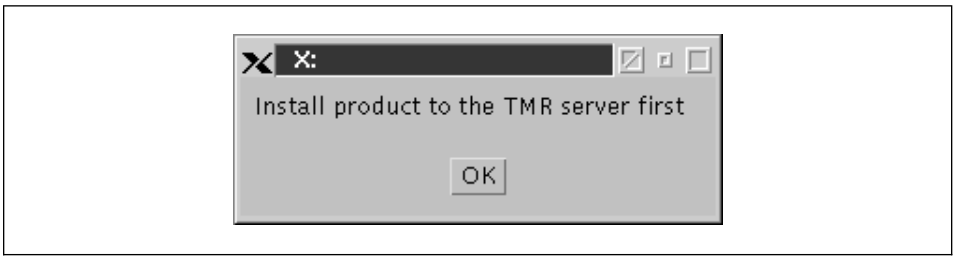

Figure 125. Product Status Message Dialog

Similarly if you are interested in the TME 10 Remote Control Controller 3.6 and TME 10 Remote Control Target 3.1 products on the machines mf2020d and mf2020e, you can click on these dark gray cells in the Install Details matrix. The dialog shown in Figure 126 is displayed stating that these products will not work on the platform of the selected machines.

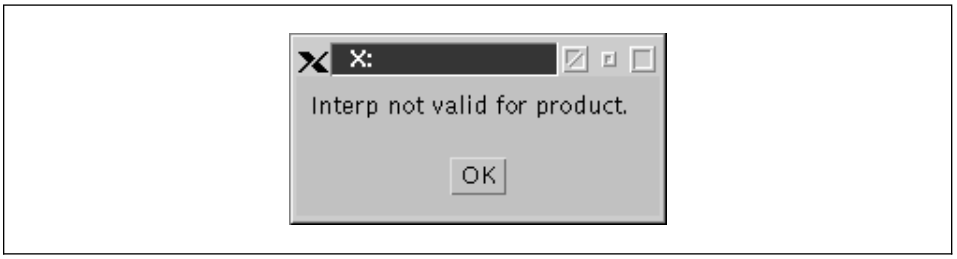

Figure 126. Interps Message Dialog

When you have viewed the information in these dialogs select **OK** to close the information dialogs.

9. You have completed the process of selecting the products and machines. Now you need to direct Tivoli Software Installation Service as to which of the products you have selected are to be installed on each machine. You do this by clicking on the cells that represent each product on each machine.

   For this example, the products listed in Table 5 on page 149 are selected for installation on the respective machines shown in the table. You may find it easiest to select all the products to be installed on a machine as done in this example. In this example, the selected products to be installed on the TMR server mf2020e will be done first.

Note

Always start selecting products for the TMR server first. This is because some of the products have to be installed on the TMR server first. Only after indicating that you want Tivoli Software Installation Service to install the product on the server will Tivoli Software Installation Service then allow you to select the products for installation on other machines in the region. This can be seen in the installation of TME 10 Software Distribution Release 3.1 in this example.

In the column representing the machine mf2020e select the cell on the row representing the product TME 10 Software Distribution Release 3.1. An X mark appears in the cell implying that the product has been selected for installation.

As you select this cell, the color of the other cells in the row turn to gray from dark gray as shown in Figure 127 on page 159. This indicates that the prerequisite for the other machines in the TMR has been satisfied and they are now ready to install the TME 10 Software Distribution Release 3.1. product.

Note

Even though the cell's color has changed from dark gray to gray, no actual product installation has taken place. The program logic contained in Tivoli Software Installation Service understands that the prerequisite will be met at the time of installation. For products like TME 10 Software Distribution Release 3.1, when the installation is started, Tivoli Software Installation Service ensures that the product is installed on the TMR server first before proceeding to install it on any of the managed nodes in the region.

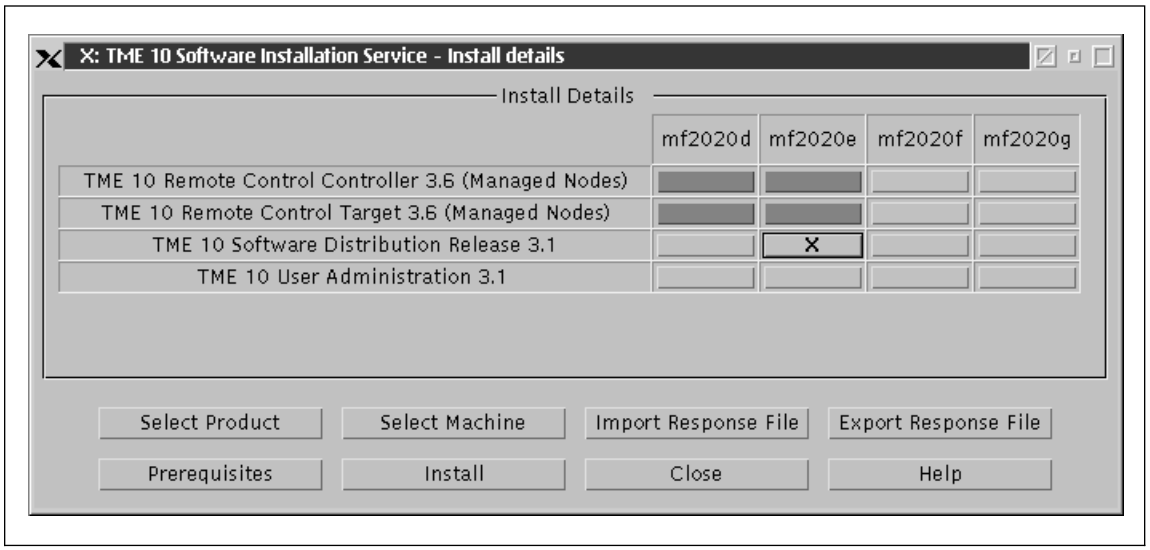

Figure 127. Install Details Dialog with First Product Selected

For this example, continue selecting products for mf2020e by selecting the cell on the row TME 10 User Administration 3.1. An X mark appears in the cell as shown in the TME 10 Software Installation Service - Install details dialog as shown in Figure 128 indicating that the product has been selected for installation. This completes the selection of the two products to be installed on mf2020e in this example.

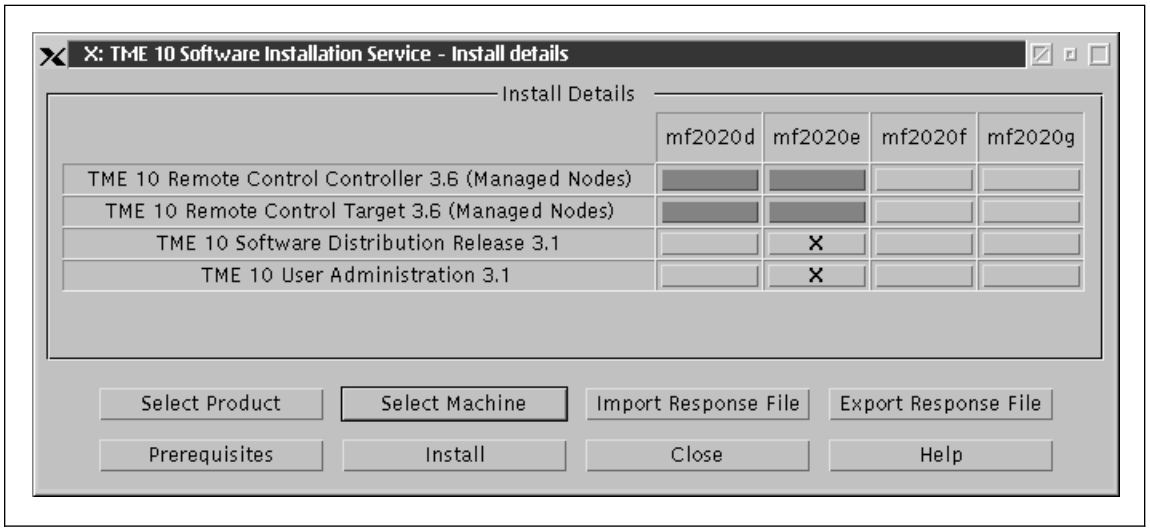

Figure 128. Install Details with Products Selected for mf2020e

10. To select the one product to be installed on the machine mf2020d, click on the cell corresponding to the TME 10 User Administration row and mf2020d column in the Install Dialog matrix shown in Figure 128. An X appears in the cell as shown in Figure 129 on page 160.

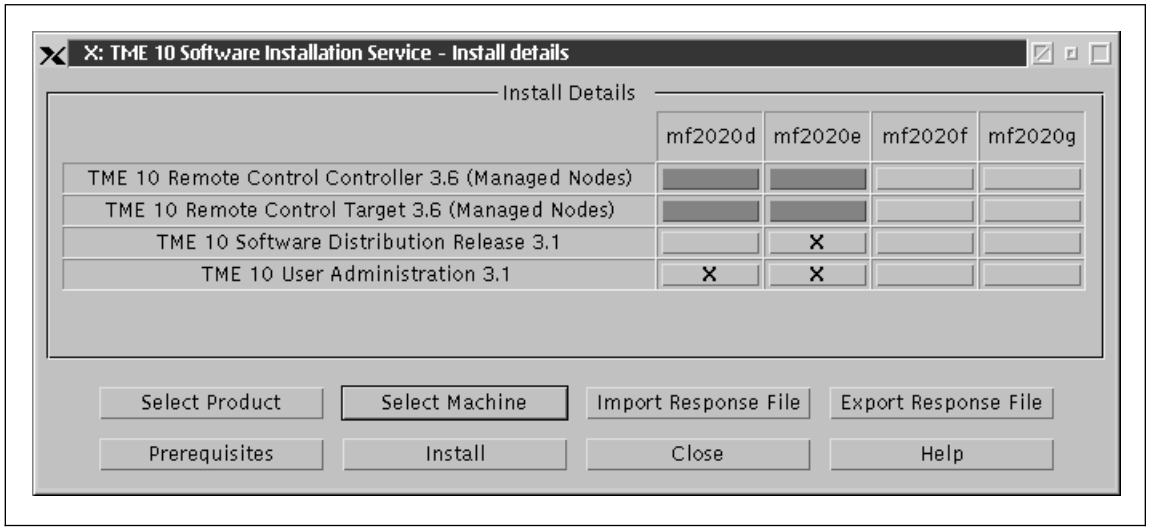

Figure 129. Install Details with Product Selected for mf2020d

11. To select the four products to be installed on the mf2020f machine you need to click on the four cells under the mf2020f heading in the Install Details matrix for the following products:

    - TME 10 Remote Control Controller 3.6 (Managed Nodes)
    - TME 10 Remote Control Target 3.6 (Managed Nodes)
    - TME 10 Software Distribution Release 3.1
    - TME 10 User Administration 3.1

    An X appears in each of the cells as you click on them to indicate that the product is selected for installation on the mf2020f machine. When all four products have been selected an X appears in all of the cells as shown in Figure 130 on page 161.

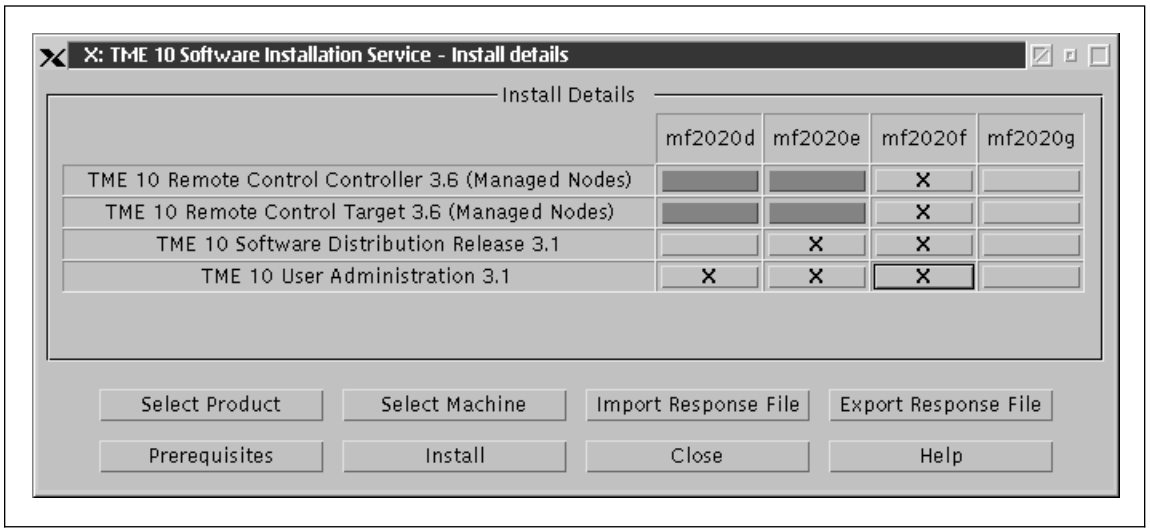

Figure 130. Install Details with Products Selected for mf2020f

12. To select the three products to be installed on the mf2020g machine you need to click on the three cells under the mf2020g heading in the Install Details matrix for the following products:

    - TME 10 Remote Control target 3.6 (Managed Nodes)
    - TME 10 Software Distribution Release 3.1
    - TME 10 User Administration 3.1

    An X appears in each of the cells as you click on them to indicate that the product is selected for installation on the mf2020g machine. When all three products have been selected an X appears in all of the cells as shown in Figure 131 on page 162.

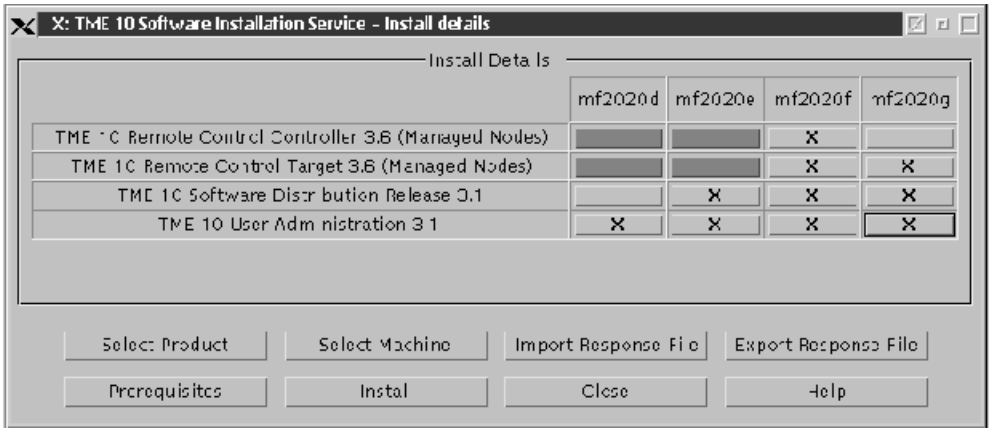

Figure 131. Install Details with Products Selected for mf2020g

The TME 10 Software Installation Service - Install details dialog with the Install Details matrix shown in Figure 131 now represents the total installation of the various products on the four machines for this example. This dialog provides you with a visual representation of the installation activity that you are requesting Tivoli Software Installation Service to perform.

You can use the Install Details matrix to verify the actions and activities you want to be accomplished are specified correctly before actually starting the installation. If you find that you have for some reason incorrectly specified a product on a machine click on the X in the cell of the Install Details matrix and Tivoli Software Installation Service removes the X from the cell indicating that the product will not be installed on that particular machine.

13. When you have verified that the Install Details matrix represents the installation activity that you want performed, you can initiate the installation and have Tivoli Software Installation Service start pushing the selected products to the selected machines by selecting **Install** on the TME 10 Software Install details dialog shown in Figure 131. The Installation Progress dialog shown in Figure 132 on page 163 is displayed.

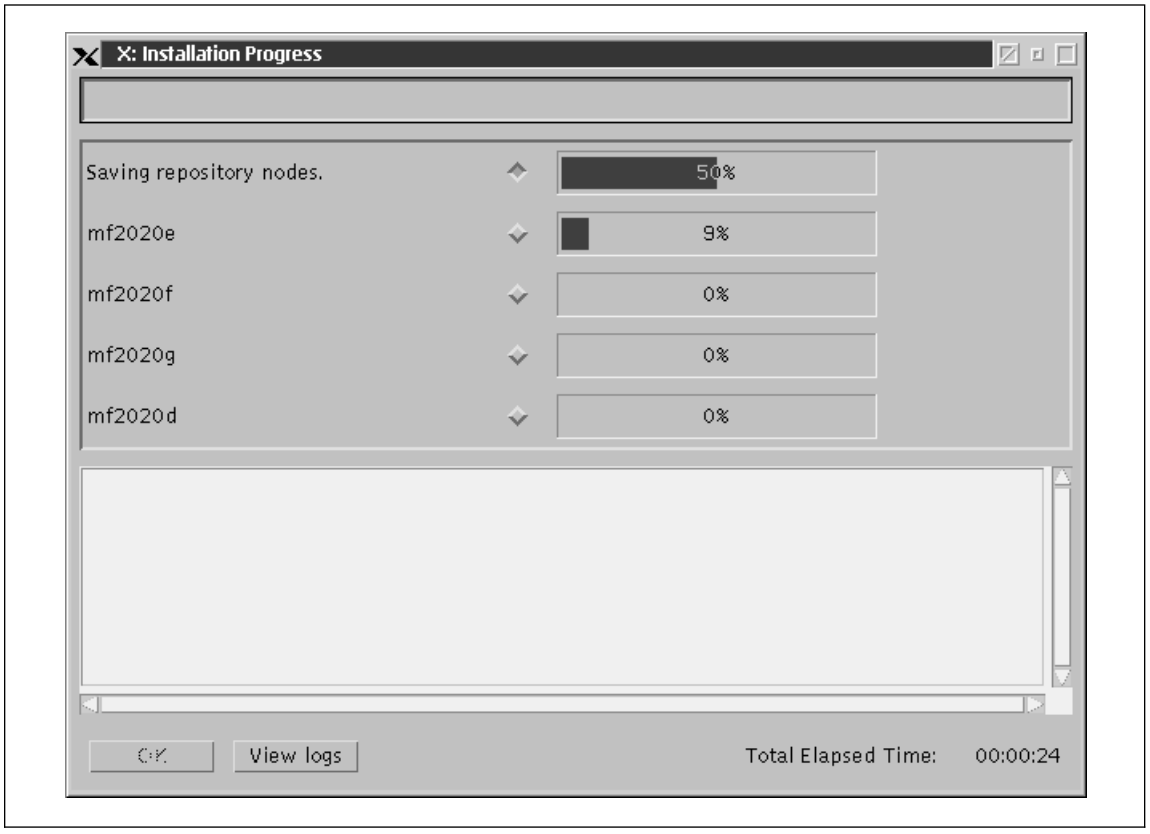

Figure 132. Install Progress Dialog with Installation Active

The various slide bars displayed on the Installation Progress dialog show the progress of the installation activity both as a percentage number and color fill. The color of the slide bars indicate the status as follows:

Blue Installation in progress.

Green The installation has completed successfully.

Red The installation has failed.

In addition to the slide bars, you can view status messages for each of the machines in the list box in the bottom half of the Install Progress dialog. Click on the diamond to the left of each slide bar to display in the list box area the messages associated with that installation activity.

After the installation is completed all of the status bars are filled. In this example all installation were completed without error and all the slide bars have turned green as shown in Figure 133 on page 164.

If errors occur during the installation activity you can select the View Logs from the bottom of the Installation Progress dialog to look at detailed information about the failure. For more information on viewing and and interpreting the logs refer to Chapter 7, “Tivoli Software Installation Service Logs” on page 167.

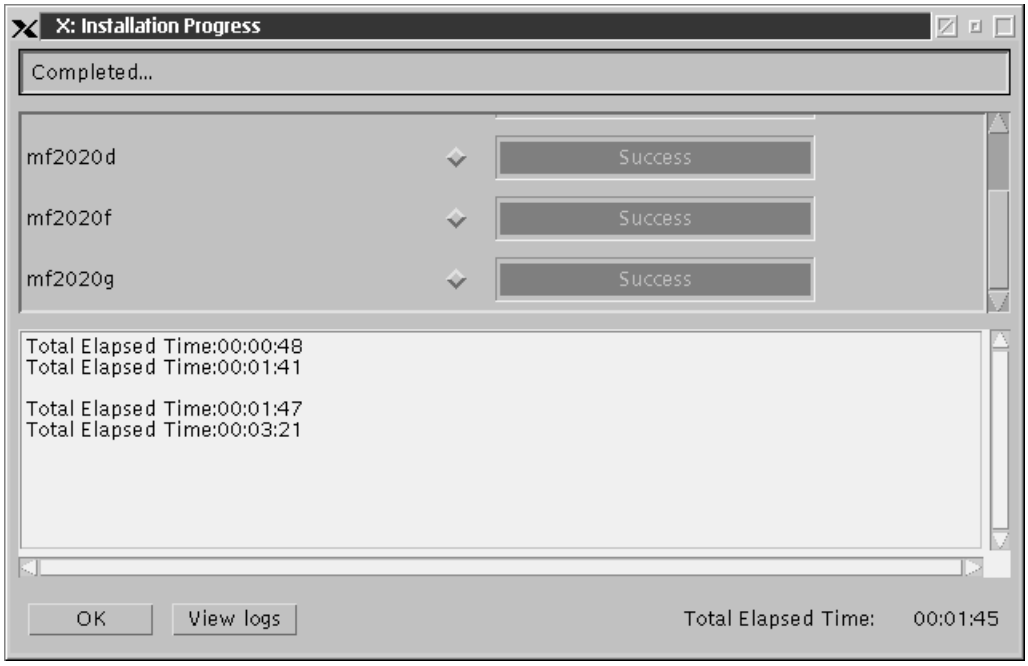

Figure 133. Install Progress Dialog with Installation Complete

14. Now that Tivoli Software Installation Service has completed the pushing of the selected products to the machine and you have reviewed the information about the installation activity as presented on Installation Progress dialog, you can select **OK**. This returns you to the TME 10 Software Installation Service - Install dialog shown in Figure 134 on page 165.

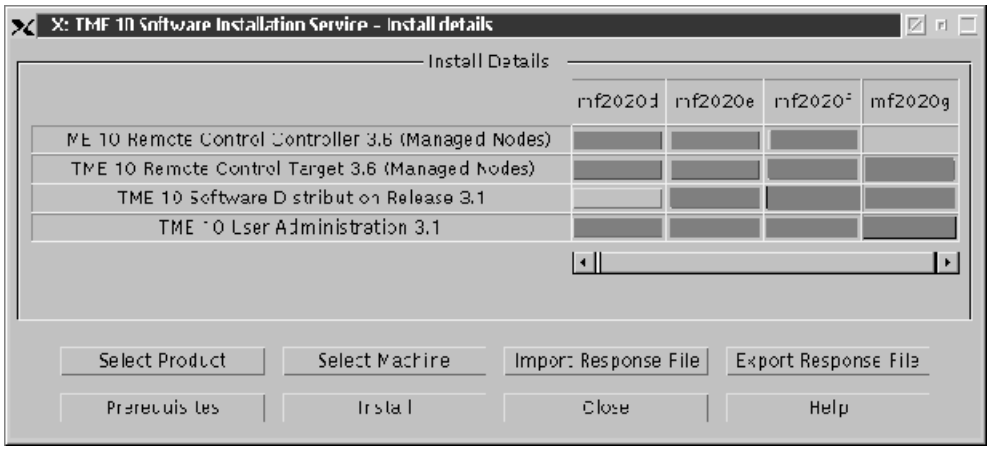

Figure 134. Install Details Dialog Showing Products Installed on Machines

All of the cells in the matrix for the products and machines that had directed Tivoli Software Installation Service to install are now green, indicating that the products are installed on these machines. These cells remain green whenever you view them in the future indicating that that these products have been installed on these machines. This gives you an inventory of the products installed in your Tivoli Management Region. To learn more more about using Tivoli Software Installation Service for inventory refer to Chapter 8, “Tracking Inventory when Using Tivoli Software Installation Service” on page 193

This successfully completes this example for installing the products on to the machines listed in Table 5 on page 149 at the beginning of this section. If there are other Tivoli products that you want to install you can repeat the steps outlined in this section to select those products and machines that you want Tivoli Software Installation Service to install the products upon. You can repeat this cycle as many times as needed to complete your installation activity.

15. To end the installation session select **Close** on the TME 10 Software Installation Service - Install details dialog shown in Figure 134. You are returned to the TME 10 Software Installation Service dialog shown in Figure 117 on page 150. From the TME 10Software Installation Service dialog you can select **Quit** to terminate the Tivoli Software Installation Service session.

Chapter 7. Tivoli Software Installation Service Logs

This chapter provides a detailed overview of the logs generated by Tivoli Software Installation Service. The information in this chapter is useful in assisting you to learn and understand how and where to find information generated in the Tivoli Software Installation Service logs.

This chapter does not describe the detailed content of the logs used in examples because the content of the logs vary according to the activity being reported on.

In this chapter, we display dialog boxes and log information produced by Tivoli Software Installation Service relating to the installation of the Tivoli Endpoint software on a number of nodes. The log files shown reflect the actual results of the attempted installation of endpoint software.

7.1 What Are the Tivoli Software Installation Service Logs?

The logs created by Tivoli Software Installation Service can be divided into two categories:

- Tivoli Software Installation Service activity logs
- Tivoli Software Installation Service system logs

The examples later in this chapter show that this division is logical. We have chosen to use this distinction to show that different types of log information are recorded by Tivoli Software Installation Service. Both types of logs are written to the same physical log directory during one Tivoli Software Installation Service session.

The Tivoli Software Installation Service activity logs are generated for each activity that Tivoli Software Installation Service performs. For example, when installing Tivoli products using Tivoli Software Installation Service, logs are created containing detailed information on the progress of the installation on each machine. If the installation of a Tivoli product were to fail, the logs can be referenced and detailed descriptions of the errors viewed. The error messages in the logs are helpful when used in determining the cause of the errors.

Some other examples of Tivoli Software Installation Service activity logs are:

- Installation of Tivoli products
- Importing Tivoli products into the Install Repository
- Importing / Exporting response files

- Exporting Response Files
- Creating Endpoints

Detailed information on viewing Tivoli Software Installation Service activity logs is covered in Section 7.3, “Viewing Tivoli Software Installation Service Activity Logs” on page 173.

The Tivoli Software Installation Service system logs contain information on the state of the Tivoli Software Installation Service software itself. These logs get created each time Tivoli Software Installation Service is started. Tivoli Software Installation Service updates them with information about any problems that occur during the session. For example, if Tivoli Software Installation Service can not load the Install Repository, the system logs can be referenced to view information on the error that did not allow for the loading of the Install Repository.

Examples of the information that can be found in the system logs are:

- Startup of the Tivoli Software Installation Service product
- Loading of the Install Repository
- Loading of the Gateway list
- Synchronizing Tivoli Software Installation Service with the Tivoli Management Region

Detailed information on how to view Tivoli Software Installation Service system logs is covered in Section 7.4, “Viewing Tivoli Software Installation Service System Logs” on page 181.

7.2 Where to Find Logs

Tivoli Software Installation Service logs are HTML files located on the machine running the Tivoli Software Installation Service software. The logs can be viewed by opening the HTML files with a browser. Tivoli Software Installation Service provides a built-in browser for viewing logs from within the Tivoli Software Installation Service graphical user interface, but any browser can be used for looking at the logs.

7.2.1 Location of Physical Log Files

The physical HTML log files can be found in a subdirectory structure under the /log subdirectory of the install repository directory configured during the installation of Tivoli Software Installation Service.

The dialog box displayed in Figure 135 on page 169 displays a directory listing of the /ir/log directory on the machine where Tivoli Software Installation Service is installed. In this example, the Tivoli Software Installation Service install repository is located in the /ir directory and Tivoli Software Installation Service keeps all the logs in the /log subdirectory.

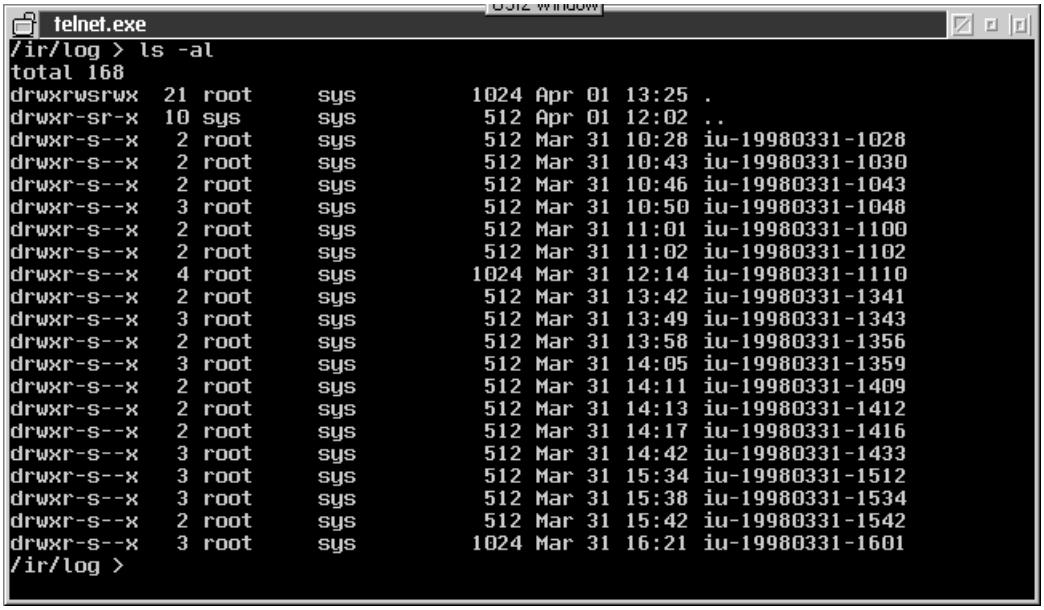

Figure 135. Location of Tivoli Software Installation Service Log Files

Each directory seen in the /log subdirectory represents a different Tivoli Software Installation Service session. All activities performed during the different Tivoli Software Installation Service sessions are recorded in HTML log files in these subdirectories. The date and time seen in the directory names are the actual dates and times when the Tivoli Software Installation Service sessions were started.

The dialog box displayed in Figure 136 on page 170 displays a list of files found in the /iu-19980331-1433 subdirectory seen fifth from the bottom of the directories listed in Figure 135.

The /iu-19980331-1433 subdirectory contains all the HTML log files that make up the Tivoli Software Installation Service logs for the Tivoli Software Installation Service session started on 1998/03/31 (March 31, 1998) at 14:33.

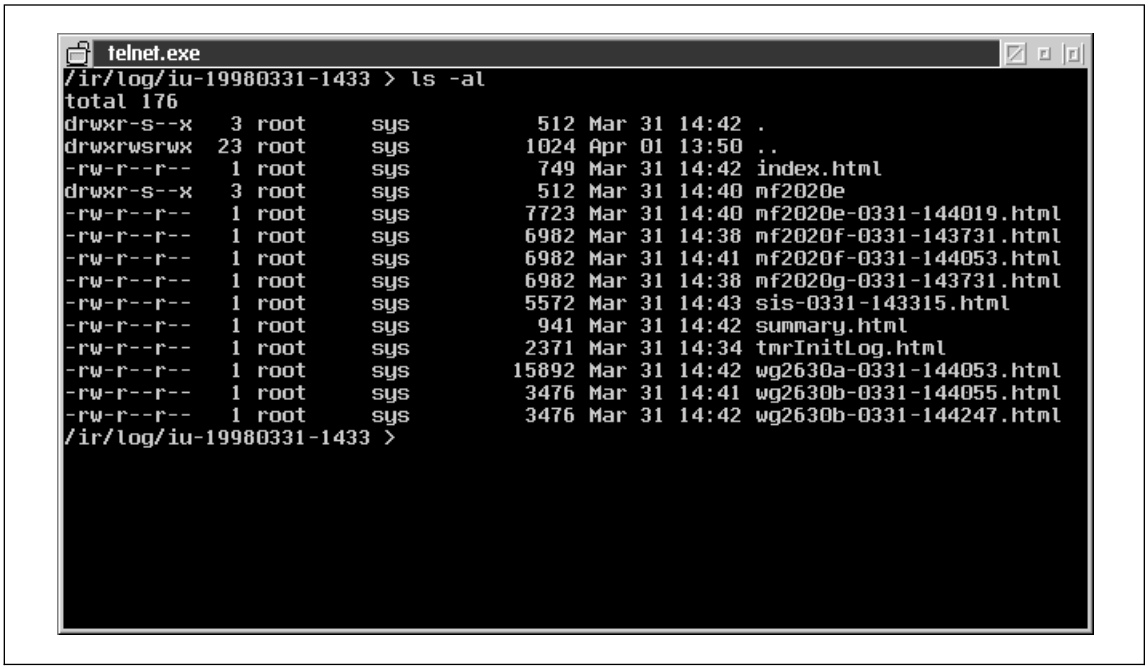

Figure 136. iu-19980331-1433 Subdirectory Listing

The dialog box shown in Figure 136 shows a number of HTML files, some of which are as follows:

tmrInitLog.html
: This log is the system log for the duration of the session. All system activities and system errors are recorded in this log.

index.html
: This is an index listing of the activity logs produced by Tivoli Software Installation Service during the current Tivoli Software Installation Service session.

summary.html
: This is a summary of the results of all the activities performed by Tivoli Software Installation Service during the Tivoli Software Installation Service session.

There are a number of other HTML files in the /iu-19980331-1433 subdirectory that contain the actual detailed data of the logs created during the Tivoli Software Installation Service session.

Each Tivoli Software Installation Service session started has a directory similar to the /iu-19980331-1433 directory shown in Figure 136. Each set of logs has an index.html file and a summary.html file. When opened with a browser, these act as a front end into the details of the logs generated during the Tivoli Software Installation Service session.

7.2.2 Finding Logs Using the Tivoli Software Installation Service GUI

This section demonstrates how to access the log files using the browser supplied by the Tivoli Software Installation Service graphical user interface. You can use your favorite browser to view the Tivoli Software Installation Service logs if you wish because the log files are normal HTML files.

To start the Tivoli Software Installation Service browser, you need to start the Tivoli Software Installation Service graphical user interface by following the instructions described in Section 5.3.1, “Starting the Graphical User Interface” on page 59.

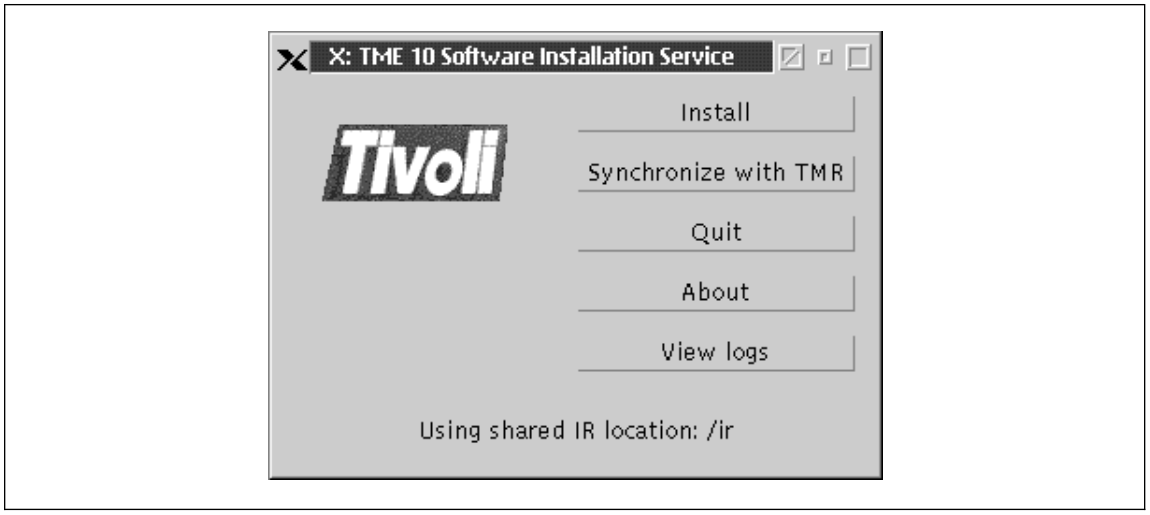

Figure 137. Tivoli Software Installation Service Menu

From the TME 10 Tivoli Software Installation Service dialog box shown in Figure 137, select the **View Logs** option. The Master Index File dialog box shown in Figure 138 on page 172 is displayed.

Figure 138. Master Index File

The Master Index File dialog box shown in Figure 138 shows two indexes:

- Jump to Log Session Index
- Success/Fail Summary Index

The **Jump to Log Session Index** option displays an index listing of all the logs that are found in the Tivoli Software Installation Service log directory. For example, you can list all of the logs shown in Figure 135 on page 169 using this option.

The **Success/Fail Summary Index** option displays a summary of the results of activities performed by Tivoli Software Installation Service during the current session. The summary log only gets created at the end of some installation activity for the current session. If you try to view the contents of the Success/Fail Summary before you have attempted any install activity in the current session this summary does not contain any information and there is nothing for you to view.

7.3 Viewing Tivoli Software Installation Service Activity Logs

This section describes the steps you need to follow to view the detailed log information in the activity logs produced by Tivoli Software Installation Service. To use the log browser provided by Tivoli Software Installation Service you need to first start Tivoli Software Installation Service as described in Section 7.2.2, “Finding Logs Using the Tivoli Software Installation Service GUI” on page 171. Then you need to select the **Jump to Log Session Index** option shown in Figure 138 on page 172. The Master Index File dialog box shown in Figure 139 is displayed.

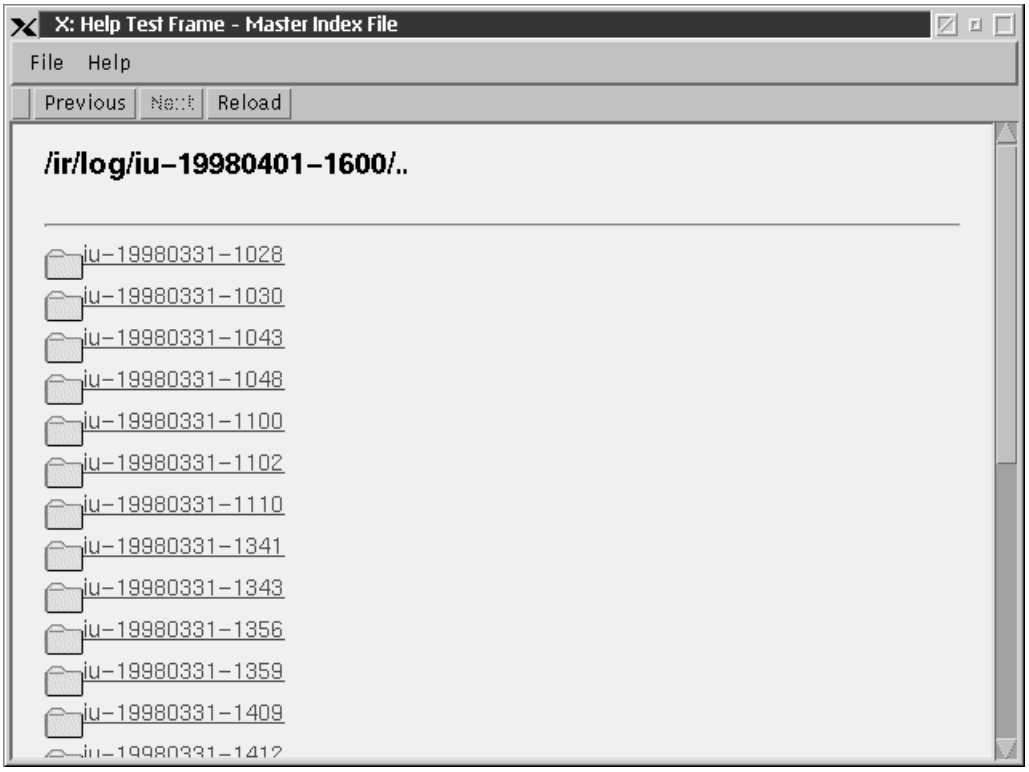

Figure 139. Master File Index File

The Master Index File dialog box shown in Figure 139 displays a list of all the directories in the Tivoli Software Installation Service log directory that contain log information. A new directory is created each time a new Tivoli Software Installation Service session is started. The graphical view of the log sessions shown in Figure 139 is the log directory list shown in Figure 135 on page 169. The view shown in Figure 139 is at a later time than the view in

Figure 135 on page 169. This results in more logs being listed in Figure 139 than in the earlier view.

This example shows you how to navigate your way around the logs, find a particular log, and display the details of the log. The log details displayed are from a log created after the installation of Tivoli Endpoint software on a number of different nodes. The date of the installation was 1998/03/31 and the time of the installation was 14:33.

The list of logs in the Master Index File dialog box shown in Figure 139 on page 173 is displayed in alphabetic / numeric order. The log for this example does not appear in the list. To view additional logs, you need to scroll down the list of logs by using the scroll bar on the right side of the dialog box.

Figure 140 displays the same dialog box after the list of logs has been scrolled down to the bottom.

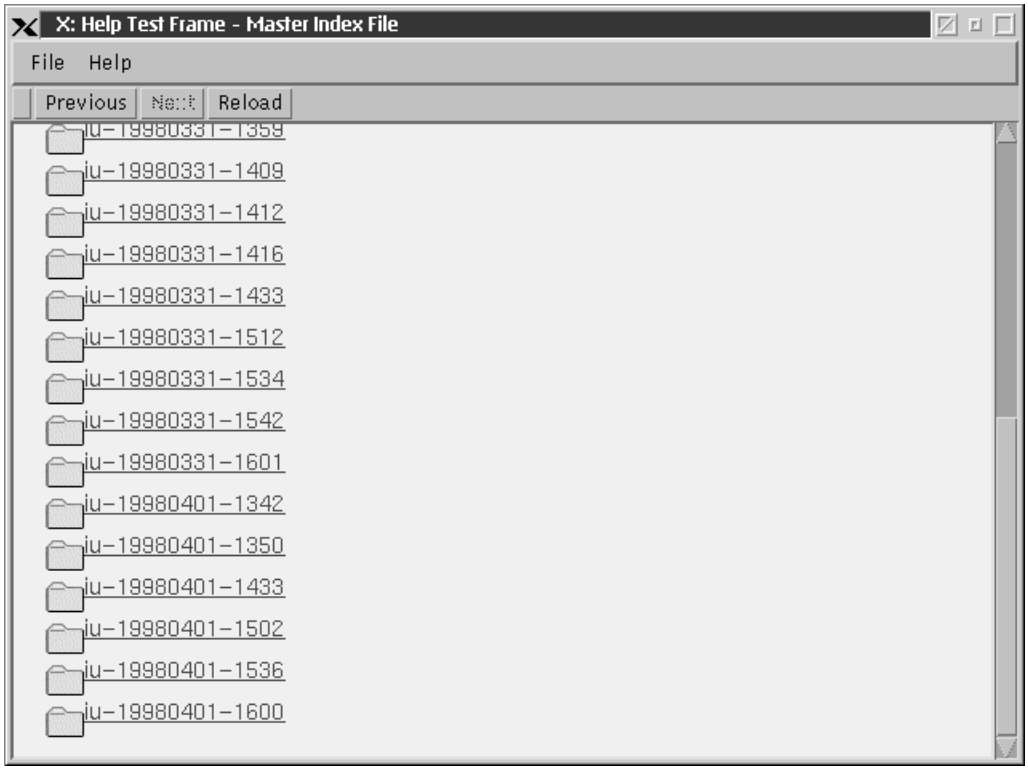

Figure 140. Master File Index File

By following the dates and the times of the logs in the list, the log created on 1998/03/31 at 14:33 can now be seen in the top half of the list. Select the **iu-19980331-1433** log to view the contents of this log. The Directory Listing dialog box shown in Figure 141 on page 175 is displayed.

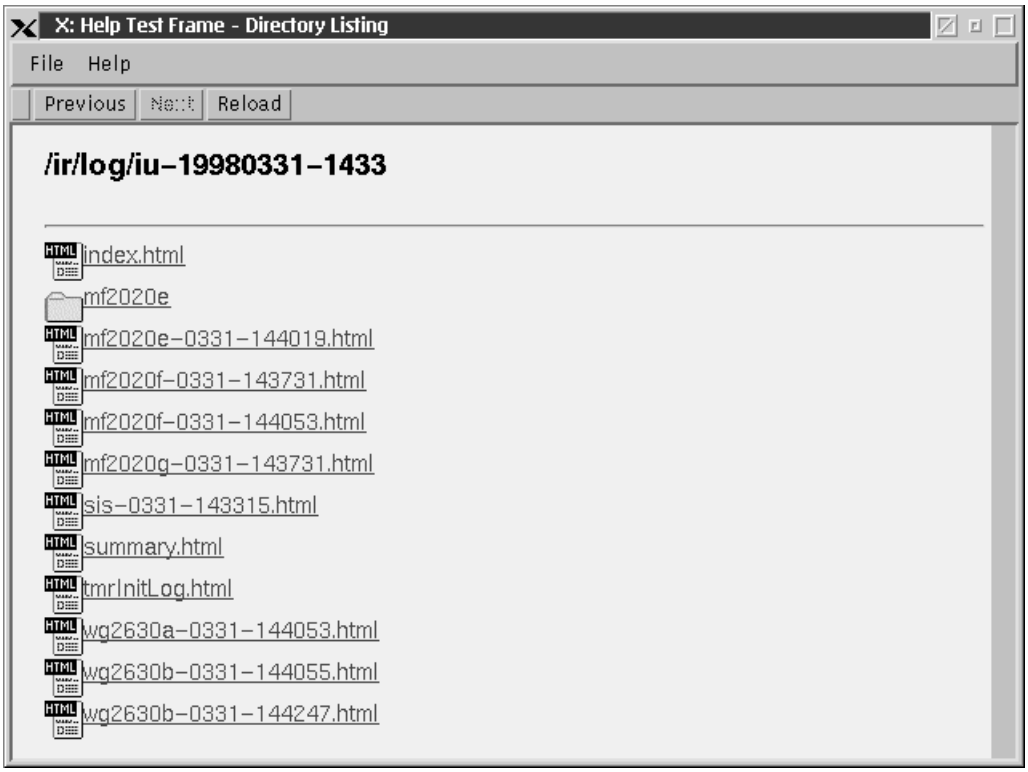

Figure 141. Directory Listing

The Directory Listing dialog box shown in Figure 141 displays a list of the all the log files found in the **iu-19980331-1433** directory. The files listed in the Directory Listing dialog box shown in Figure 141 correspond to the physical files listed in the dialog box shown in Figure 136 on page 170.

The files types in this list are:

index.html This log file contains an index listing of the all the activity logs created during the session.

sis-0331-143315.html
This log file holds information on all Tivoli Software Installation Service system activities from the time that

the Tivoli Software Installation Service session was started.

summary.html The summary log file keeps summarized information of the end results of all Tivoli Software Installation Service activities performed during the Tivoli Software Installation Service session.

tmrInitLog.html This log keeps information on the system when Tivoli Software Installation Service was initialized. The log contains details of the state of the Install Repository, Gateways and Profile Managers, and so on.

<node>-0331-<time>.html
These files are the log files for the individual nodes that were targets for the installation of Tivoli software during the current Tivoli Software Installation Service session.

At this point you can select to view any of the log files displayed in the list, or you can select the `index.html` file to view an index of the activity log files that were created during this session.

In this example we will view the index of the activity logs available by selecting the **index.html** icon at the top of the list. The Directory Listing dialog box shown in Figure 142 on page 177 is displayed.

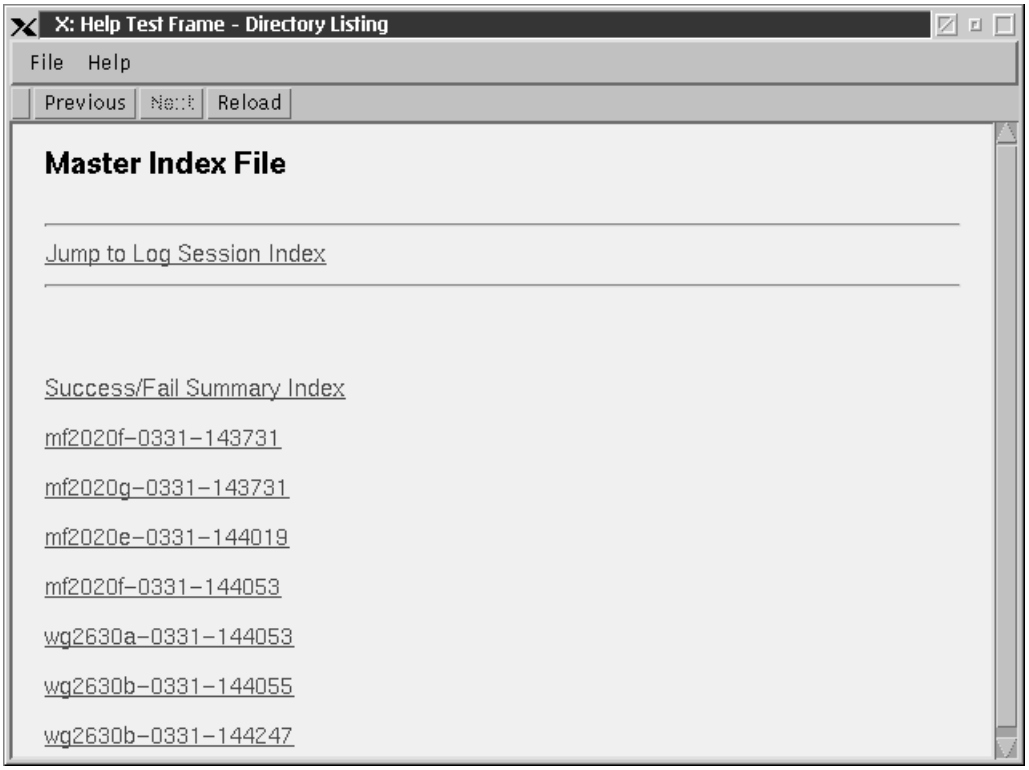

Figure 142. Directory Listing

From the Directory Listing dialog box shown in Figure 142, the details of the installation results for any installation activity can be viewed by selecting the HTML file. For example, if you want to view the log file for one of the installation activities on node mf2020f, you can select **mf2020f-0331-143731** from the list of logs in the Directory Listing dialog box shown in Figure 142. A dialog box showing detailed information about the installation of the Endpoint software on node mf2020f would be displayed.

You may find it more useful to look first at the summary of the entire installation since this gives information on the results of the installation for all the machines. From the summary you can then go to individual installation activities if you need to. To view the summary, select the **Success/Fail Summary Index** option from the Directory Listing dialog box shown in Figure 142. The Master Index File dialog box shown in Figure 143 on page 178 is displayed.

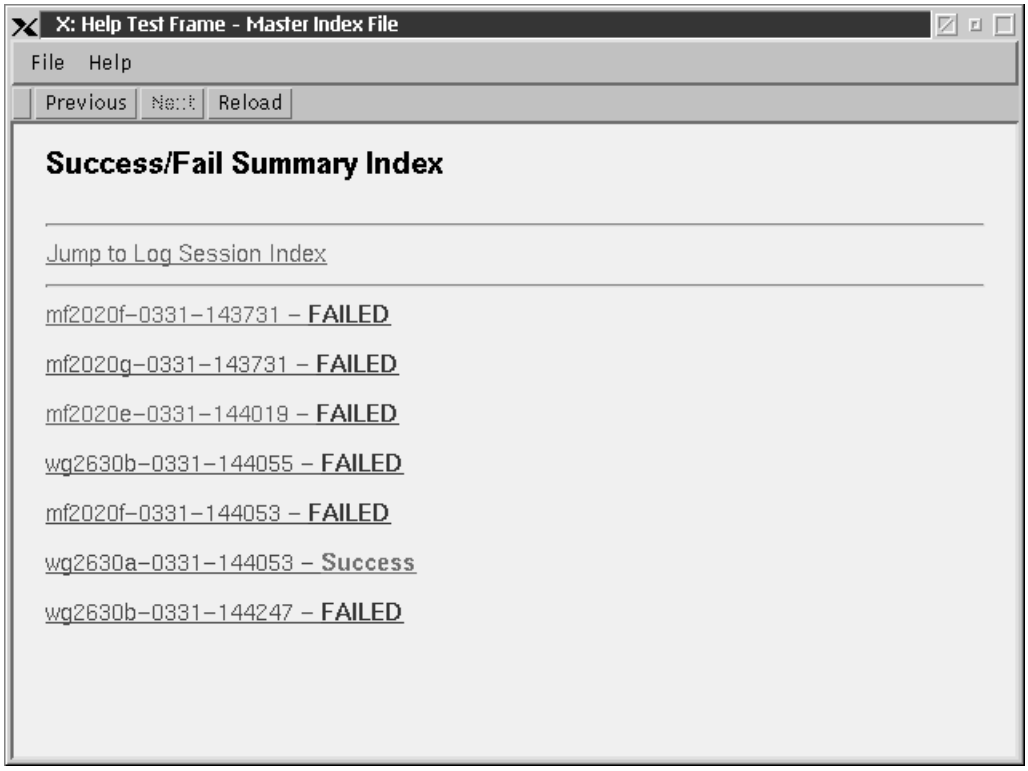

Figure 143. Master Index File

The Master Index File dialog box shown in Figure 143 shows the results of the install procedure on each of the target nodes. A log file for each product on each machine is listed along with a message indicating whether the installation activity was successful or failed.

Any of these log files can be selected to view detailed information on the installation. In this example, to look at the results of one of the unsuccessful installations on node mf2020f select the **mf2020f-0331-143731-FAILED** option. The Master Index File dialog box shown in Figure 144 on page 179 is displayed.

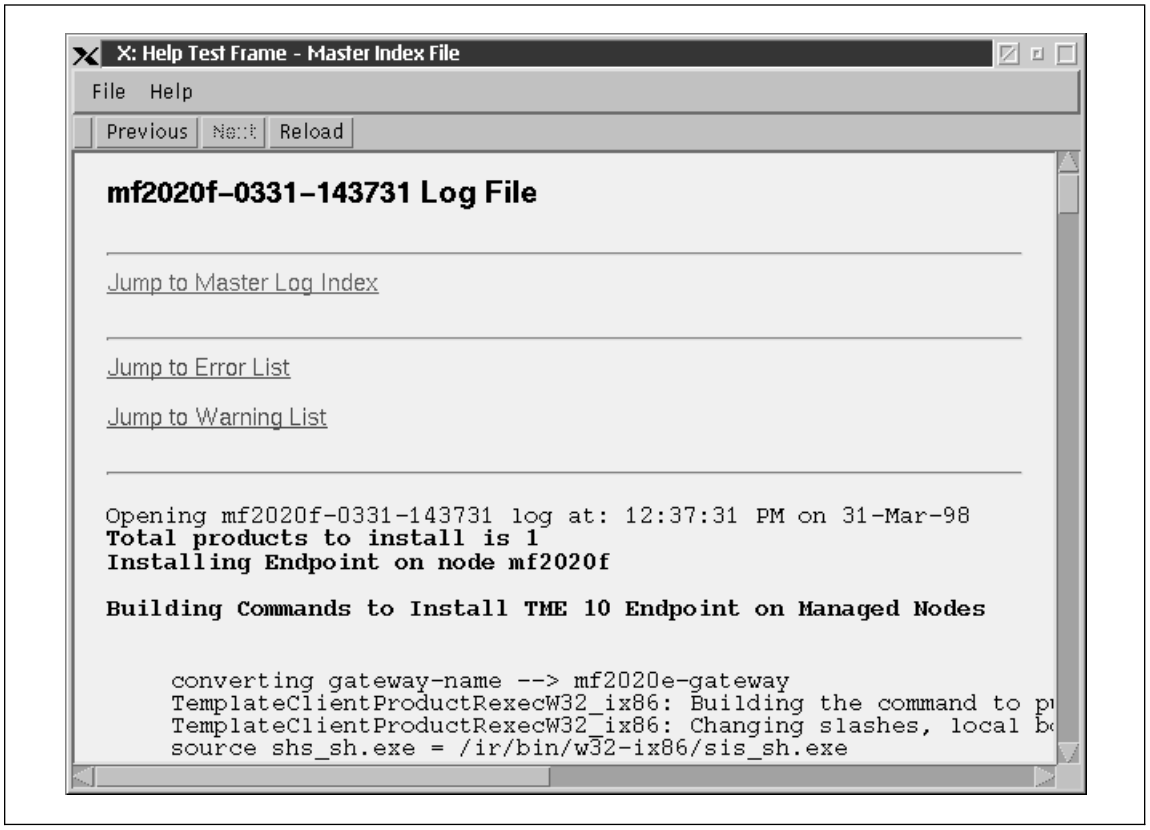

Figure 144. Master Index File

The options available on this log are as follows:

Jump to Master Log Index
: This option returns you to the Master Index File dialog box shown in Figure 139 on page 173. At any time when this option is displayed you can use it when you have finished viewing information in the the current log file.

Jump to Error List
: This option is a shortcut to the list of errors in the log.

Jump to Warning List
: This option is a shortcut to the list of warning messages in the log.

The Master index file dialog box shown in Figure 144 shows detailed information on the progress that took place during the install activity performed

by Tivoli Software Installation Service. To view the detailed progress information, use the scroll bar on the right side of the dialog box.

An alternative is to go directly to the error list where details about errors can be viewed by selecting **Jump to Error List** at the top of the Log File. The Master Index File dialog box shown in Figure 145 is displayed.

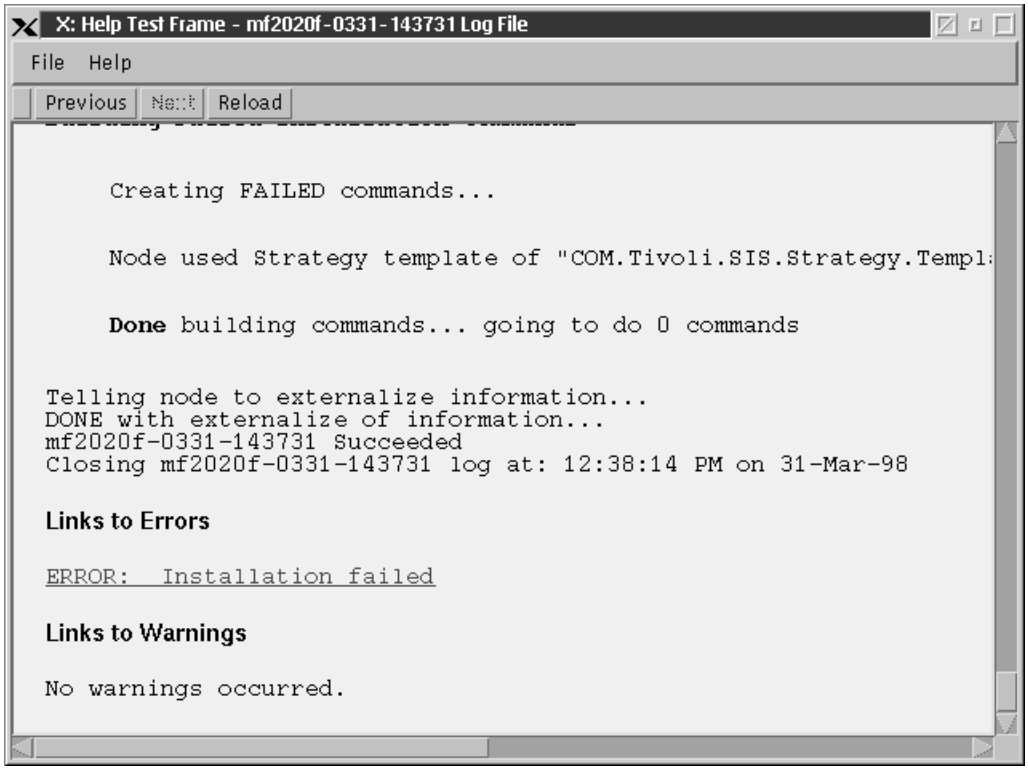

Figure 145. Master Index File

You can now view detailed information on the cause of the error. Once again, the scroll bar can be used to move up or down the log to view more information on the error that occurred.

When you have completed viewing the information in the log, the scroll bar can be used to return to the top of the log from where you can select to return to the Master Index File dialog box shown in Figure 139 on page 173 by selecting the **Jump to Log Session Index** option.

Note

The steps used to display the logs related to the installation of the Endpoint software can be used to view any activity logs produced by Tivoli Software Installation Service. The detail log information vary depending on what install activity is being reported in the Tivoli Software Installation Service log.

7.4 Viewing Tivoli Software Installation Service System Logs

This section describes the steps you need to follow to view the detailed log information in the system logs produced by Tivoli Software Installation Service.

Since the system log files are in the same directory as the activity logs you need to follow the same procedures to open the logs as when viewing the activity logs in Section 7.3, “Viewing Tivoli Software Installation Service Activity Logs” on page 173. Start the Tivoli Software Installation Service log browser as described in Section 7.2.2, “Finding Logs Using the Tivoli Software Installation Service GUI” on page 171. When the browser is started select the **Jump to Log Session Index** option shown in Figure 138 on page 172. The Master Index File dialog box shown in Figure 139 on page 173 is displayed.

This example looks at the system log files produced by the same Tivoli Software Installation Service session as the activity logs files examined in Section 7.3, “Viewing Tivoli Software Installation Service Activity Logs” on page 173. To view the system log files created during the installation of the Tivoli Endpoint software, select the **iu-19980331-1433** folder from the Master Index File dialog box shown in Figure 139 on page 173.

The Directory Listing dialog box shown in Figure 146 on page 182 is displayed. This is the same dialog box shown in Figure 140 on page 174 and Figure 141 on page 175.

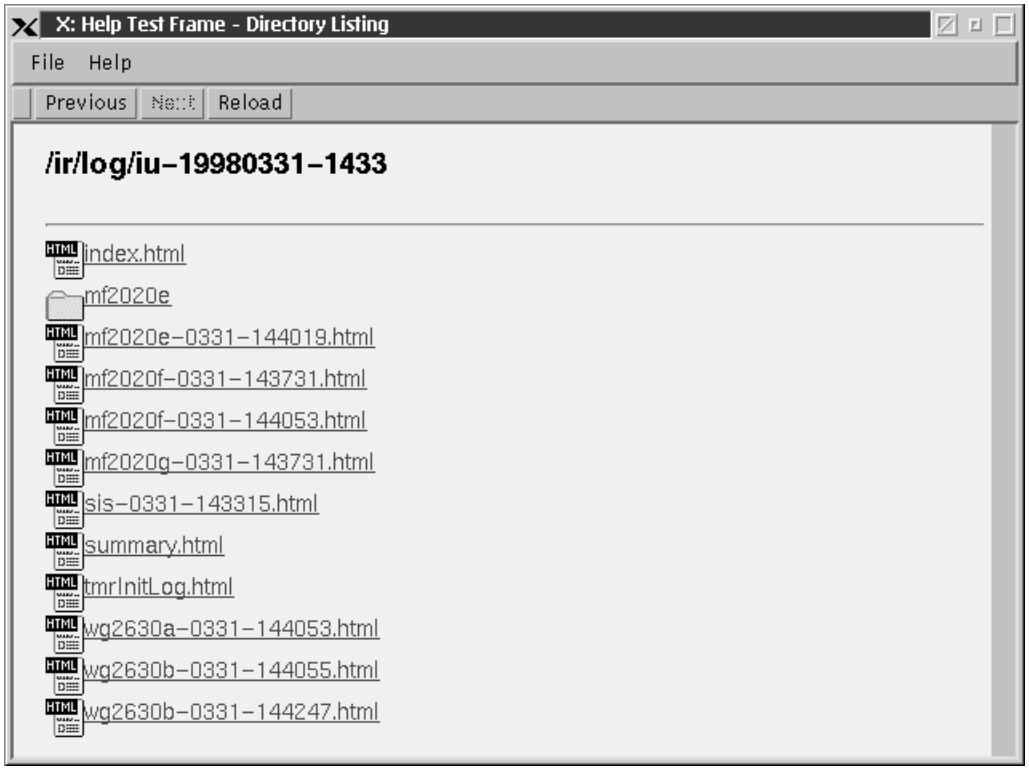

Figure 146. Directory Listing

The Directory Listing dialog box shown in Figure 146 is the same dialog box as that shown in Figure 140 on page 174 and Figure 141 on page 175. When viewing active logs the `index.html` item was used.

The system log files displayed in the Directory Listing dialog box are:

sis-0331-143315.html
This log file holds information on all Tivoli Software Installation Service system activities from the time that the Tivoli Software Installation Service session was started.

tmrInitLog.html
This log keeps information on the system when Tivoli Software Installation Service was initialized. The log holds details of the state of the Install Repository, Gateways and profile Mangers, and so on.

To view details of the system log file created at the start of the Tivoli Software Installation Service session, select the **tmrInitLog.html** item. The Log File dialog box shown in Figure 147 on page 183 is displayed.

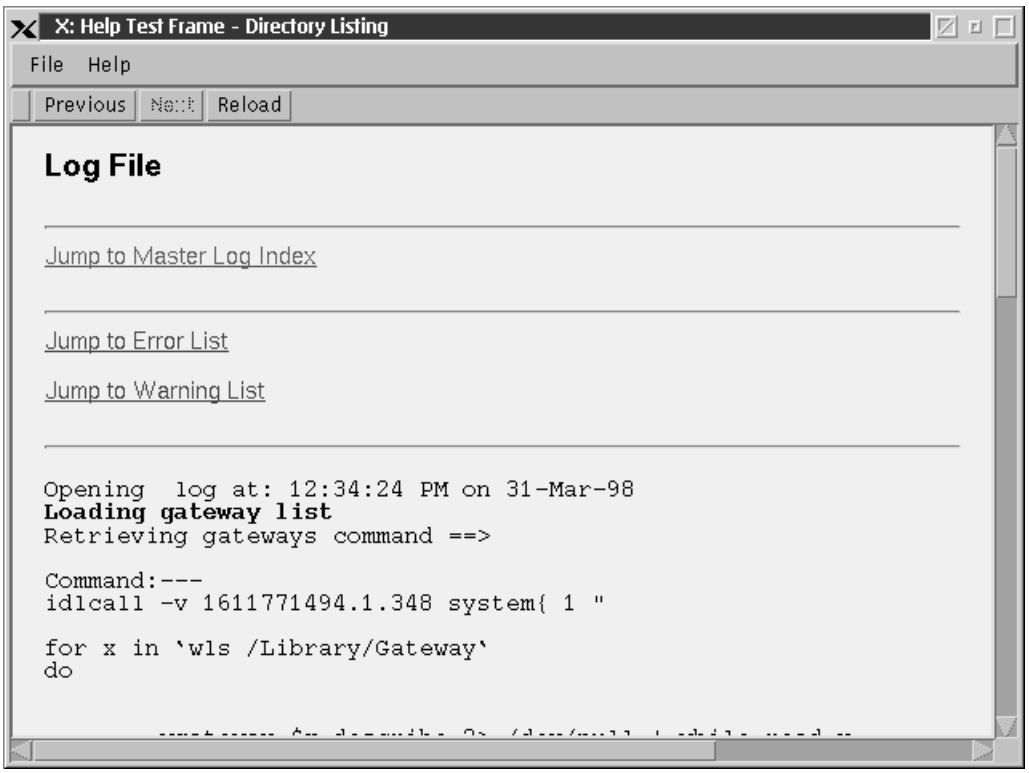

Figure 147. Log File

The options available on the Log File dialog are:

Jump to Master Log Index
This option returns you to the Master Index File dialog box shown in Figure 139 on page 173.

Jump to Error List This option is a shortcut to the list of errors in the log.

Jump to Warning List This option is a shortcut to the list of warning messages in the log.

The scroll bars can also be used to move down the log to browse the detailed information that was recorded.

The details displayed in the Log File dialog shown in Figure 147 show information about the tasks that Tivoli Software Installation Service performed when Tivoli Software Installation Service was initially launched. Looking at the initial information recorded at the top of the Log File you see that the first task that Tivoli Software Installation Service performed was to load the gateway list. If you were to use the scroll bar and move down the log, you notice that there is log information describing the other tasks, such as loading the Gateway and Policy Region, that Tivoli Software Installation Service performed when launched.

To view any errors that may have occurred, select **Jump to Error List** at the top of the Log File shown in Figure 147 on page 183. The error information area in the Log File, shown in Figure 148, is displayed.

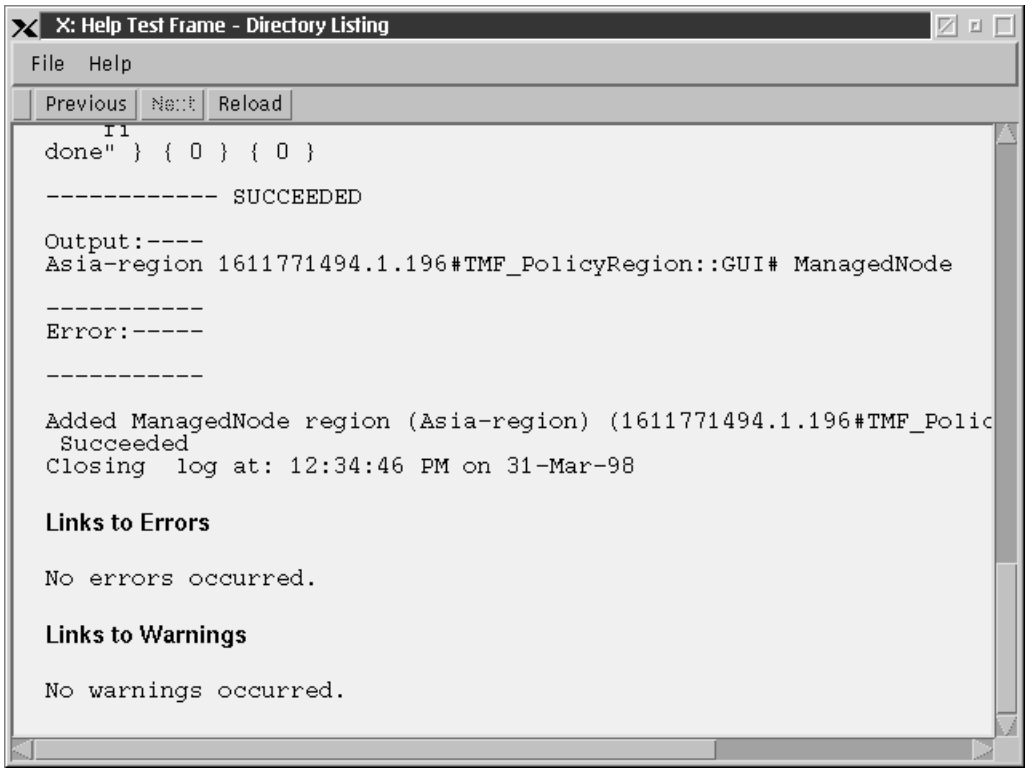

Figure 148. Log File No Errors or Warnings

In this example, there were no errors that occurred during the Tivoli Software Installation Service initialization phase as seen in the Directory Listing dialog

box shown in Figure 148. If there were errors during the initialization phase, they would be listed in this section of the log.

Note

If Tivoli Software Installation Service does not start up correctly or if there are errors when Tivoli Software Installation Service is loading the Install Repository, Gateway or Policy Region list during initialization, the information about these errors is found in this section of the log.

When you have completed viewing the information in the log, you can select the **Previous** option at the top of the dialog box to return to the Directory Listing dialog box shown in Figure 146 on page 182.

The other system log file that we have not yet viewed is the sis-0331-143315.html log file. This log file keeps information on the system activities performed by Tivoli Software Installation Service during the entire session.

To view the contents of this system log, select **sis-0331-143315.html** from the Directory Listing dialog box shown in Figure 146 on page 182. The Log File dialog box shown in Figure 149 on page 186 is displayed.

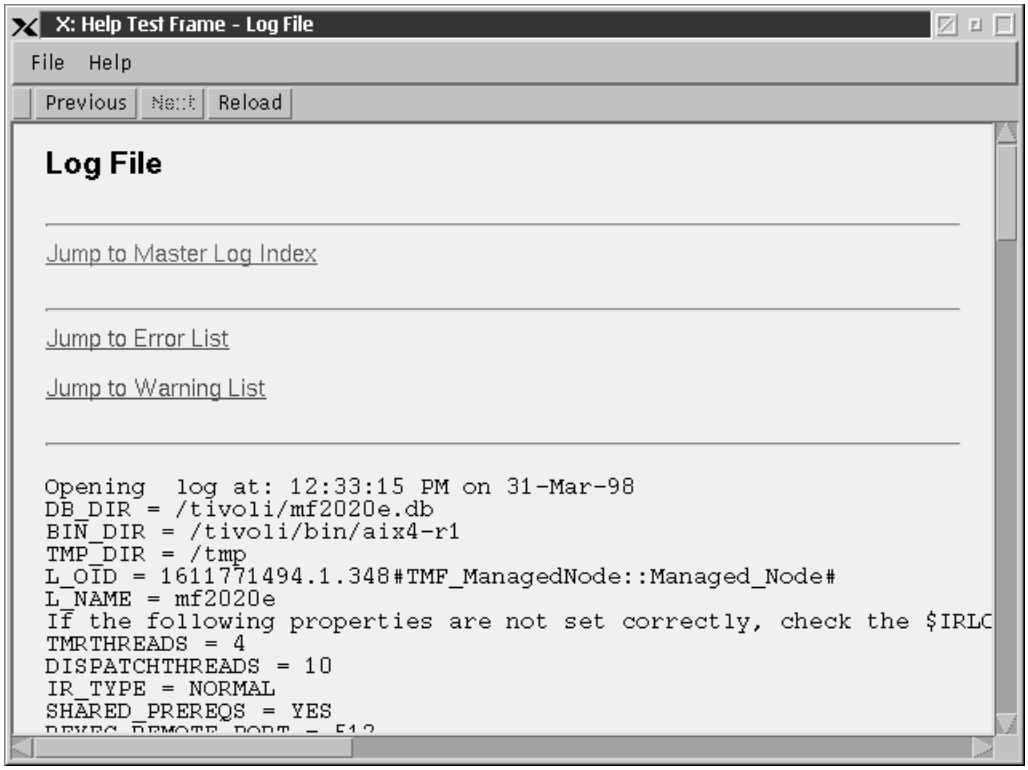

Figure 149. Log File

The options available on this log are:

Jump to Master Log Index
This option returns you to the Master Index File dialog box shown in Figure 139 on page 173.

Jump to Error List This option is a shortcut to the list of errors in the log.

Jump to Warning List This option is a shortcut to the list of warning messages in the log.

The scroll bars can also be used to move down the log to browse the detailed information in this log file.

Some examples of the information that can be found in this log are:

- Status of the TMR server at Tivoli Software Installation Service startup time

- Information on the different software revisions running on the nodes loaded from the policy regions
- Status of the Tivoli Software Installation Service Install Repository lock operation

The Log File dialog box shown in Figure 150 shows some information that can be found at the bottom of the `sis-0331-143315.html` log.

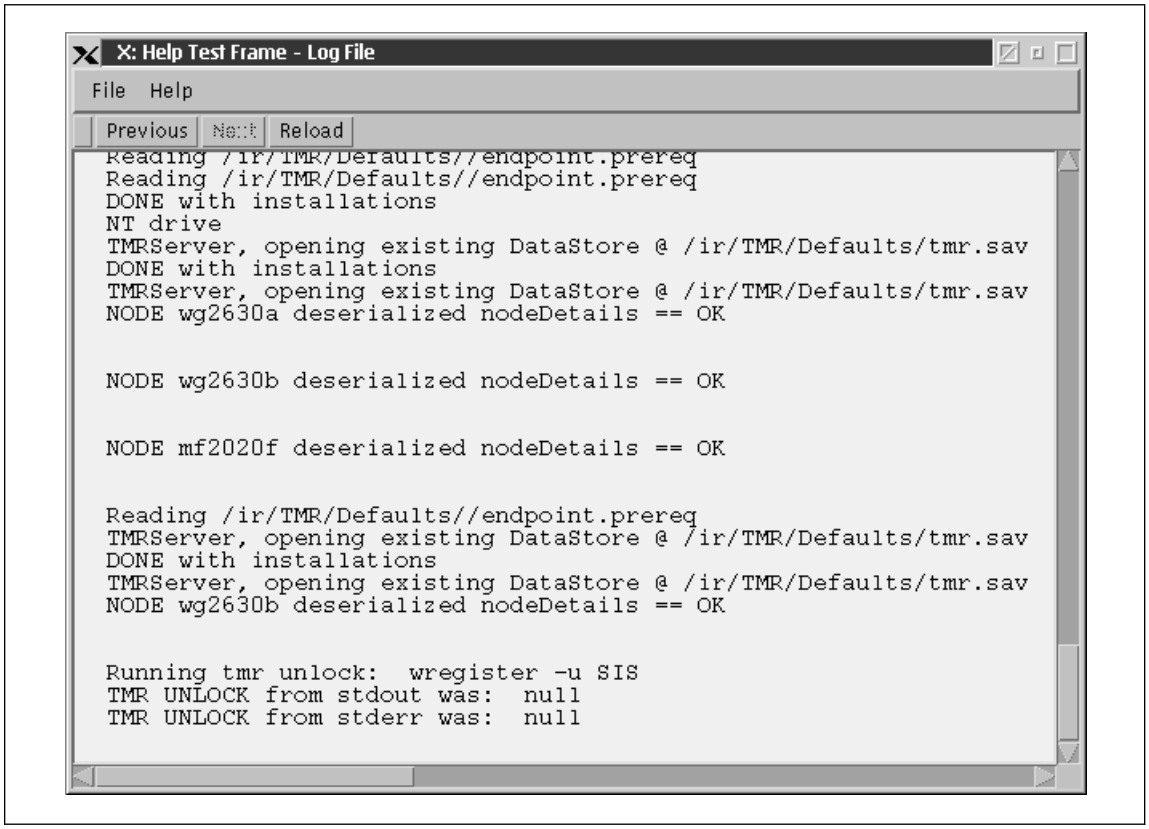

Figure 150. Log File

7.5 Difference between Shared and Non-Shared Install Repository Log Files

A shared repository is a Tivoli Software Installation Service Install Repository that is used by more than one machine running the Tivoli Software Installation Service software. The first machine installed with the Tivoli Software Installation Service software configures the path of the Install Repository. This repository is normally installed on a local disk of the machine where Tivoli Software Installation Service is installed. This machine's log files are found in

the Install Repository log directory as described in Section 7.2, “Where to Find Logs” on page 168.

When you install Tivoli Software Installation Service on other machines and configure them to use the shared repository these additional machines log files will be kept in the Install Repository on the machine where Tivoli Software Installation Service first built the Install Repository.

For example, an initial installation of Tivoli Software Installation Service is configured to have the Install Repository created in the /ir directory. The log files for this machine are found in the /ir/log directory.

A second machine has Tivoli Software Installation Service installed, and is configured to use the existing Install Repository created on the first machine. The log files for this second machine are found in the /ir/TMR/1611771494/log directory, as shown in Figure 151.

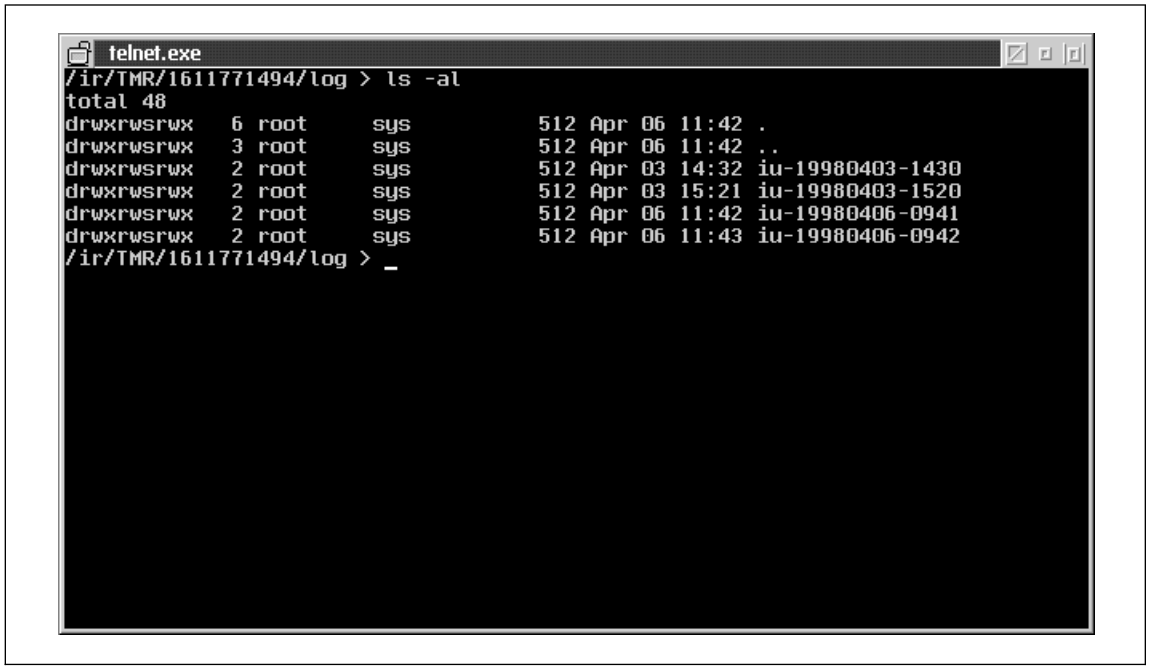

Figure 151. Log File

The directory structure for the additional machines can be described as follows:

/ir	This is the directory of the Install Repository as configured by the first installation of Tivoli Software Installation Service in the region.
/ir/TMR	This is a subdirectory that holds information on different machines running the Tivoli Software Installation Service product in the same Tivoli region.
/ir/TMR/1611771494	For each additional machine running the Tivoli Software Installation Service product, a separate directory is created. The directory name is the same as the machines object identifier.
/ir/TMR/1611771494/log	This is the directory that holds all the logs.

The structure of the logs found in the /ir/TMR/1611771494/log subdirectory is the same as the structure found in the logs in the /ir/log directory created on the first machine that had the Tivoli Software Installation Service software installed as described in Section 7.1, “What Are the Tivoli Software Installation Service Logs?” on page 167.

When using the Tivoli Software Installation Service browser to view logs, Tivoli Software Installation Service opens the logs created by the machine where the logs are being viewed. For example, if you use the Tivoli Software Installation Service browser from the second machine to view logs, the logs found in the /ir/TMR/1611771494/log directory are displayed.

Note

When browsing logs using the Tivoli Software Installation Service browser, the links and shortcuts found in logs do not work if browsed from any machine other than the machine where they were created. To view the contents of Tivoli Software Installation Service logs created from other machines, you need to open the HTML log files individually to see their contents.

Also, the links found in the logs do not work if the log files are moved from one directory to another. To use the links created in log files the log files must exist in the directory structure where they were created.

7.6 Maintaining Tivoli Software Installation Service Log Files

There is no maintenance that needs to be carried out on the Tivoli Software Installation Service log files other than deleting or archiving the log files when they are no longer going to be used.

There is no fixed rule that dictates when the log files should be deleted or archived. The main purpose of the logs is to keep a record of what Tivoli Software Installation Service activities have taken place. This includes keeping logs of successful installations as well as unsuccessful installations of Tivoli products.

The logs reflecting the successful installations can be archived and used for reviewing historical information on when Tivoli products were installed on different machines.

The logs listing errors that occurred during the installation of Tivoli products can be used for debugging purposes. These logs highlight the cause of the errors and assist in solving installation problems. The error logs would no longer be required after the errors have been resolved so you may decide to delete these logs sooner than you would delete the logs reflecting successful installations.

Tivoli Software Installation Service log files, like any other cumulative log, continue to utilize more and more disk space. Every time you start Tivoli Software Installation Service or install products using Tivoli Software Installation Service new logs are created. Therefore, it is highly recommended that you establish a policy for maintaining and cleaning out logs.

One way of maintaining your logs is to have a job that you execute at a regular time interval that archives and/or removes logs from your SIS server. For example, you can run this job at the end of every month and process all logs that are older than one month. This ensures that your active Tivoli Software Installation Service log directory only contains information about Tivoli Software Installation Service activity for the last one to two months. You need to establish the correct balance between disk space required to hold Tivoli Software Installation Service logs and usefulness of the information contained in the logs.

The structure of the Tivoli Software Installation Service log directories is such that it allows logs to be deleted without too much difficulty. As described in Section 7.2.1, “Location of Physical Log Files” on page 168, Tivoli Software Installation Service creates a new log subdirectory every time that Tivoli Software Installation Service is activated. All the logs created during the Tivoli

Software Installation Service session are saved in this subdirectory. As time goes by, you will have a number of log subdirectories, each one containing the logs created during the different Tivoli Software Installation Service sessions.

You can delete Tivoli Software Installation Service logs manually by deleting the directories structure of the Tivoli Software Installation Service sessions logs you no longer want. When you have done this, the logs no longer appear in the logs index, as shown in Figure 139 on page 173 when you open the Tivoli Software Installation Service log browser.

Note

A good practice to follow is to always back up files before you delete them. That way, in case they need to be retrieved, you know where to find them.

Chapter 8. Tracking Inventory when Using Tivoli Software Installation Service

This chapter describes how an administrator can use Tivoli Software Installation Service to track and organize Tivoli product and machine information in a Tivoli Managed Environment.

8.1 Importance of Inventory

In a large Tivoli Management Region, it is important that an administrator be able to maintain an inventory of the machines and Tivoli products that have been installed. An inventory should provide information such as:

List of Tivoli nodes in the Tivoli Management Region

Machine platform type

List of stored Tivoli products with version information

List of stored patches for installed Tivoli products

If this information is accessible from a single location, it can help an administrator to plan mass installation activities, such as product roll-outs and upgrades, in an organized and efficient way. This information also helps an administrator to apply and maintain standard product and machine configurations across a Tivoli Management Region.

8.2 How to Track Inventory when Using Tivoli Software Installation Service

While Tivoli Software Installation Service does not have a formal inventory procedure, the Tivoli Software Installation Service graphical user interface can display useful information about the Tivoli Management Region. The examples in this section describe how to use the Tivoli Software Installation Service graphical user interface to gain information about installed Tivoli products and machines in a Tivoli Management Region.

8.2.1 Installed Products

Tivoli Software Installation Service stores all product images in the install repository. You can use the **Select Products** option from the TME 10 Software Installation Service - Install details dialog to retrieve this information. Figure 152 on page 194 shows the Available Products dialog. This dialog provides a quick inventory list of Tivoli products and patches with version information that are used in the Tivoli Management Region. You can highlight a product in the Available Products dialog and use the **Show interp types** option to see the operating systems the product supports. You can sort the

Available Products dialog by clicking on the `Product` or `Num Interps` column headings.

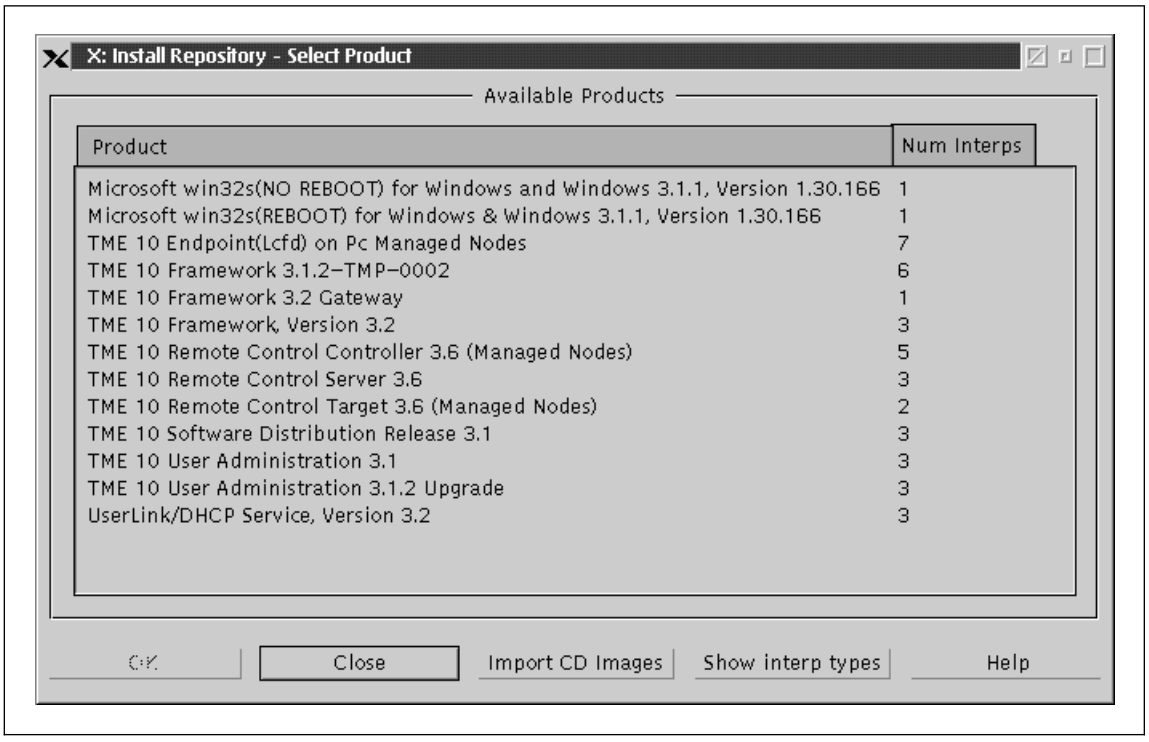

Figure 152. List of Products Stored in the Install Repository

8.2.2 Installed Machines

Tivoli Software Installation Service stores information in the Install Repository about the machines in the Tivoli Management Region. Through the synchronization with the TMR server Tivoli Software Installation Service keeps an updated list of the machines and Tivoli products installed on all the machines in the Tivoli Management Region.

You can use the **Select Machine** option from the TME 10 Software Installation Service - Install details dialog to display the Install Repository - Select Machine dialog, as shown in Figure 153 on page 195. The Install Repository - Select Machine dialog contains the following information about the machines in your Tivoli Management Region:

Machine hostname

Operating system type (Interp)

Number of Tivoli products installed

The type of Tivoli software installed

You can sort this display by Machine Name, Interp Type, # products installed, or Type by clicking on the appropriate column heading. This makes it easier for you to find the specific information you are looking for, such as all the machines running OS/2 in the region.

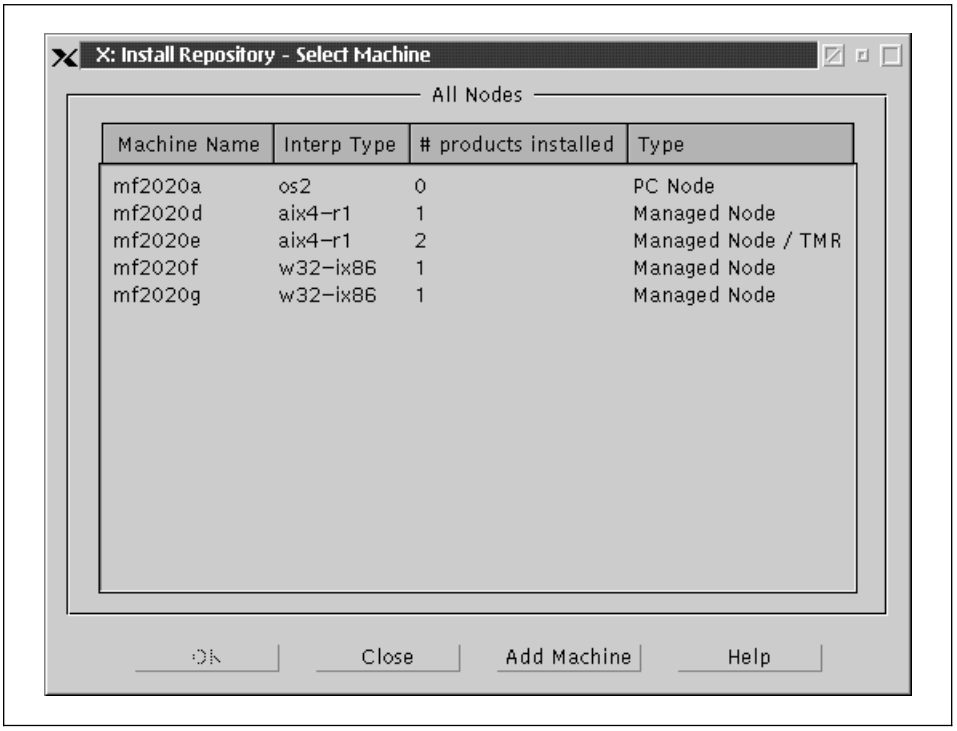

Figure 153. List of Machines in the TMR

8.2.3 Using the SIS Inventory to Plan Installations

The Tivoli Software Installation Service graphical user interface can be an effective tool in helping you plan for an installation. As an example, the following scenario describes the installation planning for the Tivoli Management Framework upgrade on Windows NT machines in a region.

The procedure used to gather relevant information is outlined in the following steps. Not all of the dialogs or selections are shown in this example. Detailed step by step directions for working with the dialogs described in this scenario can be found in Section 6.2.2, “Multiple Products and Machines” on page 148.

1. Start the Tivoli Software Installation Service graphical user interface and open the TME 10 Software Installation Service - Install Details dialog.
2. Use the **Select Machine** option to see a list of the machines in the Tivoli Management Region.
3. Click on the **Interp Type** column heading to sort the list of machines by operating system type. Figure 154 shows that there are four Windows NT machines (Interp type w32-ix86) in the Tivoli Management Region.

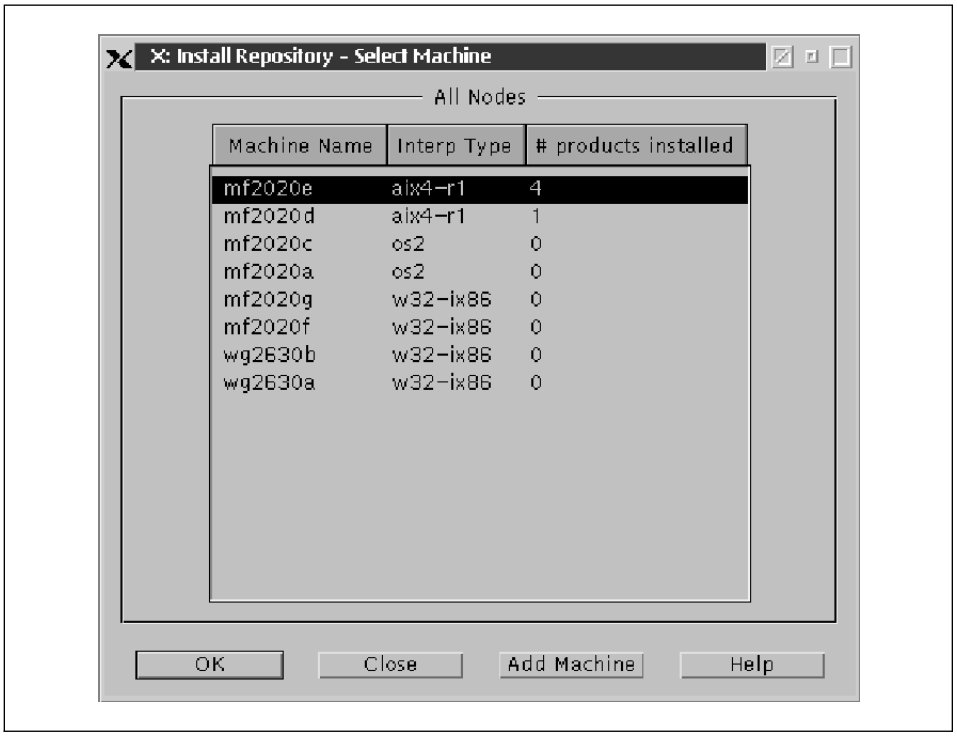

Figure 154. Machines Sorted by Interp Type

4. Highlight the Windows NT machines and select **OK** to load the machines into the TME 10 Software Installation Service - Install details dialog.
5. From the TME 10 Software Installation Service - Install details dialog, select the **Select Product** option to see the Available Products dialog.
6. Select the **Show interp types** option of the Available Products dialog to check that the Tivoli Management Framework upgrade product files for the Windows NT platform have been imported into the Install Repository. You may refer to Section 4.4, “Populating the Install Repository” on page 44 for more information on importing product files for different platforms.

You may need to use the scroll bar at the bottom right corner of the Available Interps dialog to scroll the display to the interps column for the operating system you are installing. Figure 155 on page 197 shows that the `TME 10 Framework 3.1.2-TMP-0002` upgrade product files for the `w32-ix86` (Windows NT) platform are installed in the Install Repository.

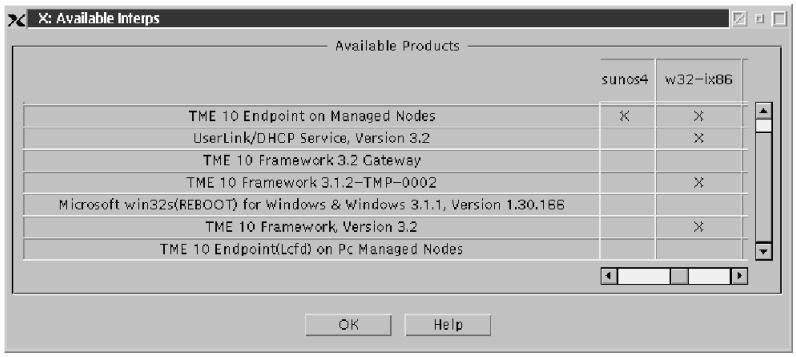

Figure 155. Available Interps for Tivoli Products

7. Select **OK** to exit the Available Interps dialog.
8. From the Available Products dialog, highlight the TME 10 Framework 3.1.2-TMP-0002 product and select **OK** to load the product in to the TME 10 Software Installation Service - Install details dialog, as shown in Figure 156.

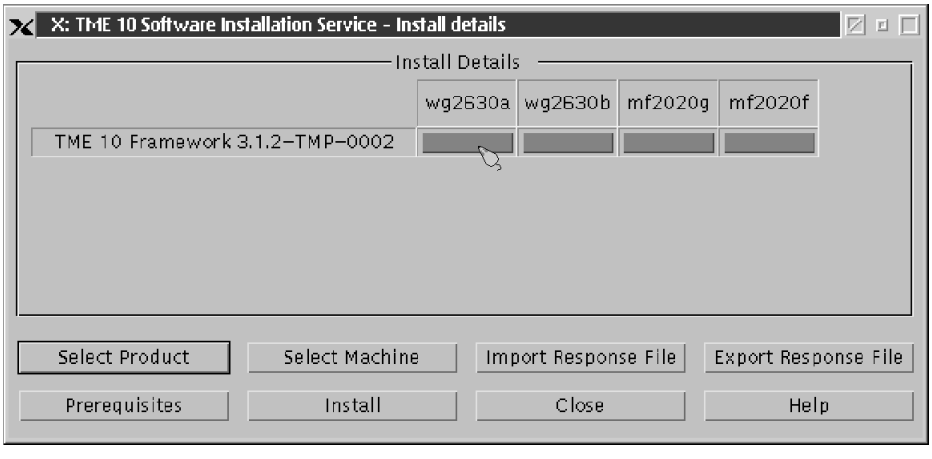

Figure 156. The SIS Install Details Dialog

The Install Details dialog as shown in Figure 156 shows all the cells in dark gray. Clicking on a cell displays a message dialog shown in Figure 157 on page 198. This message informs us that Tivoli Management Framework product has to be installed on the Windows NT nodes before the Tivoli Management Framework patch can be installed.

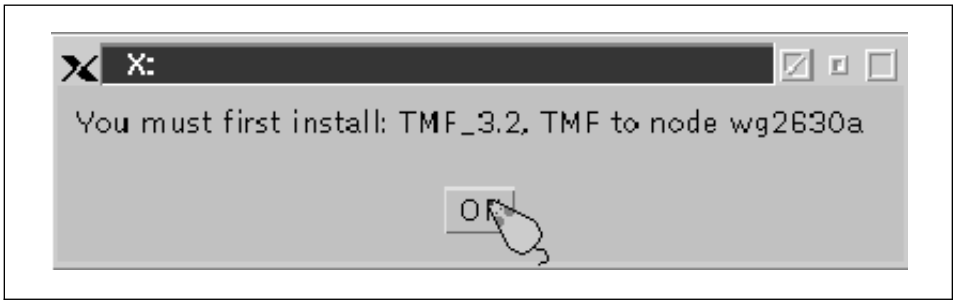

Figure 157. Information Dialog

Tivoli Software Installation Service can help you to plan for the installation of Tivoli products by providing information about the install activity before actually performing the install. In this example Tivoli Software Installation Service provided the following information without requiring you to perform an installation:

- The Tivoli Management Framework upgrade is installed in the Install Repository.
- The Tivoli Management Region has four Windows NT machines and those four product licenses are required for the Tivoli Management Framework upgrade.
- The Tivoli Management Framework product installation activity has to be performed on the selected nodes before the Tivoli Management Framework upgrade installation can be carried out.

8.2.4 Installed Endpoints

If endpoints in a Tivoli Management Region do not have the Tivoli managed node or PC agent software running on them, they are visible only to the TMR Endpoint Manager. Therefore, they are not displayed in the Install Repository - Select Machine dialog, shown in Figure 154 on page 196, when you are using Tivoli Software Installation Service to view the machines in your Tivoli Management Region.

You need to use the TMR Endpoint Manager to view installed endpoints in the region. To see a list of endpoints in the Tivoli Management Region, start the Tivoli desktop graphical user interface on the TMR server. Click on the

Endpoint Manager icon to display a list of the endpoint gateways in the Tivoli Management Region. Figure 158 on page 199 shows a Gateway List dialog with one gateway.

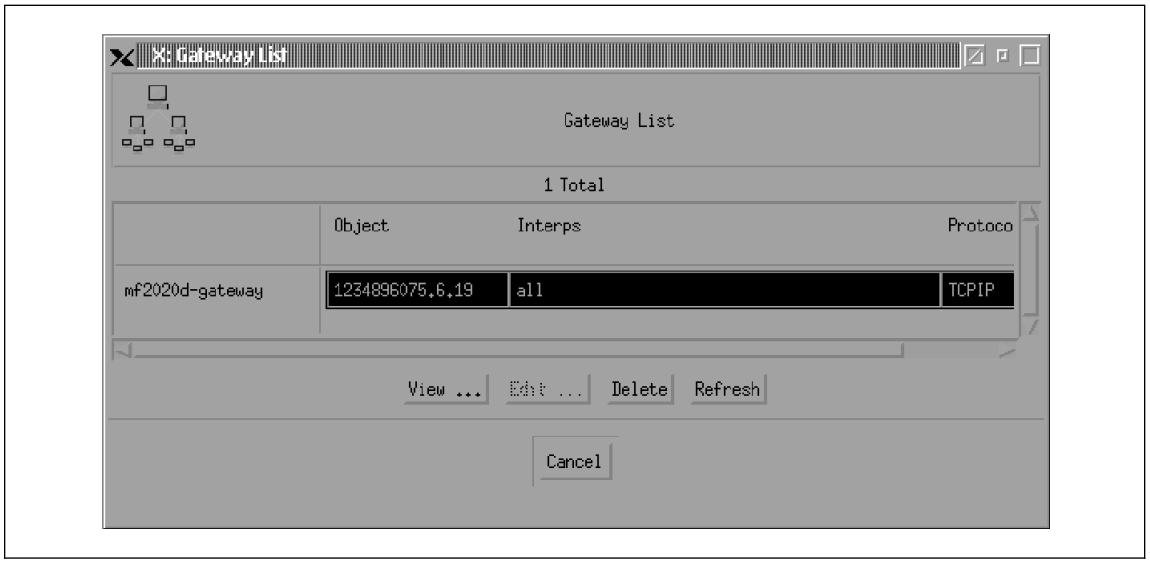

Figure 158. Endpoint Gateway List

Select a gateway by highlighting its Object descriptor, and then double-click on it or select the **View** option to get a list of the endpoints assigned to it. Figure 159 on page 200 shows the endpoints assigned to the mf2020d gateway.

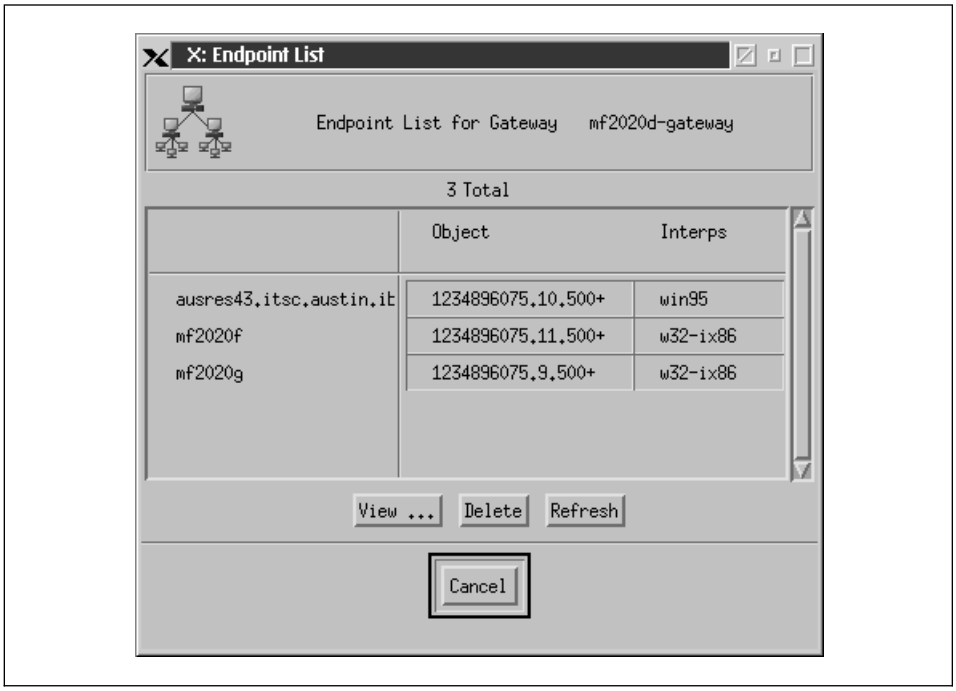

Figure 159. Endpoint List

The Endpoint List dialog, shown in Figure 159, shows the list of endpoints for the gateway mf2020d and the operating system for each endpoint. You can highlight an endpoint's Object descriptor and double-click on it or select the **View** option to retrieve further information about the endpoint, as shown in Figure 160 on page 201.

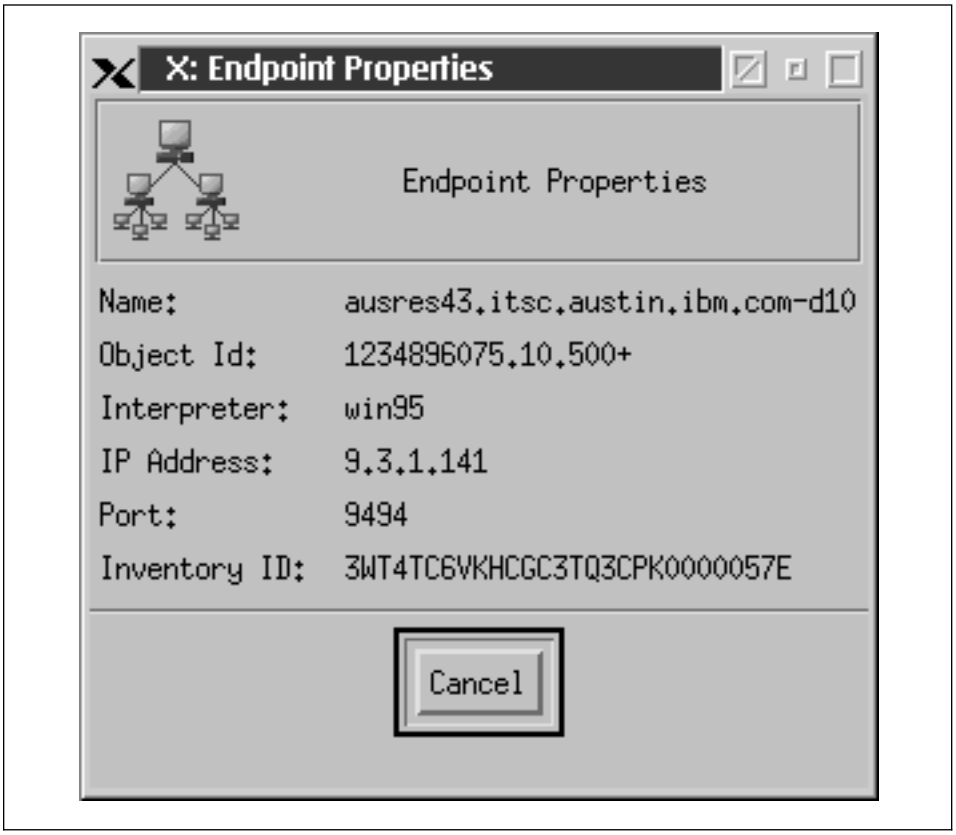

Figure 160. Endpoint Properties

The Endpoint Properties dialog displays the following information about an endpoint:

Name The machine hostname of the endpoint

Object Id The object identifier that this endpoint is referred to in the Tivoli Management Region

Interpreter The operating system type of the endpoint

IP Address The IP address of the endpoint

Port The port used to login to the gateway

Inventory ID The inventory identifier

When you have completed viewing the information in the Endpoint Properties dialog select **Cancel** and you will return to the Endpoint List dialog. You can continue to view other endpoints from the endpoint list. When you have

completed viewing endpoints repeatedly select **Cancel** buttons until you return to the Tivoli desktop. -

Chapter 9. Experiences with Tivoli Software Installation Service

This chapter contains a collection of experiences that the residents who worked on this redbook wish to share with you about Tivoli Software Installation Service and mass installation. Though we have grouped these together here in this chapter, we have not attempted to place any order or importance to them. We have attempted to provide hints and tips we hope will be useful to you and, where possible, we have provided work arounds for the limitations that we encountered.

9.1 Access Violation Errors when Using SIS on Windows NT

If Tivoli Software Installation Service is installed on a Windows NT machine where the display is set to 16 colors, when you attempt to use either the **Help** or **View logs** options an exception occurs. The Software Installation Service dialog disappears, and the dialog shown in Figure 161 appears.

```
Dr Watson for Windows NT

An application error has occurred and an application error log is
being generated

                            java.exe
Exception: access violation(0xc0000005),Address:0x037cda04
```

Figure 161. Access Violation Using SIS

The error log DRWTSN32.LOG is generated and this file can be located in the Windows directory. To get around this problem, it is necessary to set the display on a Windows NT machine to at least 256 colors.

9.2 Installing TRIP

The Tivoli Remote Execution Service (TRIP) is a prerequisite for Tivoli products to be installed on Windows NT machines in a Tivoli Management Region. TRIP allows for the performing of remote operations on Windows NT clients from TMR servers or managed nodes.

9.2.1 When SIS Will Install TRIP

Tivoli Software Installation Service checks for and installs TRIP on Windows NT machines under the following circumstances:

- When you add a machine to the Install Repository using the Software Installation Service- Install details dialog Select Machine --> Add Machine options.
- When a Windows NT machine has TRIP installed but TRIP has been temporarily stopped and the machine is selected from the list of machines shown on the Install Repository - Select Machine dialog.

For Tivoli Software Installation Service to be able to install TRIP there must be least one Windows NT machine in the Tivoli Management Region running TRIP. If there is at least one Windows NT machine running TRIP in the region then Tivoli Software Installation Service automatically pushes TRIP to the other Windows NT machines in the region as required.

9.2.2 Manually Installing TRIP

TRIP has to be manually installed on the first Windows NT machine in a Tivoli Management Region. This machine then functions as the NT repeater for a Tivoli Management Region. This installation can be performed locally or through remote access. More information on installing TRIP can be found in Chapter 5 of the *Tivoli Managed Environment Tivoli Management Framework Planning and Installation Guide*.

9.2.3 Pushing TRIP within an Windows NT Domain

If the TMR server is a Windows NT machine, TRIP will have been installed on it at the time you installed Tivoli Management Framework. This machine can function as the NT repeater and distribute TRIP when Windows NT Tivoli clients are created through the traditional Tivoli client installation process, as well as when they are created through the Tivoli Software Installation Service installation process.

9.3 Pushing Endpoints

The endpoint software images for managed nodes and PC managed nodes are included in the Tivoli Management Framework release 3.6 CD-ROM. You can import these images into the Install Repository and then use Tivoli Software Installation Service to push the endpoint software out to create multiple endpoints.

Note

Tivoli Software Installation Service requires TRIP to be running on Windows NT machines, and the Tivoli PC agent software on PCs with OS/2, DOS, Windows 3.x or Windows 95, before endpoints can be created on these machines.

9.3.1 Traditional Methods

An endpoint can be installed manually on a machine using any of the following methods:

- Locally from diskettes on to PCs

  The endpoint software images for each type of operating system can be copied onto diskettes from the Tivoli Management Framework CD-ROM. On the release 3.2 CD-ROM these images were stored under the \PC\LCF\OSTY PE directory.

- Remotely using logon scripts

  You can modify Windows3.x, Windows 95 and Windows NT user logon scripts to connect to a shared CD-ROM drive and initiate the endpoint creation process from the Tivoli Management Framework CD-ROM.

- Using the `WINSTLCF` command for UNIX and Windows NT machines

  The `WINSTLCF` command can be run from the TMR server command-line interface to create endpoints on UNIX and Windows NT machines. The command:

  ```
  WINSTLCF <machine_name>|<machine_names.lst>
  ```

  creates endpoints with default configuration on `<machine_name>` or multiple machines listed in the `<machine_names.lst>` file.

You can get detailed information on using the above methods to install endpoints in Chapter 8, "Tivoli Managed Environment Endpoints", of the Version 3.2 *Framework Installation and Planning Guide*.

9.4 Using Shared Install Repository

When you have more than one Tivoli Management Region in your environment you need to install and run Tivoli Software Installation Service separately in each of your regions. Even though you are running more than one copy of Tivoli Software Installation Service in your environment you do not need to have a separate install repository for each on your regions. Tivoli Software Installation Service provides the capability to share one install repository between two or more regions.

When you want Tivoli Software Installation Service to use an install repository that is located on a machine in a different Tivoli Management Region, you should first make the IR directory on the machine where the install repository is located accessible to the machine that you are going to be running Tivoli Software Installation Service. This can be accomplished in several different ways, including:

1. If you are installing Tivoli Software Installation Service on a Windows NT machine (machine A) that is to be used with a shared install repository that is running on another Windows NT machine (machine B), then on machine A you need to map the install repository directory of machine B as a network drive using the Network Neighborhood feature of Windows NT.

   When Tivoli Software Installation Service prompts you for the install repository location during the installation process of Tivoli Software Installation Service on machine A, specify the path of the mapped network drive. Tivoli Software Installation Service then accesses this network drive to locate the shared install repository.

2. If you are installing Tivoli Software Installation Service on an UNIX machine (machine C) that is using a shared install repository that is running on another UNIX machine (machine D) then export the install repository directory or file system of machine C as a Network File System (NFS) using smitty. Then on machine C, mount the exported directory or file system of the shared install repository of machine D as a local file system using smitty.

   When Tivoli Software Installation Service prompts you for the install repository location during the installation process, specify the path of this remote file system that you have mounted locally on machine C. Tivoli Software Installation Service then accesses this drive as a shared install repository.

3. If you are installing Tivoli Software Installation Service on an UNIX machine (machine E) that is using the shared install repository of a Windows NT machine (machine F) then the Windows NT machine should be configured using some third party TCP/IP products like SAMBA or Humming Bird to export its install repository directory as a NFS.

   After the install repository is exported, the UNIX machine (machine E) should be configured to mount the exported install repository of the Windows NT machine (machine F) as a local file system.

   When Tivoli Software Installation Service prompts for the Install Repository location during the installation process on the UNIX machine (machine E) specify the path of this file system. Tivoli Software Installation Service now accesses this file system as a shared install repository.

4. If you are installing Tivoli Software Installation Service on a Windows NT machine (machine G) that is using the shared install repository of an UNIX machine (machine H), then export the install repository directory of machine H as a Network File System(NFS) using smitty.

On the Windows NT machine (machine H) install and configure some third party TCP/IP product like SAMBA, or Humming Bird to map the exported IR of Machine H as a network drive.

When Tivoli Software Installation Service prompts for the Install Repository location during the installation process on the Windows NT machine (machine G) specify the path of the mapped network drive of the UNIX machine (machine H). Tivoli Software Installation Service now uses the mapped drive as the shared install repository.

9.5 Prerequisite Box

For each installation activity, Tivoli Software Installation Service verifies certain prerequisite conditions before installing a product on a machine. These prerequisites are stored in the Install Repository and are applicable to all installation sessions. You can view or modify these prerequisites as well as add your own, using the Prerequisites option from the Install Details dialog. Even though Tivoli Software Installation Service provides the capability to modify the prerequisites, it is recommended that you be knowledgeable with the Tivoli environment, Tivoli Management Framework and Tivoli Software Installation Service before altering the provided prerequisite checks. We provide the information in this section for those occasions when you need to add or delete the checking for your environment.

9.5.1 What Prerequisite Box Items Do

The provided predefined prerequisites are used by Tivoli Software Installation Service to check for the following conditions:

Proper connectivity between the server and machines to be installed, tested by using `PING`

Proper connectivity between an endpoint and its gateway

The correct shell type and version for the `REXEC` and `RSH` commands to work

Previous existence of a client database directory on a Windows NT machine, is not overwritten unless specified by the `Overwrite` entry

Existence of an NTFS local drive on Windows NT for the creation of the client database

Existence of the `KBDUS.DLL` file on Windows NT machines

Permissions set to `/DEV/NULL` on UNIX machines

Tivoli Software Installation Service checks and performs each prerequisite in a pre-defined sequence. It continues or terminates the installation activity based on the values returned by the prerequisite following its execution.

9.5.2 Altering Items in the Check List

You can view, add or modify prerequisites using the Prereq Editor, as shown in the following example:

1. To display the Prereq Editor dialog, as shown in Figure 162 you need to select the **Prerequisites** option from the Tivoli Software Installation Service Install details dialog.

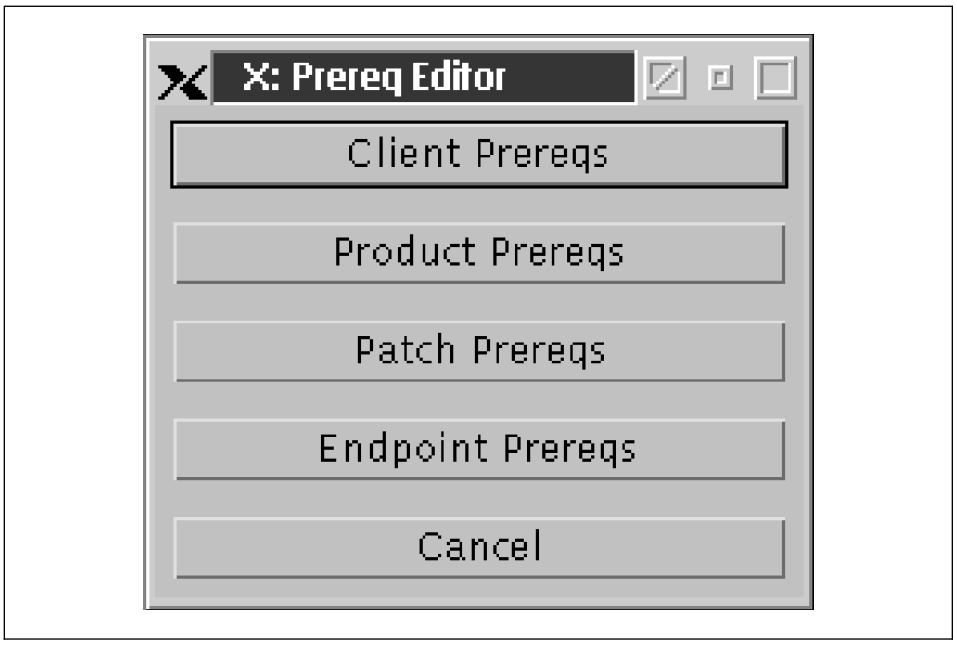

Figure 162. The Prerequisite Editor Dialog

The Prereq Editor dialog lists the different types of prerequisites that Tivoli Software Installation Service supports.

Client Prereqs Contains prerequisites for the machines being installed

Product Prereqs
Contains prerequisites for the Tivoli products selected for the intended installation

Patch Prereqs Displays prerequisites defined for the Tivoli patches selected for installation

Endpoint Prereqs
Displays the predefined prerequisites for endpoint creation

2. Select one of the Prereqs buttons on the Prereq Editor dialog to view the predefined prerequisites. The following example adds a prerequisite to the Client Prereqs. By selecting the **Client Prereqs** on the Prereq Editor

dialog, the Client Prereqs dialog as shown in Figure 163 on page 209 is displayed.

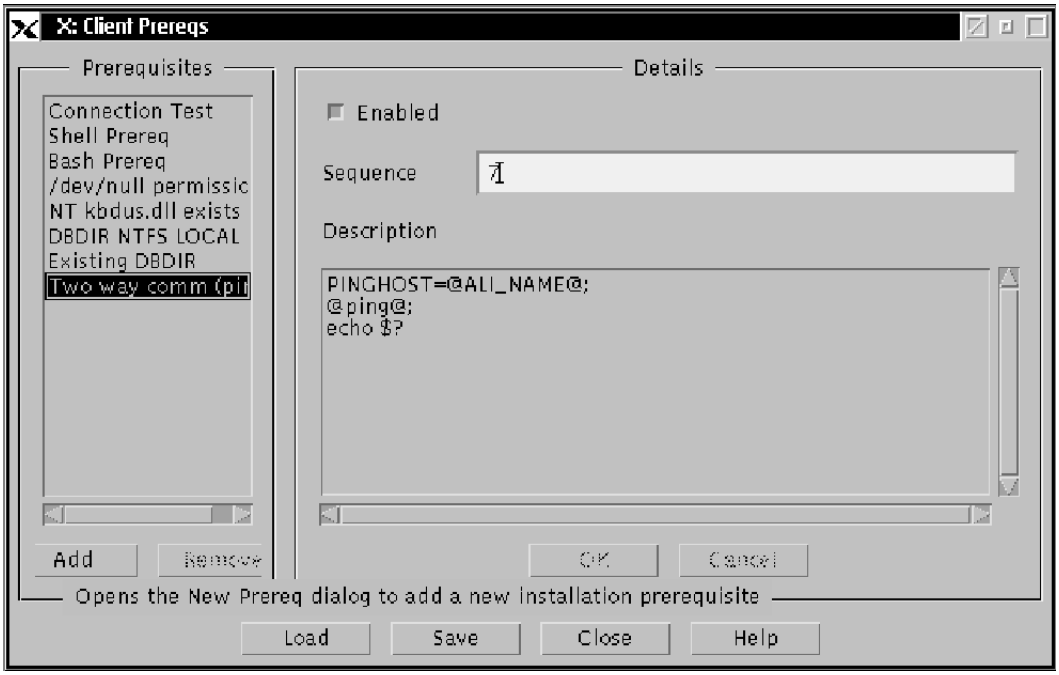

Figure 163. Client Prerequisites Dialog

3. From the Client Prereqs dialog, highlight a prerequisite from the Prerequisites list box on the left. The details of the prerequisite run are shown in the Description list area of the Client Prereqs dialog. You can modify the prerequisites using any of the following methods:
   - To add a prerequisite as in this example, click on the **Add** option at the Client Prereqs dialog. The New prerequisite dialog, as shown in Figure 164 on page 210 is displayed. Here you can enter the commands for the prerequisite you are adding.

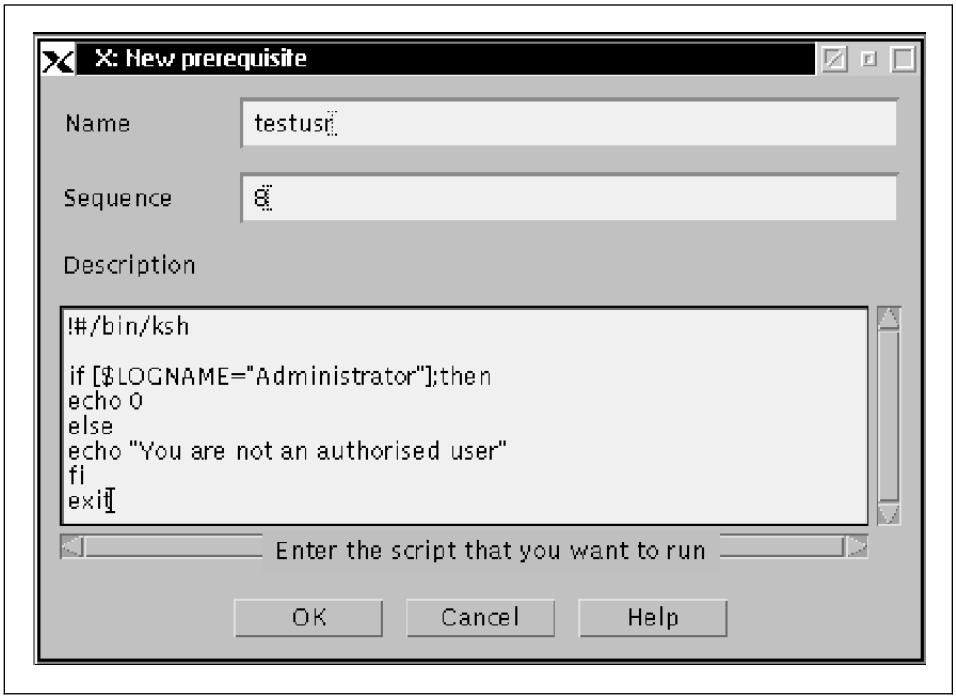

Figure 164. Adding a Prerequisite

a. Enter a name for the prerequisite you wish to add. In the example shown in Figure 164 the name `testusr` is entered.

b. Enter the sequence number that you wish the prerequisite to be run, starting from 0 as the first to execute. In this example the number 8 has been entered and since it is the highest number then it is run last in the sequence.

c. Enter a valid shell script to perform the checks you require. In this example, script to make the Administrator ID a prerequisite for the installation has been written as shown in the Description area of Figure 164.

d. Select **OK** to add the prerequisite to the Prerequisites list.

- Enable or disable a predefined prerequisite by selecting it and toggling the check on the Enabled box.
- Change the run sequence of a predefined prerequisite by selecting it and modifying the Sequence field value.
- Remove a predefined prerequisite from the Install Repository by selecting it and clicking on the **Remove** option.

Warning

As this removes the prerequisite permanently from the Install Repository, it is recommended that you simply disable the prerequisite if it is not applicable to your environment. This way if at some future time you need the prerequisite it will be available for your use.

- Modify a user-defined prerequisite by highlighting it, editing the script in the Description box, and using the **OK** or **Cancel** options to accept or reject the changes. If you highlight a prerequisite and the description box is grayed out, this means you cannot modify that prerequisite.
- Select **Load** to load the default prerequisites.
- Select **Save** option to save your changes. These changes are used for all future installations until they are disabled or removed.

9.5.3 Returning Success/Failure

Prerequisites return a value of either zero, after a successful execution, or non-zero, to indicate a failure. You can use these return values to indicate to the Tivoli Software Installation Service install process whether your user-defined prerequisites have been met successfully or not. The Tivoli Software Installation Service install terminates any installation activity if a prerequisite returns a non-zero return value.

In the example prerequisite shown in Figure 164 on page 210, the script returns a value of 0 or displays a message. As the Tivoli Software Installation Service install process never receives a non-zero value from this script, the install process continues even if the condition defined in the example is not met.

The Tivoli Software Installation Service installation log file lists the success or failures of each prerequisite in the sequence that they are executed.

9.6 Clearing a Partial Tivoli Node Install

This section provides tips on how to quickly reset a node or end point system following a failure to completely install Tivoli on the system. This is not the recommended procedure to remove Tivoli products, and is only described to aid in installation scenarios.

9.6.1 Windows NT

Before removing the Tivoli software from a Windows NT machine, first stop the TRIP by typing the command:

```
net stop trip
```

If the machine is a managed node, stop the Object Dispatcher service using the command:

```
net stop oserv
```

If the machine is a managed node that has endpoint software installed, stop the `Tivoli Lightweight Client` process from the Windows NT **Control Panel --> Services** dialog.

If the machine is a managed node that has endpoint gateway software installed, you can stop the `gateway` process using the **End Task** option from the Windows NT Task Manager dialog.

After the Tivoli services have been disabled, you can delete the Tivoli directories and libraries on the Windows NT machine.

9.6.2 IBM AIX

If the IBM AIX machine is a managed node, the Object Dispatcher service can be stopped using the command:

```
odadmin shutdown
```

If the machine is an endpoint or an endpoint gateway, use the command:

```
ps -ef
```

to get the process ID of the `lcfd` process or the `gateway` process.

Then issue the command:

```
kill <process_ID>
```

to terminate the process where the <process_ID> is the one returned from the `ps -ef` command.

You can use the command `rm -rf` to delete the Tivoli directories and libraries on the UNIX machine.

9.6.3 Windows 95

If the machine is an endpoint, stop the `lcfd` process using the **stop lcfd** option under **Start --> Programs --> Tivoli** menu options from the Task-bar. Then use the **Uninstall LCF** option to remove the Lightweight Client Framework.

If the machine is running the Tivoli PC agent software, use the Windows Task Manager to terminate the process Windows 95 TME Agent. You can then delete the directory where Tivoli was installed on the PC.

9.6.4 OS/2 Warp 4.0

On an OS/2 node, the Tivoli PC agent runs as a process called tivos2.exe. Bring up the Window List on OS/2 by pressing both the Ctrl and Esc keys at the same time, highlight the process, and use the Delete key to terminate the process.

If the machine is an endpoint, the LCF process lcfd.exe is running as a background process. This process can be terminated through the Window List on OS/2. Bring up the Window List by pressing the Ctrl and Esc keys at the same time, highlight the process, and use the Delete key to terminate the process.

After the Tivoli processes have been terminated, you can remove the directory where Tivoli was installed.

9.7 Uninstalling Tivoli Software Installation Service

There are two ways to remove Tivoli Software Installation Service from the TRM Server or Managed Node where it has been installed.

1. Remove Tivoli Software Installation Service without removing the Install Repository.
2. Remove Tivoli Software Installation Service and the Install Repository.

Before doing either of these processes you need to first ensure that Tivoli Software Installation Service is not running.

9.7.1 Keeping the Install Repository

To remove Tivoli Software Installation Service without removing the Install Repository on the machine where Tivoli Software Installation Service is installed, you need to enter the following via the command line interface:

```
sisclean
```

This removes the Tivoli Software Installation Service files from the machine without removing the IR directory. Figure 165 on page 214 shows the output from running the `sisclean` command.

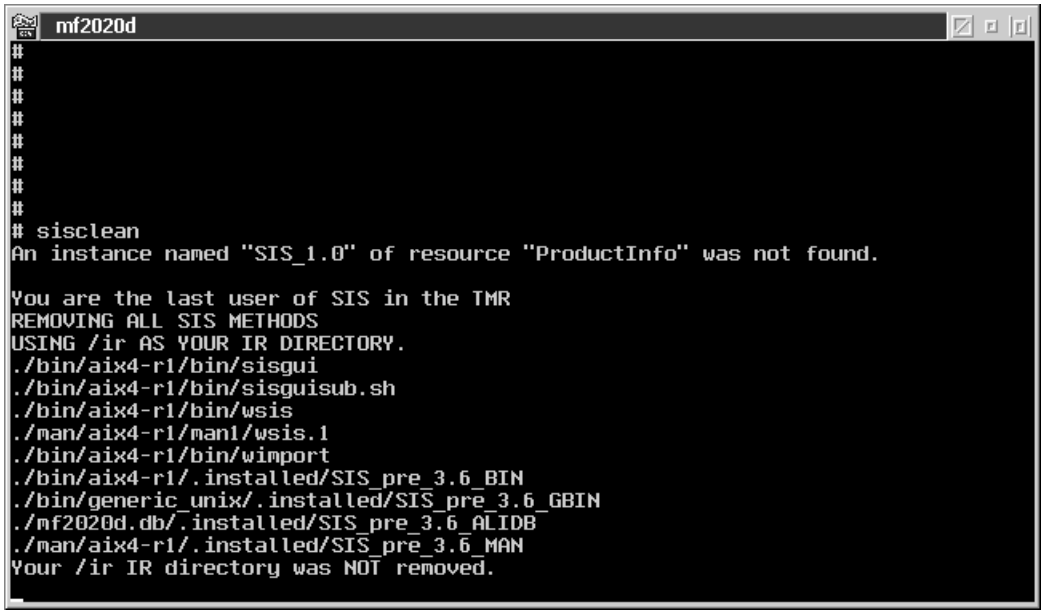

Figure 165. Removing SIS

9.7.2 Removing the Install Repository

To remove Tivoli Software Installation Service and the Install Repository on the machine where Tivoli Software Installation Service is installed you need to enter the following via the command line interface:

```
sisclean -removeir
```

This removes the Tivoli Software Installation Service files as well as the Install Repository from the machine. Figure 166 on page 215 shows the output from the issuing of the `sisclean -removeir` command.

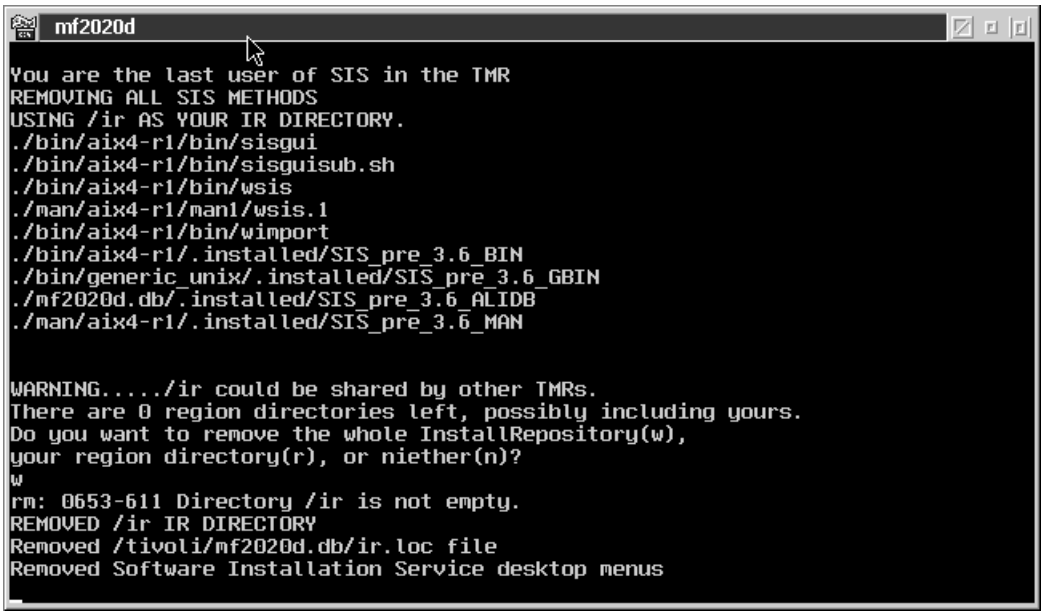

Figure 166. Removing SIS and IR

9.8 Removing a Machine from SIS

Tivoli Software Installation Service does not give you an option to remove any of the machine from its machine list directly. The only way to remove a machine from the list of machines that Tivoli Software Installation Service displays is to remove the machine from the Tivoli Management Region using normal Tivoli methods. Then synchronize Tivoli Software Installation Service with the TMR sever. When Tivoli Software Installation Service synchronizes with the TMR server it updates the machine list and the deleted machine is no more available in the list.

9.9 Removing a Product from the Install Repository

There might be a scenario where you want to remove a particular product from the Install Repository. Though there is no radio button provided for this option there is a process you can use to remove products from the Install Repository

9.9.1 Removing Framework

To remove Tivoli Management Framework from the Install Repository perform the following steps:

1. Stop Tivoli Software Installation Service if it is running.
2. Remove the files .PKT under the /IR/Framework/TMF-3.2 directory, where IR is the directory where the Install Repository is located.
3. Remove the directory CFG under the /IR/Framework/TME-3.2 directory.
4. Remove the file miniprod.sav under the /IR/TMR/Defaults directory.
5. Remove the file minitmr.sav under the /IR/TMR/Defaults directory.
6. Restart Tivoli Software Installation Service.

   Now the product Tivoli Management Framework is removed from the Install Repository and does not appear on the Install Repository - Select Product list.

9.9.2 Removing Tivoli Products

This example removes the Tivoli product Userlink/DHCP Version 3.2 from the Install Repository. This example assumes that the Install Repository is located in the /IR directory. To remove Tivoli products from the Install Repository perform the following steps:

1. Before removing the product, stop Tivoli Software Installation Service if it is running.
2. On the command line, change to the directory where the Install Repository is located via issuing the following command:

   ```
   cd IR
   ```

3. Change to the Product directory by typing:

   ```
   cd Products
   ```

4. In the Products directory, there are many sub-directories. Each one contains a Tivoli product. Change to the directory of the Tivoli product that you want to be removed. In this example that is the Userlink* directory.

   ```
   cd Userlink*
   ```

5. Remove all the .PKT files.

   ```
   rm .PKT
   ```

6. Remove the .CFG directory.

   ```
   rm -r CFG
   ```

7. Remove the product.sav file using the `rm` command.

   ```
   rm product.sav
   ```

8. Change to IR/TMR/Defaults directory.

   ```
   cd /IR/TMR/Defaults
   ```

9. Remove the miniprod.sav file.

   ```
   rm miniprod.sav
   ```

10. Restart Tivoli Software Installation Service. Now the removed product no longer appears in the Install Repository-Select Product list. By following this procedure you can remove the Tivoli products you no longer want in your Install Repository.

9.10 SIS Fails to Synchronize with TMR

At times when the Synchronize with TMR option is selected from the TME 10 Software Installation Service dialog, the synchronization can fail. The Synchronizing with TMR dialog is displays a red filled progress bar along with the message `Failed at 0 percent`. In addition a warning dialog box appears with the following message:

```
WARNING:

Sync with TMR failed... System Exception: failure detected by object
adapter: completion status: NO
          system call failed
```

This error is caused by the `oserv` service being short of required system resources. Stop and restart the `oserv` service. Then attempt to re-synchronize Tivoli Software Installation Service with the TMR server again using the Software Installation Service dialog **Synchronize with TMR** option. The synchronization should be successful now.

9.11 The Select Machine Display is Not Accurate

If after you perform the procedure used to remove a machine from the Install Repository, as described in Section 9.8, “Removing a Machine from SIS” on page 215, Tivoli Software Installation Service may still display the machine in the **Select Machine** list. You can remove these machines from the list by executing the command:

```
wchkdb -u
```

from the command-line interface on the TMR server.

When the `wchkdb` completes, restart Tivoli Software Installation Service and the machines no longer are displayed in the Select Machine list.

Note

The `wchkdb` process may take a long time to run if your Tivoli Management Region contains many nodes.

9.12 Rebuilding the Install Repository

There may be an occasion where your Install Repository is full and you need to move it to another location. The new location may be a different directory, hard drive or file system.

To move the existing files to the new location perform the following steps:

1. Stop Tivoli Software Installation Service if it is running.
2. Copy all the files from the existing Install Repository to the new location.
3. Use your favorite text editor to change the Tivoli Software Installation Service directory path pointer to the new Install Repository location.

   The Tivoli Software Installation Service directory path pointer to the Install Repository is contained in a plain text file named ir.loc. The ir.loc file is stored in the directory named by the $DBDIR environment variable. This file is a plain text file that only contains the directory path where your Install Repository is located.

   For example, if your original Install Repository was located in the ir directory then the ir.loc file should read:

   ```
   /ir
   ```

   If you relocated the install repository files to the directory new/and/bigger/ir: then the contents of ir.loc should be changed to: /new/and/bigger/ir
4. Restart Tivoli Software Installation Service. Tivoli Software Installation Service now uses the Install Repository in the new location.

Appendix A. Internet References

This Appendix contains several Internet addresses (URLs) that you may find provide useful information.

A.1 Tivoli Web Sites

Tivoli Home Page for Internet users

`http://www.tivoli.com`

Tivoli Support Page for Internet users

`http://www.support.tivoli.com`

Tivoli Home Page for IBM intranet users

`http://corp.tivoli.com (intranet)`

A.2 IBM Web Sites

IBM Home Page for Internet users

`http://www.ibm.com`

IBM Home Page for intranet users

`http://w3.ibm.com (intranet)`

IBM Redbooks Home Page - Redbooks on Tivoli

`http://www.redbooks.ibm.com/solutions/tivoli`

IBM BookManager Bookserver

`http://as400bks.rochester.ibm.com:80/itsofrm.htm (intranet)`

A.3 Other Web Sites

Microsoft Home Page

`http://www.microsoft.com`

Articles on Tivoli

`http://wellesleyinfo.com/tmv/index.html`

`http://www.zdnet.com    - search with keyword Tivoli`

`http://www.techweb.com  - search with keyword Tivoli`

Appendix B. Special Notices

This publication is intended to help system administrators, Tivoli partners, and consultants understand how to utilize the features of Tivoli Software Installation Service to install large numbers of Tivoli products, patches, nodes and endpoints. The information in this publication is not intended as the specification of any programming interfaces that are provided by Tivoli Software Installation Service or the Tivoli Tivoli Management Framework. See the PUBLICATIONS section of the IBM Programming Announcement for Tivoli Software Installation Service for more information about what publications are considered to be product documentation.

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Appendix C. Related Publications

The publications listed in this section are considered particularly suitable for a more detailed discussion of the topics covered in this redbook.

C.1 International Technical Support Organization Publications

For information on ordering these ITSO publications see “How to Get ITSO Redbooks” on page 227.

- *An Introduction to Tivoli Management Software*, SG24-4948
- *TME 10 Framework Version 3.2: An Introduction to the Lightweight Client Framework*, SG24-2025
- *Implementing TME 10 in High Availability Environments*, SG24-2032
- *Getting Started With TME 10 User Administration 3.1*, SG24-2015
- *Tivoli Redbook Collection* CD-ROM, SK2T-8044
- *Setting Up a TME 3.0 NT Environment*, SG24-4819
- *TME 3.0 NT - Automated Processes*, SG24-4793
- *TME 10 Cookbook for AIX Systems Management and Networking*, SG24-4867
- *Examples of Using TME 10 NetView for AIX V5 and TME 10*, SG24-4898
- *Migrating from Systems Monitor for AIX to TME 10*, SG24-4936
- *The TME 10 Deployment Cookbook: Courier and Friends*, SG24-4976
- *TME 10 Internals and Problem Determination*, SG24-2034
- *TME 10 Deployment Cookbook: Inventory and Company*, SG24-2120
- *TME 10 Global Enterprise Manager Topology Service and NetView 3270 Java Client*, SG24-2121
- *TME 10 Inventory 3.2: New Features and Database Support*, SG24-2135
- *TME 10 Software Distribution - Mobile Clients*, SG24-4854
- *A First Look at TME 10 Distributed Monitoring 3.5*, SG24-2112

C.2 Redbooks on CD-ROMs

Redbooks are also available on CD-ROMs. **Order a subscription** and receive updates 2-4 times a year at significant savings.

CD-ROM Title	Subscription Number	Collection Kit Number
System/390 Redbooks Collection	SBOF-7201	SK2T-2177
Networking and Systems Management Redbooks Collection	SBOF-7370	SK2T-6022
Transaction Processing and Data Management Redbook	SBOF-7240	SK2T-8038
Lotus Redbooks Collection	SBOF-6899	SK2T-8039
Tivoli Redbooks Collection	SBOF-6898	SK2T-8044
AS/400 Redbooks Collection	SBOF-7270	SK2T-2849
RS/6000 Redbooks Collection (HTML, BkMgr)	SBOF-7230	SK2T-8040
RS/6000 Redbooks Collection (PostScript)	SBOF-7205	SK2T-8041
RS/6000 Redbooks Collection (PDF Format)	SBOF-8700	SK2T-8043
Application Development Redbooks Collection	SBOF-7290	SK2T-8037

C.3 Tivoli Publications

The following publications shipped with the Version 3.6 of the Tivoli Framework and are also important sources of further information:

- *Framework Planning & Installation Guide*, SC31-8432
- *Framework User's Guide*, GC31-8433
- *Framework Reference Manual*, SC31-8434
- *Framework Release Notes*, GI10-3028
- *Software Installation Service User's Guide*, GC31-5152
- *Software Installation Service Release Notes*, GI10-0512

These publications are also relevant as further information sources:

- *Tivoli/Courier User's Guide*, GC31-8330
- *Tivoli/Courier Reference Manual*, SC31-8331
- *TME 10 Remote Control User's Guide*, GC31-8437
- *TME 10 GEM Installation Guide*, GC31-5151
- *TME 10 GEM User's Guide*, GC31-5152
- *TME 10 GEM Instrumentation Guide*, GC31-5153
- *TME 10 Inventory User's Guide*, GC31-8381
- *TME 10 Global Enterprise Manager Documentation Kit*, SK3T-2196
- *Tivoli/Enterprise Console Documentation Kit*, SK2T-6050
- *Event Integration Facility User's Guide*, GC31-8337

How to Get ITSO Redbooks

This section explains how both customers and IBM employees can find out about ITSO redbooks, CD-ROMs, workshops, and residencies. A form for ordering books and CD-ROMs is also provided.

This information was current at the time of publication, but is continually subject to change. The latest information may be found at `http://www.redbooks.ibm.com/`.

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- **Redbooks Web Site on the World Wide Web**

  `http://w3.itso.ibm.com/`

- **PUBORDER** — to order hardcopies in the United States
- **Tools Disks**

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  ```
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  TOOLS SENDTO EHONE4 TOOLS2 REDPRINT GET SG24xxxx PACKAGE
  TOOLS SENDTO CANVM2 TOOLS REDPRINT GET SG24xxxx PACKAGE (Canadian users only)
  ```

  To get BookManager BOOKs of redbooks, type the following command:

  ```
  TOOLCAT REDBOOKS
  ```

  To get lists of redbooks, type the following command:

  ```
  TOOLS SENDTO USDIST MKTTOOLS MKTTOOLS GET ITSOCAT TXT
  ```

  To register for information on workshops, residencies, and redbooks, type the following command:

  ```
  TOOLS SENDTO WTSCPOK TOOLS ZDISK GET ITSOREGI 1998
  ```

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- **Telephone Orders**

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Canada	1-403-267-4455
Outside North America	(+45) 48 14 2207 (long distance charge)

- **1-800-IBM-4FAX (United States)** or **(+1)001-408-256-5422 (Outside USA)** — ask for:

Index # 4421 Abstracts of new redbooks
Index # 4422 IBM redbooks
Index # 4420 Redbooks for last six months

- **On the World Wide Web**

Redbooks Web Site	http://www.redbooks.ibm.com/
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Redpieces

For information so current it is still in the process of being written, look at "Redpieces" on the Redbooks Web Site (`http://www.redbooks.ibm.com/redpieces.html`). Redpieces are redbooks in progress; not all redbooks become redpieces, and sometimes just a few chapters will be published this way. The intent is to get the information out much quicker than the formal publishing process allows.

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Glossary

AIX. Advanced Interactive Executive. See AIX operating system.

AIX operating system. IBM's implementation of the UNIX operating system. The RS/6000 system, among others, runs the AIX operating system.

Alias. Another name by which a program or resource is known.

Binaries. The executable files associated with a computer product.

Browser. A program that initiates requests for information and displays the information found to the user.

CD-ROM. High-capacity, read-only memory in the form of an optically-read compact disc.

Client. A client of a Tivoli server. See TMR client and TMR server.

Command Line Interface (CLI). A type of computer interface in which the input command is a string of text characters. Contrast with graphical user interface (GUI).

Common Object Request Broker Architecture (CORBA). A specification produced by the Object Management Group (OMG) that presents standards for various types of object request brokers (such as client-resident ORBs, server-based ORBs, system-based ORBs, and library-based ORBs). Implementation of CORBA standards enables object request brokers from different software vendors to interoperate.

Courier. See Tivoli Software Distribution.

Daemon. A program that runs unattended to perform a standard service. Some daemons are triggered automatically to perform their task; others operate periodically.

Database. A collection of data with a given structure for accepting, storing, and providing, on demand, data for multiple users. The collection of data may be interrelated and organized according to a database schema to serve one or more applications. This collection of data may be fundamental to a system or to an enterprise.

Desktop. A graphical user interface (GUI) that represents a real desk. It is a folder that fills the computer screen and holds the objects that enable a user to interact with and perform operations on the system. Also see Tivoli desktop.

Disk Operating System (DOS). An operating system for computer systems that use disks and diskettes for auxiliary storage of programs and data.

Document type definition (DTD). The rules, determined by an application, that apply SGML to the markup language of documents of a particular type. SGML provides the syntax for the markup language, and the DTD provides the vocabulary for the markup language.

Domain. That part of a computer network in which the data processing resources are under common control.

Domain controller. A server within a domain that provides details of the server to all other servers and requesters in the domain. The domain controller is responsible for coordinating and maintaining activities in the domain.

Domain name server. In the Internet suite of protocols, a server that responds to queries from clients for name-to-address and address-to-name mappings as well as for other information.

DOS. See Disk Operating System

Endpoint. In the Tivoli environment, a Tivoli client that is the ultimate recipient for any type of Tivoli operation.

Endpoint Gateway. In the Tivoli environment, a Tivoli Managed Node that provides the path for information flow between Endpoints and the rest of the TME.

Framework. A set of object classes that provide a collection of related functions for a user or piece of software.

Graphical User Interface (GUI). A type of computer interface consisting of a visual metaphor of a real-world scene, often of a desktop. Within that scene are icons, representing actual objects, that the user can access and manipulate with a pointing device. Contrast with command line interface (CLI).

Hard Drive. A peripheral device, especially one that has addressed storage media that is used to seek, read, and write information on a storage medium.

Hypertext Markup Language (HTML). A markup language that is specified by an SGML document type definition (DTD) and that is understood by all World Wide Web servers.

IBM Operating System/2 (OS/2). An IBM licensed program that can be used as the operating system for Intel-based (or compatible) personal computers. The OS/2 licensed program is a 32-bit, multitasking operating system that provides memory protection and task dispatching services for DOS and Windows 3.1 software, as well as its own native programs.

Install Repository. In the Tivoli Software Installation Service environment, a directory structure on the hard drive on the machine where Tivoli Software Installation Service is installed that contains the image s of all the Tivoli software than can be installed on the machines in the Tivoli Managed Environment.

International Technical Support Organization (ITSO). Part of the IBM's North America Technical Support organization, the ITSO develops and delivers technical know-how and materials to technical professionals of IBM, Business Partners, and Customers in the marketplace. ITSO's objective is to extend the understanding of IBM's products and to accelerate the deployment and exploitation of IBM solutions.

Interp. In the Tivoli environment, the operating system platform that are supported for the various machines in the Tivoli Managed Environment.

Java. An object-oriented programming language for portable interpretive code that supports interaction among remote objects. Java was developed and specified by Sun Microsystems, Incorporated.

Java Virtual Machine. The platform specific software that executes on the machine where the Java program is running that translates the Java bytecode to into native machine code for that platform.

Kerberos. A system that provides authentication service to users in a network environment.

Kerberos Authentication System. An authentication mechanism used to check authorization at the user level. The Kerberos authentication and authorization mechanism allows client and server pairs to verify that the partner is authorized to participate in the function being performed.

Local area network (LAN). A data network located on the user's premises in which serial transmission is used for direct data communication among data stations.

Lightweight Client Framework. In the Tivoli environment, is an extension to the classic Tivoli Managed Environment Tivoli Management Framework that increases scalability of Tivoli Management Regions while reducing the hardware and software requirements on managed systems.

Machine. In the Tivoli environment, the physical computer hardware system software installed on it.

Managed Node. In the Tivoli environment, any managed resource on which the Tivoli Framework is installed.

Memory. All of the addressable storage space in a processing unit and other internal storages that is used to execute instructions.

Multitasking. A mode of operation that provides for the concurrent performance execution of two or more tasks.

Name server. The server that stores resource records about hosts.

Network. An arrangement of nodes and connecting branches. Connections are made between data stations.

Node. Any device, attached to a network, that transmits and receives data.

Object Management Group (OMG). A non-profit consortium whose purpose is to promote object-oriented technology and the standardization of that technology. The Object Management Group was formed to help reduce the complexity, lower the costs, and hasten the introduction of new software applications.

Object-oriented. A programming technique that focuses on the data in the application and methods that manipulate that data, rather than the procedures of more traditional programming approaches.

Object request broker (ORB). In object-oriented programming, software that serves as an intermediary by transparently enabling objects to exchange requests an d responses.

Oserv. The name of the object request broker used by the Tivoli environment. Oserv runs on the TMR server and each TMR client.

OS/2. See IBM Operating System/2

OS/2 Warp. Version 3 and 4 of IBM's OS/2 product.

Patches. In the Tivoli environment, the collection of fixes to solve problems with the Tivoli software released as Service Packs.

PC Agent. In the Tivoli environment, software installed on a client PC that enables Tivoli operations to execute on the PC. See PC managed node.

PC Managed Node. In the Tivoli environment, an object that represents a client PC. The Tivoli Framework can communicate with the client PC only if the PC agent is installed on the PC. Client PCs are most often referred to as PC managed nodes.

Platform. The hardware, the operating system, or a combination of the hardware and the operating system on which software programs run.

Policy Region. In the Tivoli environment, a group of managed resources that share one or more common policies. Tivoli administrators use policy regions to model the management and organizational structure of a network computing environment. The administrators can group similar resources, define access to and control the resources, and associate rules for governing the resources. The policy region contains resource types and the list of resources to be managed. A policy region is represented on the Tivoli desktop by an icon that resembles a capitol building (dome icon). When a Tivoli Management Region (TMR) is created, a policy region with the same name is also created. In this case, the TMR has only one policy region. However, in most cases, a Tivoli administrator creates other policy region s and subregions to represent the organization of the TMR. A TMR addresses the physical connectivity of resources whereas a policy region addresses the logical organization of resources.

Product. In the Tivoli environment, any of the Tivoli software offerings that can be installed in the Tivoli Managed Environment and utilize the architecture that the Tivoli Tivoli Management Framework provides.

Pushing. In the Tivoli Software Installation Service environment, the process of physically sending the required Tivoli product images to a machine within the Tivoli Managed Environment and then installing those images on that machine so that the Tivoli product is a functional part of the Tivoli Managed Environment.

Redbooks. Named for their red covers, are written by very experienced IBM professionals from all over the world. IBM Redbooks typically provide positioning and value guidance, installation and implementation experiences, typical solution scenarios, and step-by-step "how-to" guidelines. They often include sample code and other support materials.

Region. See Tivoli Management Region.

Response File. In the Tivoli Software Installation Service environment, the editable text file that defines all the product attributes settings and machine operating systems information needed for installation.

Remote Execution Protocol (REXEC). A protocol that allows the execution of a command or program on a foreign host. The local host receives the results of the command execution. This protocol uses the `REXEC` command.

Sentry. See Tivoli Distributed Monitoring.

Software Installation Service (SIS). A Tivoli product that provides fast and easy method for centralized installing of Tivoli products to machines in a Tivoli Managed Environment.

Solaris. Sun's name for its UNIX-based user environment, including the UNIX operating system, and window system.

Standard Generalized Markup Language (SGML). A syntax for markup languages that formalizes markup and frees it of system and processing dependencies.

Tivoli client. A client of a Tivoli server. See TMR client and TMR server.

Tivoli desktop. In the Tivoli environment, the desktop that system administrators use to manage their network computing environment.

Tivoli Distributed Monitoring. A Tivoli product that monitors system resources, initiates any necessary corrective actions, and informs system administrators of potential problems. Tivoli Distributed Monitoring consists of a group of monitors that are installed on each managed node that is to be monitored. It resolves some events on its own and may send others to the Tivoli Enterprise Console.

Tivoli Enterprise Console (TEC). A Tivoli product that collects, processes, and automatically initiates corrective actions for system, application, network, and dat abase events; it is the central control point for events from all sources. The Tivoli Enterprise Console provides a centralized, global view
of the network computing environment; it uses distributed event monitors to collect information, a central event server to process information, and distributed event consoles to present information to system administrators.

Tivoli Framework. The base software that is required to run the applications in the Tivoli product suite. This software infrastructure enables the integration of systems management applications from Tivoli and the Tivoli Partners. The Framework includes the following:

- Object request broker (oserv)
- Distributed object database
- Basic administration functions
- Basic application services
- Basic desktop services such as the graphical user interface (GUI)

In a Tivoli environment, the Tivoli Framework is installed on every client and every server with these exceptions:

- The Tivoli Framework is never installed on a client PC; rather, the PC agent is installed on the PC.
- The TMR server is the only server that holds the full object database.

Tivoli Global Enterprise Manager (Tivoli GEM). A Tivoli product that allows system administrators to graphically monitor, control, and configure applications residing in distributed and host (S/390) environments and to use the concept of business systems management to organize related components, thereby providing a business perspective for management decisions. Tivoli GEM gives Information Technology staff a logical view of the computing environment; this view shows, at a glance, the status of the multiple applications that comprise the enterprise's business system, including application components, the relationships among and between components, and the flow of data between the applications. By providing this view from a business perspective, Tivoli GEM enables system administrators to quickly make determinations about the business impact of any component failure. Addressing technology problems from the business perspective greatly improves the effectiveness of system administrators and provides a higher level of service to users.

Tivoli Inventory. A Tivoli product that enables system administrators to gather hardware and software information for a network computing environment. It scans the managed resources and stores inventory information in the configuration repository.

Tivoli Management Environment (TME). The Tivoli applications, based upon the Tivoli Framework, that are installed at a specific customer location and that address network computing management issues across many platforms. In a Tivoli environment, a system administrator can distribute software, manage user configurations, change access privileges, automate operations, monitor resources, and schedule jobs.

Tivoli Management Region (TMR). Consists of the machine that is running as the Tivoli server and all of the client machines that this server manages within the Tivoli Managed Environment.

Tivoli Plus module. Tivoli software that enables a specific vendor application to be managed by Tivoli products.

Tivoli Remote Access Account (TRAA). The Tivoli account to be used on a remote Windows NT machine to be used by Tivoli products to perform NetUse functions without needing to execute these request as an Administrator with the full authorization that running as Administrator implies.

Tivoli Remote Execution Service (TRIP). The executable code that provides the remote execution service for remote operations on each Windows NT client (basically equivalent to the REXEC service on UNIX).

Tivoli server. The server that holds or references the complete set of Tivoli software, including the full object database. See Tivoli client, TMR client, and TMR server.

Tivoli Software Distribution. A Tivoli product that automates software distribution to clients and servers in a network computing environment. An organization can use this product to install and update applications and software in a coordinated, consistent manner across a network. Tivoli Software Distribution creates file packages and distributes them to predefined subscribers.

TMR client. In a Tivoli environment, any computer--except the TMR server--on which the Tivoli Framework is installed. The oserv daemon runs on the

TMR client, and the TMR client maintains a local object database. See TMR server.

TMR server. A Tivoli server for a specific Tivoli Management Region (TMR). See and TMR client and Tivoli server.

Transmission Control Protocol (TCP). The TCP/IP layer that provides reliable, process-to-process data stream delivery between nodes in interconnected computer networks. TCP assumes that IP (Internet Protocol) is the underlying protocol.

Transmission Control Protocol/Internet Protocol (TCP/IP). A suite of protocols designed to allow communication between networks regardless of the technologies implemented in each network.

UNIX operating system. An operating system developed by Bell Laboratories that features multiprogramming in a multiuser environment. The UNIX operating system was originally developed for use on minicomputers but has been adapted for mainframes and microcomputers. The AIX operating system is IBM's implementation of the UNIX operating system.

Warp Server. An IBM licensed program that provides services to one or more clients over a network. Examples include a file server, a print server, and a mail server. Warp Server is installed along with and utilizes the functions provides by OS/2 Warp.

Web browser. A client program that initiates requests to a Web server and displays the information that the server returns.

Windows NT. A Microsoft licensed program that can be used as the operating system for Intel-based (or compatible) personal computers. The Windows NT licensed program is a 32-bit, multitasking operating system that provides memory protection and task dispatching services for DOS, Windows 3.1 and Windows 95 software.

Windows NT server. A Microsoft licensed program that provides services to one or more clients over a network. Examples include a file server, a print server, and a mail server.

Windows 3.1. A Microsoft licensed program that provides a GUI for Intel-based (or compatable) personal computers running DOS.

Windows 95. A Microsoft licensed program that can be used as the operating system for Intel-based (or compatable) personal computers.

List of Abbreviations

AIX	Advanced Interactive Executive
CLI	Command Line Interface
CORBA	Common Object Request Broker Architecture
DHCP	Dynamic Host Configuration Protocol
DLL	Dynamic Link Library
DNS	Domain Name Service
DOS	Disk Operating System
DTD	Document Type Definition
IBM	International Business Machines Corporation
IP	Internet Protocol
IR	Install Repository
ITSO	International Technical Support Organization
IPX/SPX	Internet Packet eXchange/Sequenced Packet eXchange
GEM	Global Enterprise Manager
GUI	Graphical user interface
LAN	Local area network
LCF	Lightweight Client Framework
MDist	Multiplexed Distribution
OMG	Object Management Group
OBR	Object Request Broker
OO	Object-oriented
OS/2	Operating System/2
PC	Personal computer
REXEC	Remote Execution Protocol
SGML	Standard Generalized Markup Language
TCP	Transmission Control Protocol
TCP/IP	Transmission Control Protocol/Internet Protocol (TCP/IP)
TEC	Tivoli Enterprise Console
TME	Tivoli Management Environment
TMR	Tivoli Management Region
TRAA	Tivoli Remote Access Account
TRIP	Tivoli Remote Execution Service

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