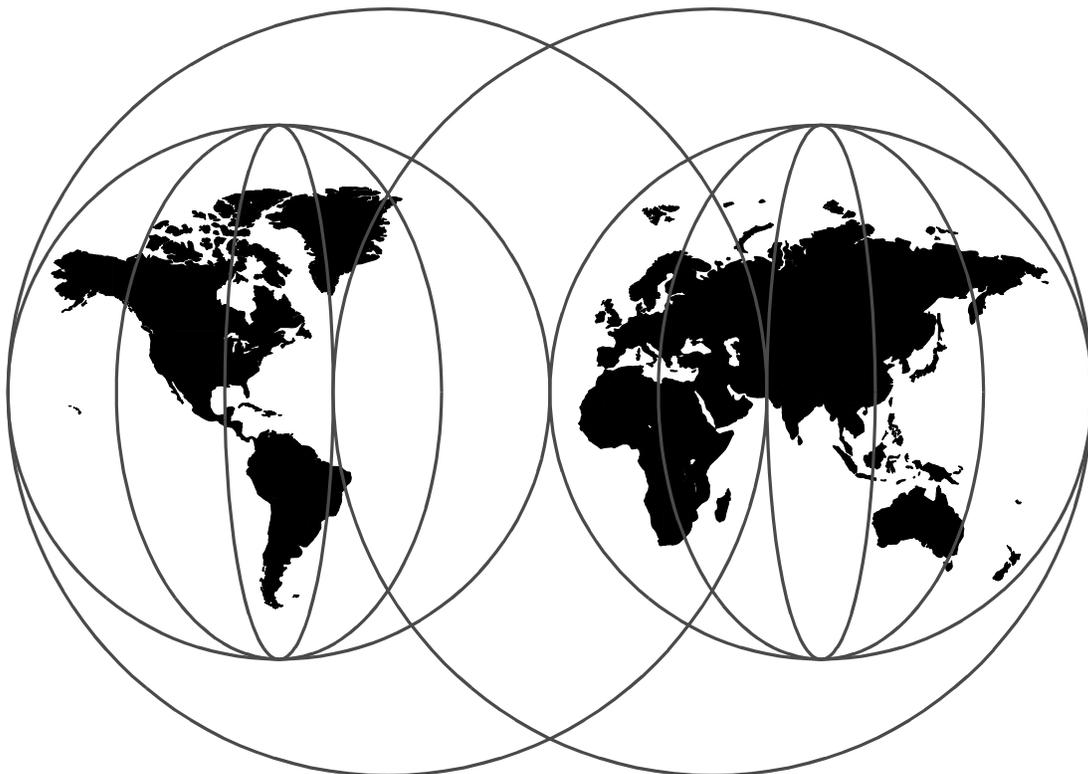


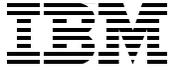
Managing Domino/Notes with Tivoli Manager for Domino, Enterprise Edition, Version 1.5

Kathy Hebblethwaite, Massimo Borzani, Raine Haapasaari, Sari Haapasaari



International Technical Support Organization

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International Technical Support Organization

SG24-2104-01

**Managing Domino/Notes with
Tivoli Manager for Domino,
Enterprise Edition, Version 1.5**

September 1998

Take Note!

Before using this information and the product it supports, be sure to read the general information in Appendix C, "Special Notices" on page 229.

Second Edition (September 1998)

This edition applies to Version 1.5 of Tivoli Manager for Domino for use with the supported operating systems.

Comments may be addressed to:
IBM Corporation, International Technical Support Organization
Dept. HZ8 Building 678
P.O. Box 12195
Research Triangle Park, NC 27709-2195

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Preface

This redbook provides an overview of the functionality of the Tivoli Manager for Domino, Enterprise Edition, Version 1.5 and provides details on the installation, usage, and customization options of the product. The redbook will provide invaluable guidance to anyone evaluating, planning, or implementing the Tivoli Manager for Domino. This redbook steps the reader through the installation and configuration process of the Tivoli Manager for Domino, and then steps through how to use each of the features available with the module. These features include managing Domino servers through supplied tasks, monitoring a Domino/Notes environment with the Domino server monitors and the TEC adapter, managing users through tasks as well as through user profiles using the optional Tivoli Admin Extension, remotely installing and upgrading Notes clients, and managing a Domino environment as a part of a business system using Tivoli Global Enterprise Manager (GEM). Details and tips on how to tailor the features that are provided with the Tivoli Manager for Domino are also included in this redbook.

A working knowledge of the Lotus Domino/Notes and Tivoli Enterprise environments, including GEM if you will be implementing the Tivoli Manager for Domino GEM instrumentation, is important in thoroughly understanding the functionality of the Tivoli Manager for Domino.

The Team That Wrote This Redbook

This redbook was produced by a team of specialists from around the world working at the Systems Management and Networking ITSO Center, Raleigh.

Kathy Hebblethwaite is an Advisory ITSO Specialist at the Systems Management and Networking ITSO Center, Raleigh. She writes extensively and consults worldwide on all areas of Tivoli applications management. Before joining the ITSO, Kathy worked in a customer programs and systems test department in what is now a part of Tivoli Systems, coordinating and running customer field tests and system verification tests for networking and systems management products in Research Triangle Park, North Carolina.

Massimo Borzani is an I/T Specialist in Italy, working for IBM Global Services, supporting the Tivoli product set. He has six years of experience with AIX and systems and network management, which includes previous responsibilities in the Rome Networking Software Lab in the area of software distribution.

Raine Haapasaari is a Tivoli Certified Consultant in Finland, working for IBM Global Services, doing services with the Tivoli products. He is the team leader of the Tivoli Services Team in IBM Finland. Raine has three years of experience in the management of distributed environments, in the areas of network management, availability management and software distribution.

Sari Haapasaari is a Certified Lotus Domino instructor in Finland, working for the Scribona Education Center in Scribona Computer Products Corporation. She has six years of experience teaching to I/T specialists and has been working with the Lotus Domino products for over three years. Scribona Computer Products is an IBM Business Partner and the largest channel distributor in the Nordic Countries.

The authors of the first edition of this redbook were:

Julius Milczarek
IBM Australia, Sydney, Australia

Jose Reguera
IBM Brazil, Sao Paolo, Brazil

Thanks to the following people for their invaluable contributions to this project:

Dave Henning
Dan Martillotti
Tony Saucedo
Mike Wyatt
Tivoli Systems, Austin, TX

Becky Anderson
Tivoli Systems, Chicago, IL

Kathryn Casamento
Mike Haley
Arne Olsson
Linda Robinson
Shawn Walsh
Systems Management and Networking ITSO Center, Raleigh, NC

Tara Campbell
ITSO Center, Austin, TX

Aimee Petelle
Tivoli Systems, Research Triangle Park, NC

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Chapter 1. Introduction

As part of Tivoli's applications management initiative, Tivoli is working to create application management modules for large client/server applications. When installed on top of a Tivoli Enterprise environment, these application management modules will allow for automatic full life-cycle management of the client/server application, by making use of the functionality available from the Tivoli Enterprise software. The Tivoli Manager for Domino is one such module.

This redbook assists with the installation and administration of Version 1.5 of the Tivoli Manager for Domino, and the optional Admin and Tivoli GEM APM extensions. Because the Domino/Notes environment and the Tivoli Enterprise environment are prerequisites for the Tivoli Manager for Domino, a working knowledge of these environments is important in thoroughly understanding some of the management and customization shown throughout this book. If you are implementing the Tivoli GEM APM Extension, a working knowledge of GEM is required as well. Where this knowledge is helpful, we have referenced the appropriate documentation where you can find more detailed information on the topic. This publication discusses our experiences working with Tivoli, the Tivoli Manager for Domino, Tivoli GEM, Lotus Domino Server Releases 4.5 and 4.6, and Lotus Notes Workstation Releases 4.1, 4.5 and 4.6 software.

Note

Tivoli is transitioning to a new naming convention. A new brand name, Tivoli, is replacing the TME 10 brand name. Some product names will be changing as well. Any new product releases or published documentation will follow this new naming convention. Although Version 1.5 of the TME 10 Module for Domino was released prior to the new naming convention going into effect, this redbook will be using the new product name, Tivoli Manager for Domino, and the new Tivoli brand name throughout the text of this book, to support the new naming convention.

In this chapter, we introduce the functions and features of the Tivoli Manager for Domino. Details of these functions and features are provided in later chapters. The Domino and Tivoli Enterprise environments we used to write this redbook are also described.

1.1 Overview of the Tivoli Manager for Domino

The Tivoli Manager for Domino allows for the management of Domino/Notes environments by providing the following functionality:

- Security enhancements
- Task administration
- Availability management
- Automated Notes client installation and upgrade
- User management provided with the Admin Extension for Tivoli Manager for Domino
- Electronic mail business system and Domino server component management with GEM provided with the Tivoli GEM APM Extension for Tivoli Manager for Domino

Since the Tivoli Manager for Domino utilizes the Tivoli Framework and Tivoli's other core applications, the functionality the module provides is fully customizable and extendable.

1.1.1 Security Enhancements

Each Notes domain is configured within a Tivoli Management Region (TMR) as its own policy region. In addition, two resource roles are created for each configured Notes domain. Giving a Tivoli administrator one or both of these resource roles in a particular policy region authorizes the administrator to perform certain Notes tasks.

1.1.2 Task Administration

The Tivoli Manager for Domino provides tasks and jobs for configuring, operating and maintaining Notes servers and users. In the Tivoli Enterprise environment, the term task refers to a defined action which is executed against a given group of managed nodes. A job refers to a resource consisting of a task and its predefined execution parameters, which includes the group of managed nodes against which the task will be executed. Jobs can be scheduled to run using the Scheduler. A task library is simply a container which a Tivoli administrator can create and store tasks and jobs. Here we will use the term *task* in a general sense to refer to Tivoli tasks or jobs.

The tasks in the Tivoli Manager for Domino are pre-organized into three task library categories, utilities, tasks, and user tasks. The task libraries contain both tasks and jobs.

Utilities This task library is made up of tasks used mostly for configuration and are seldom used once the initial configuration enabling the Tivoli Manager for Domino to manage a Notes installation is complete.

Tasks This task library contains common operational tasks that are used in the day-to-day administration and management of Notes servers.

User Tasks This task library contains common operational tasks that are used in the day-to-day administration and management of Notes users.

Table 1 presents each supported task.

Table 1. Tivoli Manager for Domino Supported Tasks

Tivoli Manager for Domino Supported Tasks	
Type of Task	Supported Tasks
Utilities Task Library	
Tivoli Configuration Tasks	Configure Event Server
	Configure TME 10 for a Notes Domain
	Configure and Deconfigure the Notes Admin Extension
	Enable and Disable a User Profile for Notes

Tivoli Manager for Domino Supported Tasks	
Notes Domain Policy Region Configuration Tasks	Configure Client Install
	Configure Client Upgrade
	Configure Event Console
	Configure Remote Console
	Configure TME 10 for a Server
	Create a New Client List
	Create a New Server List
Tasks Task Library	
Notes Server Tasks	Start and Stop the Notes Server
	Start and Stop the Notes Server Monitors
	Start and Stop the Notes Event Adapter
	Execute Remote Console Command for a Notes Server
	Show Notes Server Statistics
	Start the Notes Server's Client
User Tasks Task Library	
Notes User Tasks	Add Users to a Notes Domain
	Delete Users from a Notes Domain
	Get User Information from a Notes Domain
	Modify User Information in a Notes Domain
	Resend a Notes User ID
	Install Notes on a Notes Domain Client

1.1.3 Availability Management

Managing the availability of a Notes environment with the Tivoli Manager for Domino includes the following features:

Tivoli Event Adapter for Alert Monitoring

The Tivoli Manager for Domino provides a Notes add-in task in the form of an event adapter that monitors Notes alerts and translates them into Tivoli/Enterprise Console (TEC) events.

Tivoli Notes Monitor Collections

The Tivoli Manager for Domino supplies two customized monitor collections: Central and Remote monitor collections. These collections check such things as:

- Server availability
- Notes statistics
- Daemons, replicators, routers and add-in tasks are running

Proactive monitoring and automatic creation of different severity levels for TEC events is enabled through configurable thresholds and responses.

Event Filtering

The Tivoli Manager for Domino uses a configuration file to allow the administrator to filter selected events to prevent them from being forwarded to the event server rulebase for processing.

Tivoli Event Server Rulebase

The Tivoli event server rulebase provides intelligent event processing and correlation. The Tivoli Manager for Domino provides two rule sets to simplify and enhance Notes management:

1. The TEC adapter rule set captures and processes Notes events from the Tivoli Event Adapter and forwards them to the Tivoli Enterprise Console.
2. The Tivoli Distributed Monitoring rule set receives and processes information from the Notes Central and Remote monitor collections and forwards them to the Tivoli Enterprise Console.

These rule sets enable such features as automatic closing of harmless events, event correlation, and multi-region support.

1.1.4 Automated Notes Client Installation

Managing Domino/Notes with Tivoli Manager for Domino Version 1.5 he Tivoli Manager for Domino also provides automated Notes client installations and upgrades. Features included in the support are tasks for creating Notes client installation or upgrade file packages, administrator defined file pack organization, and preconfigured client distribution support.

1.1.5 User Management with the Admin Extension

If you have the Tivoli Manager for Domino Admin Extension installed, you can manage Notes users by distributing user profiles via profile managers to subscribers (Notes users). Included in the management of users through the Admin extension is adding/modifying/deleting user information from the Public Name and Address Books.

1.1.6 Business System Management with the Tivoli GEM APM Extension

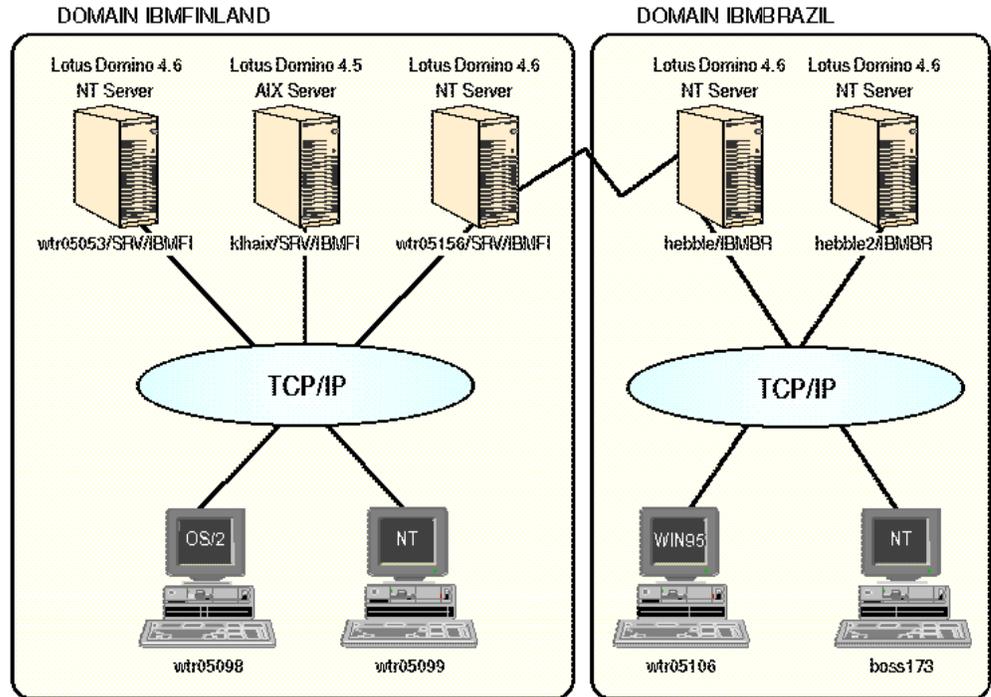
With the Tivoli GEM APM Extension, you can manage your Domino servers as a part of an electronic mail business system using Tivoli GEM. The Domino servers are discovered through heartbeat events, and are managed through monitoring and task administration. Connections between Domino servers are also discovered and graphically displayed.

1.2 ITSO Environment

In our ITSO environment, we have installed and set up the Tivoli Enterprise Environment (including Tivoli GEM), Tivoli Manager for Domino, Lotus Domino Server V4.5 and V4.6, and Notes workstations across multiple operating systems using the TCP/IP network protocol.

The systems and applications that were installed as a part of our environment are shown in Figure 1 and Figure 2 and detailed in the tables that follow the figures.

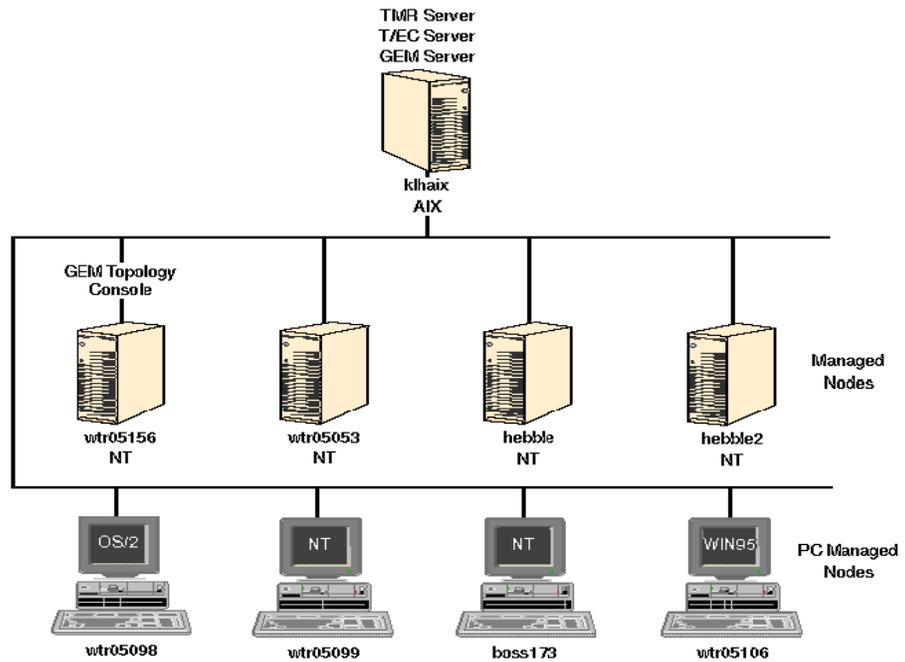
Domino Environment



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Figure 1. Our Domino Environment

Tivoli Environment



2104210405

Figure 2. Our Tivoli Enterprise environment

1.2.1 GEM/TMR/Domino Server

Platform: AIX V4.2
Hardware: IBM RS/6000-43p, 256MB RAM, 2 * 4.5 GB Hard Disk
Software: Lotus Domino Server V4.5
See Tivoli Enterprise software from Chapter 1.2.10, "Tivoli Product List by Managed Nodes" on page 8
Identity: klhaix
IP Address: 9.24.104.118

1.2.2 Domino Server

Platform: Windows NT V4.0
Hardware: IBM PS/2 Server 95, 80 MB RAM, 1 GB Hard Disk
Software: Lotus Domino Server V4.6
See Tivoli Enterprise software from Chapter 1.2.10, "Tivoli Product List by Managed Nodes" on page 8
Patches: Service Pack 3
Identity: hebble2
IP Address: 9.24.104.94

1.2.3 Domino Server

Platform: Windows NT V4.0
Hardware: IBM PC 6589-13U, 64 MB RAM, 2.4 GB Hard Disk
Software: Lotus Domino Server V4.6
See Tivoli Enterprise software from Chapter 1.2.10, "Tivoli Product List by Managed Nodes" on page 8
Patches: Service Pack 3
Identity: hebble
IP Address: 9.24.104.86

1.2.4 Domino Server

Platform: Windows NT V4.0
Hardware: IBM PC 6589-13U, 64 MB RAM, 2.4 GB Hard Disk
Software: Lotus Domino Server V4.6
See Tivoli Enterprise software from Chapter 1.2.10, "Tivoli Product List by Managed Nodes" on page 8
Patches: Service Pack 3
Identity: wtr05053
IP Address: 9.24.104.40

1.2.5 Domino Server

Platform: Windows NT V4.0
Hardware: IBM PC 6589-12U, 64 MB RAM, 1.6 GB Hard Disk

Software: Lotus Domino Server V4.6
See Tivoli Enterprise software from Chapter 1.2.10, "Tivoli Product List by Managed Nodes" on page 8

Patches: Service Pack 3

Identity: wtr05156

IP Address: 9.24.104.104

1.2.6 OS/2 Client

Platform: OS/2 Warp V4.0

Hardware: IBM PS/2 Server 95, 80 MB RAM, 1 GB Hard Disk

Software: Lotus Notes Client V4.6
TME OS/2 Agent 4.007

Identity: wtr05098

IP Address: 9.24.104.193

1.2.7 Windows 95 Client

Platform: Windows 95

Hardware: IBM ThinkPad 755 CDV Pentium, 40 MB RAM, 770 MB Hard Disk

Software: Lotus Notes Client V4.1
TME Windows 95 Agent 4.007

Identity: wtr05106

IP Address: 9.24.104.71

1.2.8 Windows NT Client

Platform: Windows NT 4.0

Hardware: IBM PS/VP P60D, 64 MB RAM, 770 MB Hard Disk

Software: Lotus Notes Client V4.6
TME Windows NT Agent 4.007

Identity: boss173

IP Address: 9.24.104.173

1.2.9 Windows NT Client

Platform: Windows NT 4.0

Hardware: IBM PS/VP P60D, 64 MB RAM, 770 MB Hard Disk

Software: Lotus Notes Client V4.6
TME Windows NT Agent 4.007

Identity: wtr05309

IP Address: 9.24.104.173

1.2.10 Tivoli Product List by Managed Nodes

Table 2. Tivoli Product List by Managed Nodes

Product List / Managed Nodes	klhaix	hebble	hebble2	wtr05156	wtr05053
Tivoli Framework	X	X	X	X	X
Tivoli GEM Topology Console 2.1.0	X				
Tivoli GEM Event Enablement 2.1.0	X				
Tivoli GEM Topology Server 2.1.0	X			X	
Tivoli User Administration 3.1	X	X	X	X	X
Tivoli Software Distribution Release 3.1	X	X	X	X	X
Tivoli Software Distribution Release 3.1 CLI Utilities for Windows	X	X	X	X	X
Tivoli Distributed Monitoring NT Monitors	X				
Admin Extension for Tivoli Manager for Domino 1.5	X	X	X	X	X
Tivoli Manager for Domino 1.5	X	X	X	X	X
Tivoli Enterprise Console 3.1 Rule Builder	X				
Tivoli Distributed Monitoring 3.5	X	X	X	X	X
Tivoli Enterprise Console 3.1	X				
Tivoli Enterprise Console 3.1 Server	X				
Tivoli Distributed Monitoring Universal Monitors	X				
Tivoli Distributed Monitoring Unix Monitors	X				
Tivoli - GEM APM Extension for TME10 Module for Domino 1.5	X	X	X	X	X
Tivoli Platform Patch 3.2-TMF-0004	X				
Tivoli Framework Patch 3.2-TMF-0006	X	X	X	X	X
Distributed Monitoring 3.5 Patch 3.5-SEN-0005	X	X	X	X	X
Tivoli User Administration 3.1.2 Upgrade	X	X	X	X	X

1.2.11 Tivoli Product List by PC Managed Nodes

Table 3. Tivoli Product List by PC Managed Nodes

Product List / PC Managed Nodes	wtr05098	wtr05099	wtr05106	boss173	
Tivoli Framework, PC Agent 5.000	X	X	X	X	

Chapter 2. Installation and Configuration

Before you can begin to manage your Domino/Notes environment, there are a number of installation and customization tasks that you must perform. A roadmap for setting up the Tivoli Manager for Domino is outlined below:

- Matching the hardware and software requirements
- Preparing the Domino/Notes environment
- Preparing the TME environment
- Installing the Tivoli Manager for Domino
- Configuring the event server
(Only required if you have TEC installed.)
- Configuring Tivoli for a Notes domain
- Configuring the administrator's resource roles
- Configuring Tivoli for a Notes domain server
- Configuring event consoles
(Only required if you have TEC installed.)
- Configuring a remote console.
(Only required if you wish to execute remote commands to the Notes server.)
- Configuring client install/upgrade for a Notes domain server
(Only required if you wish to remotely install or upgrade Notes clients.)
- Installing the Admin Extension for the Tivoli Manager for Domino.
(Only required if you have Tivoli User Administration and wish to add Notes-related information to users using Tivoli User Administration.)
- Configuring a user profile for Notes
(Only required if you have installed the Admin Extension and wish to add Notes-related information to users using Tivoli User Administration.)
- Installing the GEM APM Extension for the Tivoli Manager for Domino.
(Only required if you have Tivoli GEM and wish to graphically manage your Notes environment as a part of a business system).

2.1 Tivoli Manager for Domino Requirements

In the following sections the requirements available when we wrote this redbook are described. Please read the *Tivoli Manager for Domino Release Notes* for more detailed and up-to-date information.

2.1.1 Hardware Requirements

For all systems requiring the module installation (TMR servers, TMR event servers and Domino servers), you will need 10 MB of disk space and 1 MB of memory in addition to the space requirements for the management platform and the Domino server.

You will need additional disk space if you will be building Notes clients file packages. See Chapter 6, “Notes Client Installation, Configuration, and Upgrade” on page 145 for more information.

2.1.2 Software Requirements

The following Lotus Notes and Domino releases are supported:

- Notes 4.1
- Domino Powered by Notes 4.5, 4.5.1, 4.5.2, 4.5.3
- Domino 4.6

We generically refer to these servers, regardless of the version, as Domino servers throughout this book.

2.1.2.1 Platform Requirements

To install the base Tivoli Manager for Domino without the optional Admin and GEM APM Extensions you need:

- Tivoli Management Platform Version 3.0 Service Pack1, Tivoli Framework Version 3.1 with Patch 3.1-TMP-0007, or Tivoli Framework Version 3.2
- Tivoli/Sentry Version 3.0.1 or 3.0.2 or Tivoli Distributed Monitoring Version 3.5.
- Tivoli Software Distribution Version 3.1 (if you wish to use the Notes client installation or upgrade functionality)
- Tivoli/Enterprise Console Version 2.6 or 3.1 (if you wish to receive TEC events)

To install the Tivoli Manager for Domino and the Admin Extension you also need:

- Tivoli User Administration Version 3.1.2 (Version 3.1.1 is also supported, but 3.1.2 is highly recommended.)

To use the GEM APM Extension for Module for Domino you need a GEM environment installed with the following components:

- GEM Event Automation Services 1.1 or GEM Event Enablement 2.0
- GEM APM Server 1.1 or 2.0
- GEM APM Client 1.1 or 2.0

Due to a later general availability date, Tivoli GEM 2.1 was not tested with this version of the Tivoli Manager for Domino. However, we used GEM 2.1 in our environment, which required the following components:

- GEM Event Enablement 2.1
- GEM Topology Server 2.1
- GEM Topology Console 2.1

Note that not all of the above applications are required to manage a Domino/Notes environment, but to get the full functionality of the Tivoli Manager for Domino, they are recommended.

2.1.2.2 Supported Operating Systems

Supported operating systems for the Tivoli Manager for Domino, whether it be installed on a TMR server, TMR event server, or a Domino server, are:

- AIX 4.1.3, 4.1.4 and 4.2 (only in IBM machines)
- HP-UX 10 (10.10, 10.2)
- Solaris 2.5 for SPARC
- Solaris 2.5 for ULTRA
- Windows NT 4.0 Service Pack 1
- Windows NT 3.5.1 Service Pack 4

If the GEM APM Extension for the Tivoli Manager for Domino will be installed, the following operating systems are supported for the TMR server or Domino servers:

- AIX 4.1.3, 4.1.4, 4.2
- Windows NT 4.0 Service Pack 1

2.2 Preparing the TME and Domino/Notes Environment

Before the installation of the Tivoli Manager for Domino you need to prepare both the Domino/Notes and the Tivoli environments.

2.2.1 Preparing the Domino/Notes Environment

The Domino server must already be installed. You can find the setup instructions for the Domino environment in the appropriate Domino server version's install guide.

The following additional actions are required to prepare your Domino server for the Tivoli Manager for Domino installation:

- The Tivoli Manager for Domino uses the Event and Reporter Notes add-in tasks and their events4.nsf and statrep.nsf databases. The Event task collects and processes Notes server events. The Reporter task generates statistical reports and alarms. You have to load, at least once, both add-ins from the Domino server console that creates the databases (see Figure 3).

```

> load Event
> 03/27/97 11:01:21 AM Event Dispatcher started
03/27/97 11:01:21 AM Event: Creating the Statistics & Events database.
03/27/97 11:01:24 AM Event: Copying messages into the Statistics & Events
database
03/27/97 11:01:44 AM Event: Copying '($Servers)' view notes into the
Statistics & Events database.
03/27/97 11:01:44 AM Event: Copying '($Thresholds)' view notes into the
Statistics & Events database.
03/27/97 11:01:45 AM Event: Copying '($Events)' view notes into the Statistics
& Events database.
03/27/97 11:01:46 AM Event: Copying '($ACLMonitors)' view notes into the
Statistics & Events database.
03/27/97 11:01:47 AM Event: Copying '($ReplMonitors)' view notes into the
Statistics & Events database.

> load Report
> 03/27/97 11:02:14 AM Reporter started

```

Figure 3. Loading Event and Reporter Add-Ins

Note that the command to load the Reporter add-in task is Load Report (not Load Reporter).

You can also add the Event and Reporter add-in tasks to the ServerTasks line in the notes.ini file (see Figure 4), which will start the add-in tasks every time the Notes server is started. However, this is not necessary because the task of configuring Tivoli for a Notes domain server (2.4.8, “Configuring Tivoli for a Notes Domain Server” on page 29) does this automatically for you. You only have to ensure that the events4.nsf and stratrep.nsf databases have been created. In Domino Server Version 4.6, the Event and Reporter tasks are loaded by default and the events4.nsf and stratrep.nsf databases are created the first time the server is started.

```
ServerTasks=Billing,Replica,Router,Update,Stats,AMgr,Adminp,Sched,CalConn,Event,Report
```

Figure 4. ServerTasks Line in the notes.ini File

2.2.1.1 AIX Platform

For the AIX platform you should do the following:

- We recommend you add the following line in the server notes.ini file:

```
Notes_ISOLATION=1
```

This will isolate the Domino server's shared memory and semaphores from the Notes client(s) running on the same machine.

- You should add the lines shown in Figure 5 to the profile of the user that runs the Domino server, and/or to the Domino server startup script if you have one:

```
#
# Sets up the Tivoli Environment
#
if [[ -x /etc/Tivoli/setup_env.sh ]]
then
  . /etc/Tivoli/setup_env.sh
fi
export LIBPATH=/opt/lotus/notes/latest/ibmpow:$LIBPATH

#
# Sets up the PATH for running Domino
#
export PATH=/opt/lotus/bin:~/notesr4:$PATH
```

Figure 5. Lines to Add to a Notes Startup Script

Notes:

1. This script uses the korn shell syntax.
2. This was written for the AIX environment. In other UNIX platforms the LIBPATH variable may have a different name, for example, LD_LIBRARY_PATH.
3. The directory /opt/lotus/notes/latest/ibmpow reflects the default location for the AIX systems. When the task configuring Tivoli for a Notes domain server (2.4.8, “Configuring Tivoli for a Notes Domain Server” on page 29) is finished, the correct PATH is shown.

2.2.1.2 NT Platform

If you want to be able to start the Domino server from Tivoli (see 3.2.4, “Starting a Notes Server” on page 53), it should be running as an NT service. If you did not select the Notes Service Install option when you installed the Domino server, you will need to run the Notes setup again.

To see if the Domino server is running as a service, double-click on the **Services** icon from the control panel of your Windows NT system, and search for a Lotus Domino Server service (Figure 6).

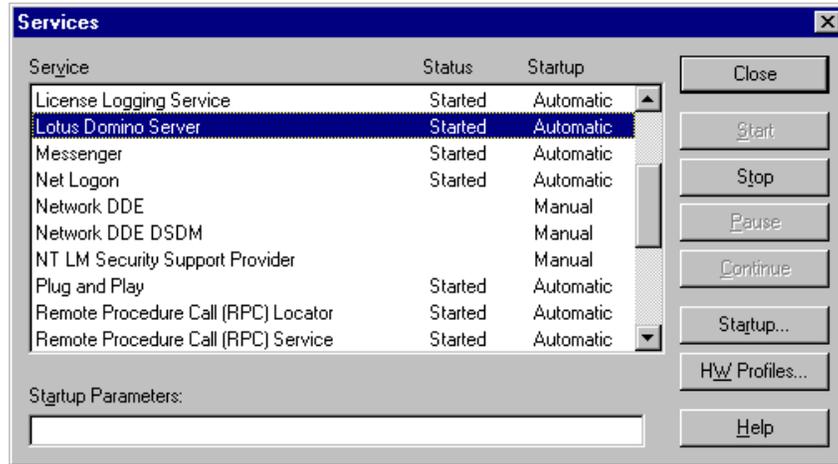


Figure 6. NT Services

To install the Domino server NT service:

1. Run the Notes installation program.
2. Accept the defaults until the Install Options dialog (Figure 7):

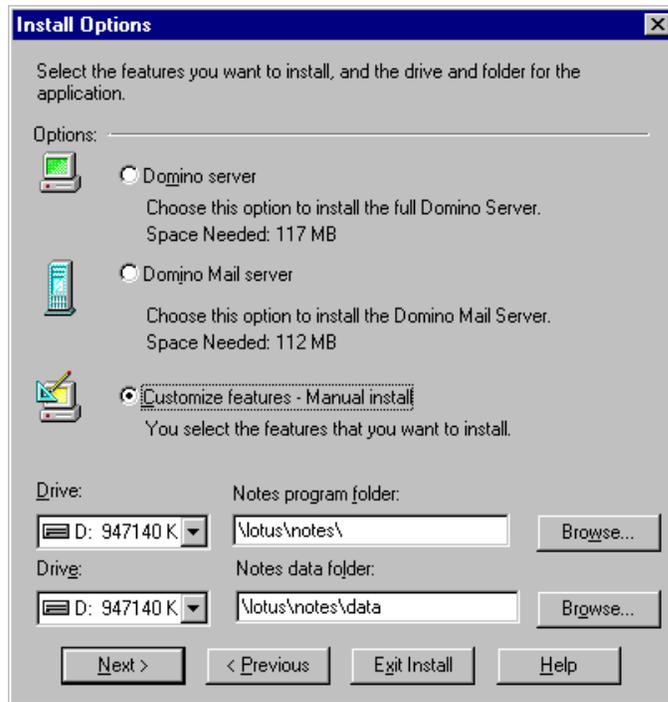


Figure 7. Installing Lotus Notes: Install Options

3. Choose Customize features - Manual install and click on **Next**.
4. In the Customize dialog (Figure 8), select the Notes Service Install feature. No other features are required if you have already installed the Domino server.

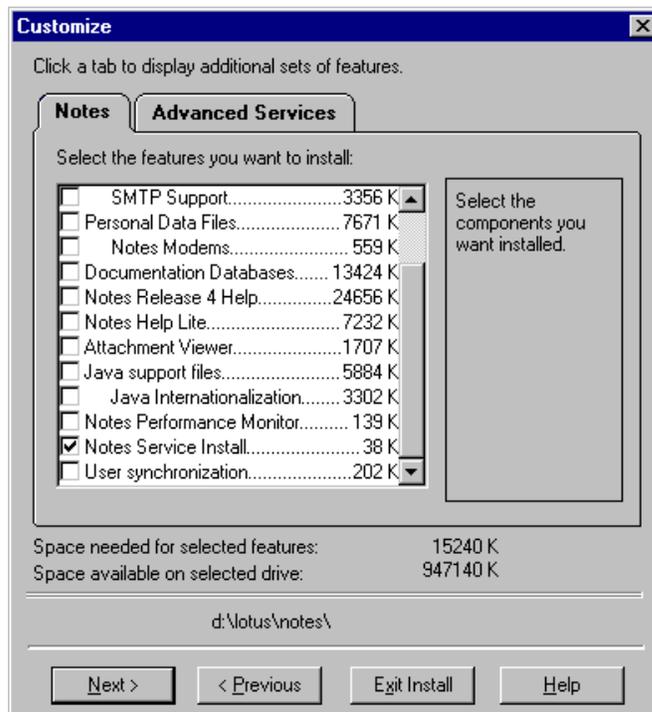


Figure 8. Installing Lotus Notes: Customize

5. Continue and finish the installation.

Note: To remove the service or add it again you can use the program NTSVINST.EXE. It is in your Notes directory if you have installed the NT service option. Use NTSVINST -D to remove the Notes service and NTSVINST -C to create it.

Attention

With Domino Server 4.6 on Windows NT, the server name defaults to your fully qualified tcp/ip host name. You must edit this server name during the Domino server setup and rename the server name so that it does not contain any periods (host name, without the domain name). The Configure TME 10 for a DomainAlias Server task will not accept periods in the Domino server name field.

2.2.2 Preparing the TME Environment

To install the Tivoli Manager for Domino you have to ensure that all prerequisite Tivoli Enterprise software is already installed (see 2.1.2.1, "Platform Requirements" on page 10). You can find the setup instructions for the Tivoli environment in the *TME 10 Framework Planning and Installation Guide* and in the other core applications' user's guides.

You need to create event consoles for the administrators that will manage the Domino events. The event consoles will be needed in order to run the task configuring an event console. To create an event console:

1. Select **Create -> Event Console...** on the desktop menu.
2. In the Create Event Console dialog (Figure 9), select the host name to run the console, and then click on **Create**.

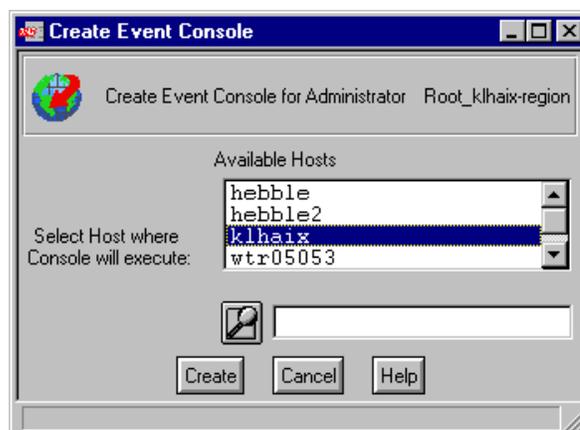


Figure 9. Create Event Console

Note: See *TME 10 Enterprise Console User's Guide* for more information about creating event consoles.

Before installing any TME application you should back up the TMR. To back up the TMR:

1. Select **Desktop -> Backup...** from the Tivoli desktop menu.
2. In the Backup Tivoli Management Region dialog (Figure 10):
 1. Select the nodes you want to back up from the Available Managed Nodes scrolling list.
 2. Enter the node and the path to store the backup.
 3. Click on **Start Backup** to back up the TMR.

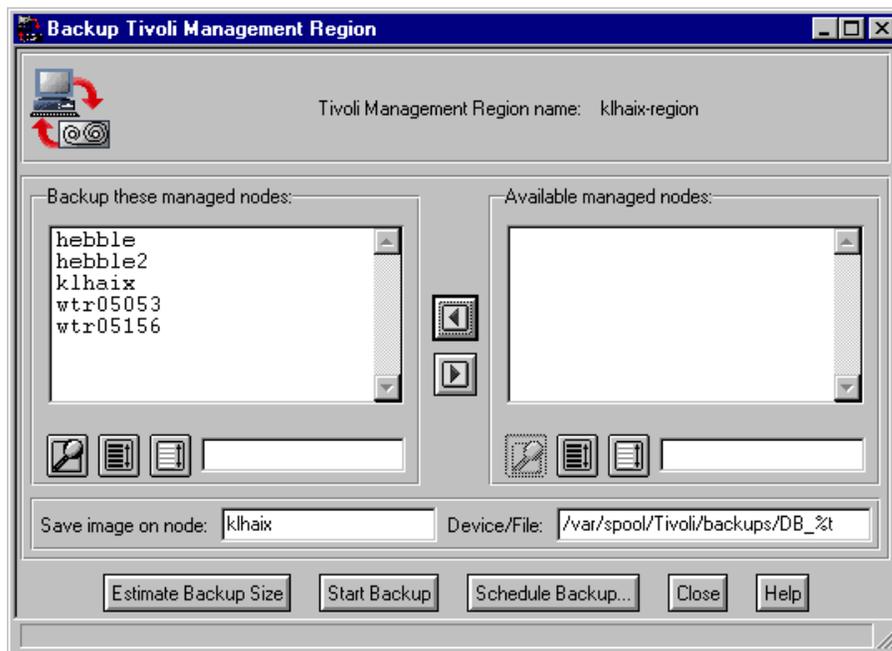


Figure 10. Backup Tivoli Management Region

After these steps you are ready to install the Tivoli Manager for Domino.

2.3 Module Installation

The Tivoli Manager for Domino must be installed on each Domino server, TMR server and event server. To perform this task you need the install role on the Tivoli desktop context.

The following sections describe the Tivoli Manager for Domino and the Admin Extension for the Tivoli Manager for Domino installation. The installation of the GEM APM Extension for the Tivoli Manager for Domino is covered in Chapter 7, “Using GEM to Manage Your Domino Servers” on page 173. In section “Installation and Configuration Troubleshooting and Tips” on page 41, we have documented some problems that we encountered during the setup of the Tivoli Manager for Domino and how we resolved them. You may want to review that section before installing and configuring the module, or you may want to use it as a reference if you encounter problems during the process.

2.3.1 Installing the Tivoli Manager for Domino

To install the Tivoli Manager for Domino use the following steps:

1. Select **Desktop -> Install -> Install Product...** from the Tivoli desktop.

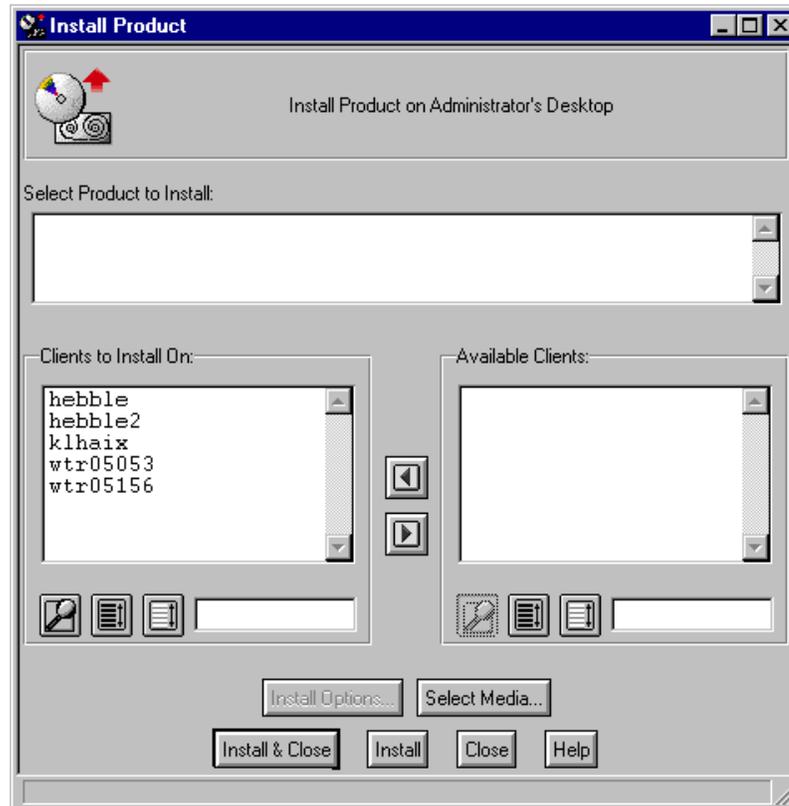


Figure 11. Install Product

2. In the Install Product dialog (Figure 11), click on **Select Media....**

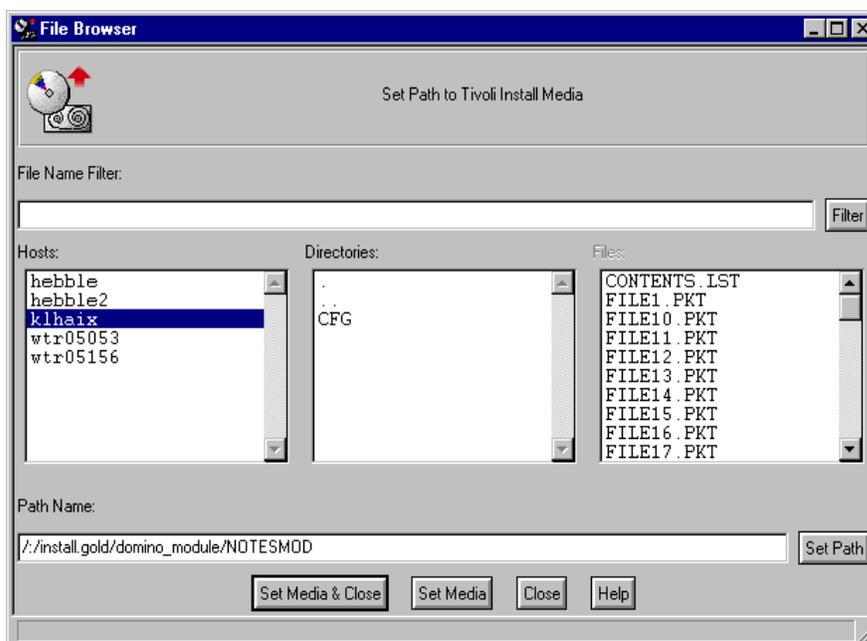


Figure 12. File Browser

3. In the File Browser dialog (Figure 12 on page 18) select the path to the Tivoli Manager for Domino code and select **Set Media & Close**.

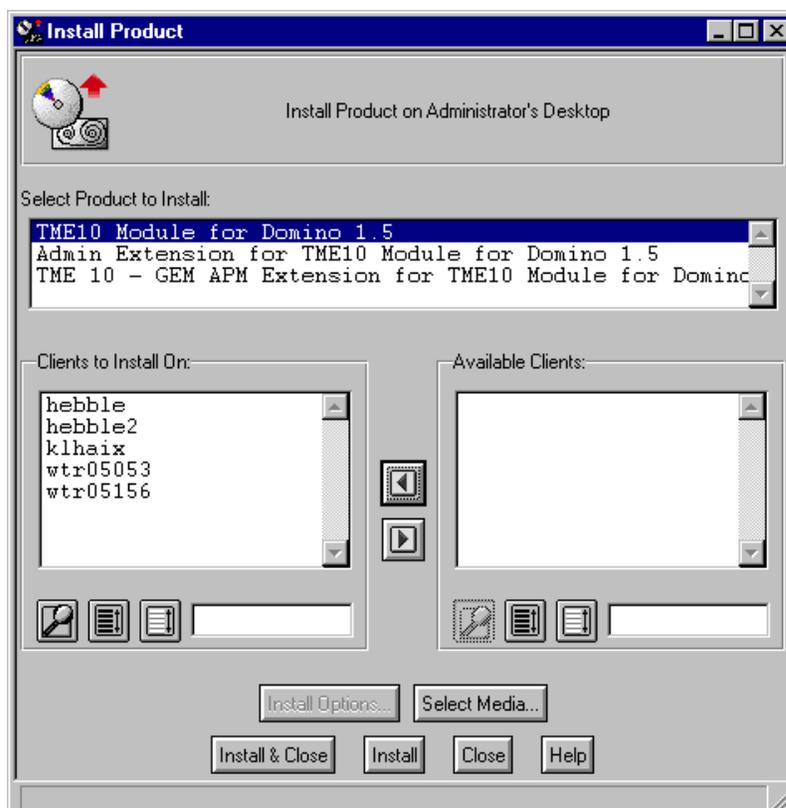


Figure 13. Install Product

4. Back at the Install Product dialog (Figure 13):
 1. Select the Tivoli Manager for Domino product from the Select Product to Install list.
 2. Select the clients to install from the Available Clients list. You must select each Domino server, the TMR server and the TMR event (TEC) server.
 3. Click on **Install & Close**.
5. In the Product Install dialog click on **Continue Install** to complete the Tivoli Manager for Domino installation.
6. After you have finished the installation click on **Close**.

The Tivoli desktop now displays a new icon, the Module for Notes policy region (Figure 14).

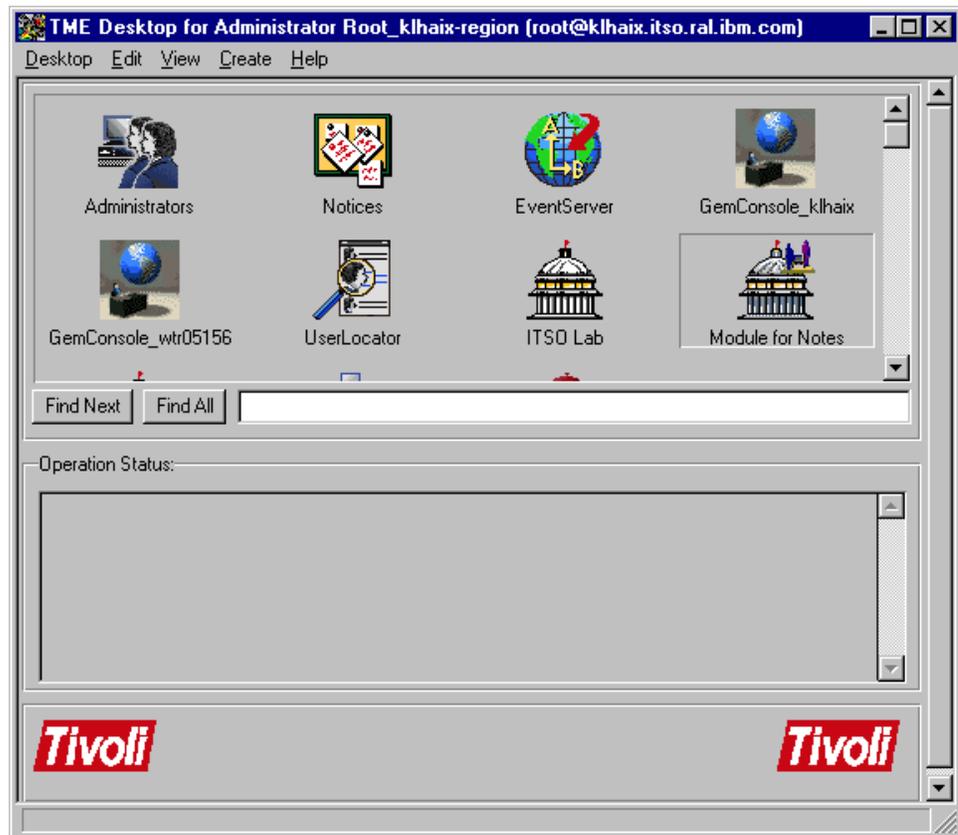


Figure 14. Tivoli Desktop with Module for Notes Policy Region

2.3.2 Installing the Admin Extension for the Tivoli Manager for Domino

The installation of the Admin Extension for the Tivoli Manager for Domino is almost the same as the installation of the module itself. It requires that you already have installed a supported version of Tivoli User Administration Version (3.1.1 or 3.1.2). The Admin Extension for Tivoli Manager for Domino must be installed on each Domino server and TMR server.

To install the Admin Extension, follow the steps described in 2.3.1, “Installing the Tivoli Manager for Domino” on page 17, selecting Admin Extension for Tivoli Manager for Domino as the product to install.

2.4 Configuring the Tivoli and Domino/Notes Environment

To enable the management functions of the Tivoli Manager for Domino, you need to perform certain configuration tasks for the module, the Tivoli environment and the Domino/Notes environment. These tasks can be classified as:

Domain-level tasks

Related to the Notes domain. Usually performed once per Notes domain.

Server-level tasks

Related to the Domino servers. Usually performed once per Domino server.

Note: In this chapter, the word *task* does not necessarily mean a Tivoli Framework task. It is used in a general sense, and could be an actual Tivoli Framework task, a Tivoli Framework job, or a list of procedures.

The configuration tasks are:

Required domain-level tasks:

- **Configuring the event server**
Prepares the event server to receive the Tivoli Manager for Domino events. Execute once for each Tivoli Enterprise Console server.
- **Configuring TME 10 for a Notes domain**
Creates and populates a policy region for the specified Notes domain. Execute once for each Notes domain.
- **Configuring administrators' resource roles**
Execution of the previous task includes the creation of resource roles for a Notes domain. Execute once for every administrator that needs authorization for managing a Notes domain.

Optional domain-level tasks:

- **Configuring the Admin Extension**
Adds Notes-specific components to Tivoli User Administration user profiles. Use as needed.
- **Enabling a user profile for Notes**
Enables the distribution of the Notes-specific components in a user profile. Use as needed.
- **Disabling a user profile for Notes**
Disables the distribution of the Notes-specific components in a user profile. Use as needed.
- **Deconfiguring Admin Extension**
Removes the Notes-specific components from Tivoli User Administration user profiles. Use as needed.

Required server-level tasks:

- Configuring TME 10 for a Notes domain server
Configures the Domino server for use with Tivoli. Execute once for each Notes server in a Notes domain.
- Configuring an event console
Adds filters to an event console and assigns event groups. Execute once for each event console and for each Notes domain.

Optional server-level tasks:

- Configuring a remote console
Reconfigures a Notes remote console that runs from the Tivoli desktop. Execute each time you change the Domino server password, the Tivoli communication port, or the Domino server UNIX user ID and group ID.
- Configuring client install/upgrade for a Notes domain server
Builds the file packages for installing/upgrading a Notes client with Tivoli Software Distribution. Execute once for each client platform you need.

2.4.1 Configuring the Event Server

This task prepares the event servers to receive events created by the Tivoli Manager for Domino. It is executed from within the Tivoli Manager for Domino policy region and requires a senior administrative role. The task is executed once for each Tivoli Enterprise Console server.

This task does the following:

- Imports new classes and rules into the event server. You can create a new rule base or you can modify an existing one.
- Installs new event sources.
- Installs special scripts.
- Compiles the new rule base.
- Stops and starts the event server.

Use the following steps to configure an event server:

1. From the Tivoli desktop open the **Module for Notes** policy region (Figure 15).

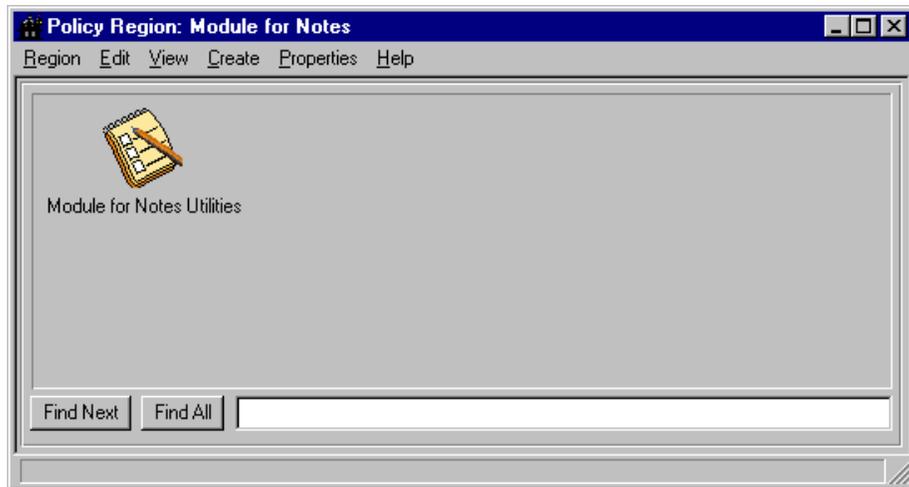


Figure 15. Policy Region: Module for Notes

2. Open the **Module for Notes Utilities** task library (Figure 16).

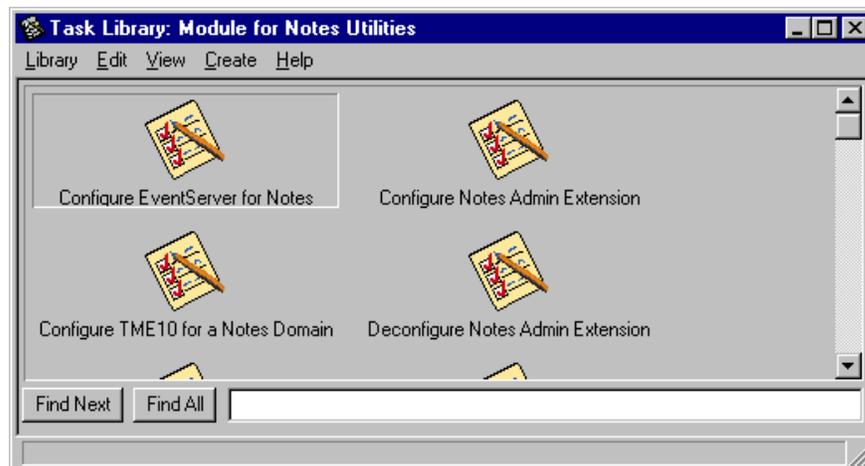


Figure 16. Task Library: Module for Notes Utilities

3. Double-click on the **Configure Event Server for Notes** job icon.
4. From the Configure Event Server for Notes dialog (Figure 17):
 1. In the New (or existing) Rule Base name field, enter a name for the new or existing rule base. You should not modify the default rule base, so do not enter Default in this field.
 2. In the Rule Base to clone (if new) field, enter a rule base name to clone if you are creating a new rule base. If you are updating an existing one, leave this field blank.
 3. In the Path for new Rule Base (if new) field, enter the path for the new rule base. If you are updating an existing one, leave this field blank.
 4. In the Managed Node to Forward Events (opt) field, enter the name of the managed node that runs an event server to which you want to forward the

events. This should be only used if you are building a hierarchy of event servers. If you have only one event server, leave this field blank.

5. Click on **Set and Execute**.

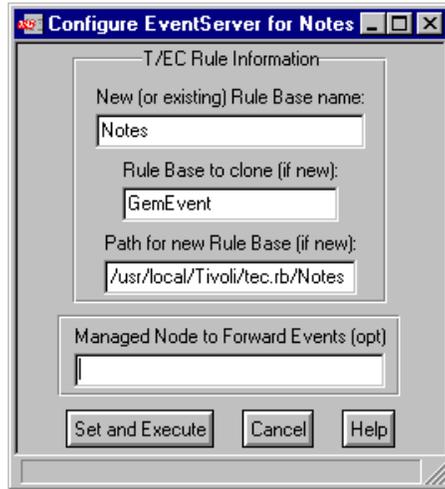


Figure 17. Configure Event Server for Notes

A dialog displays the output from this configuration task. Figure 18 is the output of running this job in our environment.

Note: You also will see a dialog informing you that the event server is being shut down.

```

#####
Task Name:Configure EventServer for Notes
Task Endpoint:klhaix (ManagedNode)
-----Standard Output-----
Status Msg: Configuring EventServer...
Status Msg: GemEvent exists!
Status Msg: Created /usr/local/Tivoli/tec.rb/Notes
Status Msg: WARNING: universal baroc classes have not been installed.
Status Msg: Automatically installing universal.baroc.
Status Msg: WARNING: tivoli baroc classes have not been installed.
Status Msg: Automatically installing tivoli.baroc.
Status Msg: Sentry3_5_Base class is already installed.
Status Msg: GemEvent compiles successfully!
Status Msg: Created Notes rulebase.
Status Msg: Copied GemEvent rulebase to Notes.
Status Msg: Notes compiles successfully!
Status Msg: Tivoli baroc classes are ok.
Status Msg: Imported /usr/local/Tivoli/bin/generic/SentryMonitors/tivoli.baroc to Notes
rulebase.
Status Msg: Imported /usr/local/Tivoli/bin/generic/SentryMonitors/universal.baroc to Notes
rulebase.
Status Msg: Imported /usr/local/Tivoli/bin/generic_unix/TME/Notes/baroc/notes_tecad.baroc to
Notes rulebase.
Status Msg: Imported
/usr/local/Tivoli/bin/generic_unix/TME/Notes/baroc/notes_server_monitor_35.baroc to Notes
rulebase.
Status Msg: Imported notes_tecad.rls to Notes rulebase.
Status Msg: Imported notes_monitor.rls to Notes rulebase.
Status Msg: Imported notes_default.rls to Notes rulebase.
Status Msg: Notes compiles successfully!
Status Msg: Created tecad_notes event source.
Status Msg: SENTRY event source already exists.
Status Msg: Loaded Notes rulebase.
Status Msg: Stopped Event Server.
The TME 10 Enterprise Console Server is initializing...
The TME 10 Enterprise Console Server is running.

Status Msg: Started Event Server.
-----Standard Error Output-----
#####

```

Figure 18. Output from the Configure Event Server for Notes Job

2.4.2 Configuring Tivoli for a Notes Domain

This task creates a policy region for a Notes domain and populates it with several objects. It is executed from within the Tivoli Manager for Domino policy region and requires a senior administrative role. The task must be executed once for each Notes domain.

This task does the following:

- Creates a DomainAlias policy region in the Module for Notes policy region.
- Creates and modifies profile managers, task libraries, tasks, jobs and monitors in the DomainAlias policy region.
- Creates two resource roles: DomainAlias_admin and DomainAlias_super.

Use the following steps to configure Tivoli for a Notes domain:

1. From the Tivoli desktop open the **Module for Notes** policy region (Figure 15 on page 22).
2. Open the **Module for Notes Utilities** task library (Figure 19).

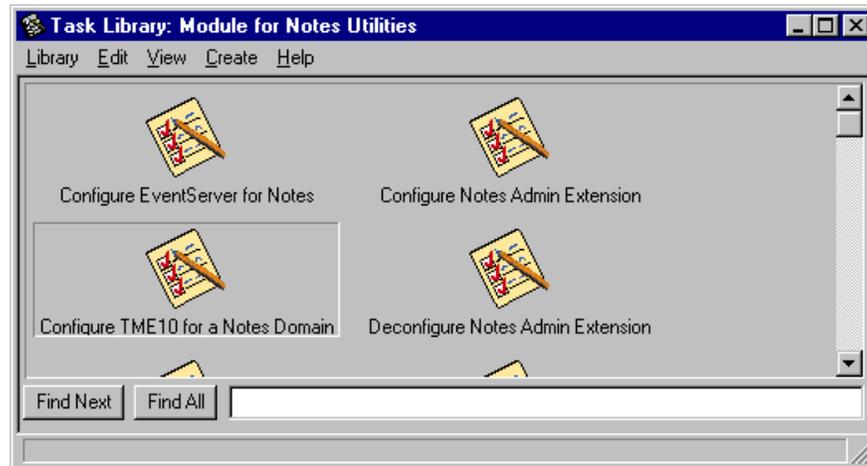


Figure 19. Task Library: Module for Notes Utilities

3. Double-click on the **Configure TME 10 for a Notes Domain** job icon.

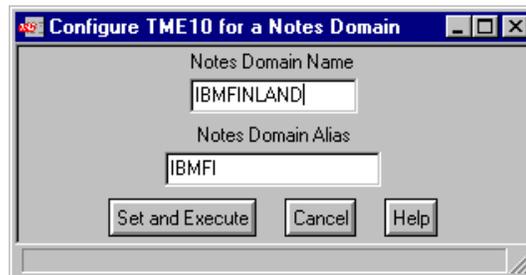


Figure 20. Configure TME 10 for a Notes Doman

4. In the Configure TME 10 for a Notes Domain dialog (Figure 20):
 1. Enter in the Notes Domain Name field the name of the Notes domain. Valid characters for a Notes domain name include letters, numbers, spaces and the symbols: ampersand (&), hyphen (-), period (.), underscore (_) and apostrophe (').
 2. In the Notes Domain Alias field, enter a domain alias name for this Notes domain. Tivoli uses this domain alias name for managing this Notes domain and requires that the name be unique across TMRs. A short name is recommended. Valid characters include letters, numbers and spaces. The default value is the Notes domain name, but if it contains invalid characters it will not be accepted.
 3. Click on **Set and Execute**.

A dialog displays the output from this configuration task. Figure 21 is the output of running this job in our environment against our IBMFINLAND Notes domain.

```
#####
Task Name:Configure TME10 for a Notes Domain
Task Endpoint:klhaix (ManagedNode)
-----Standard Output-----
Status Msg: Made /usr/local/Tivoli/bin/generic_unix/TME/Notes/IBMFI/ directories.
Status Msg: Created NotesDomain object: IBMFI
Status Msg: Created IBMFI policy region
Status Msg: Created IBMFI Notification Group
Status Msg: Created IBMFI_admin and IBMFI_super roles
Status Msg: Created IBMFI Server List
Status Msg: Created IBMFI Registration Server List
Status Msg: Created /usr/local/Tivoli/bin/generic_unix/TME/Notes/IBMFI files
Status Msg: Created /usr/local/Tivoli/bin/aix4-rl/TME/Notes/IBMFI files
Status Msg: Created IBMFI Tasks TaskLibrary
Status Msg: Created IBMFI User Tasks TaskLibrary
Status Msg: Created IBMFI Utilities TaskLibrary
Status Msg: Installed monitor collection
Status Msg: Created IBMFI Remote Monitors Monitors
Status Msg: Created IBMFI Tasks Tasks and Jobs
Status Msg: Created IBMFI User Tasks Tasks and Jobs
Status Msg: Created IBMFI Utilities Tasks and Jobs
Configure TME10 for IBMFI Complete!

Do not forget to assign the new IBMFI_admin and IBMFI_super roles
to the administrators who are going to configure and manage the IBMFI Domain.

-----Standard Error Output-----
#####
```

Figure 21. Output from the Configure TME 10 for a Notes Domain job

Note: This task can take a long time. The NT output dialog does not indicate progress. You will only see a message when the task is complete.

This task adds a sub-policy region in the Module for Notes policy region. Its icon label is what you specified in the Notes Domain Alias field. In our example, the icon label is IBMFI (Figure 22). We will generically refer to this Notes Domain as DomainAlias throughout the remainder of this chapter and redbook.

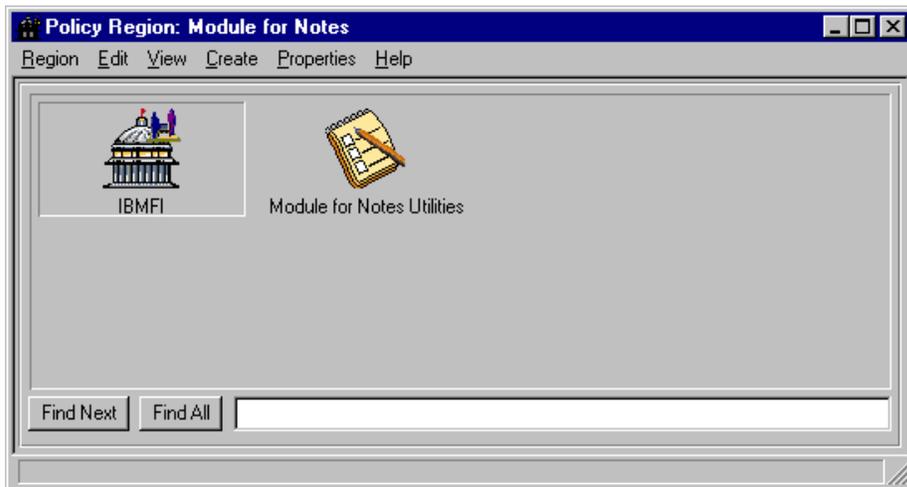


Figure 22. Policy Region: Module for Notes

2.4.3 Configuring the Administrator's Resource Roles

This task gives administrators authorization to manage a specific DomainAlias. It is executed from the administrator's desktop and requires a super administrative role. The task must be executed once for each administrator that requires access to manage a DomainAlias.

The configuring Tivoli for a Notes domain task (see 2.4.2, "Configuring Tivoli for a Notes Domain" on page 24) creates two resource roles named DomainAlias_admin and DomainAlias_super. The Tivoli Manager for Domino's Framework tasks require one of these resource roles and they should be assigned to a set of Tivoli administrators. An administrator with DomainAlias_super authority can also perform tasks that require DomainAlias_admin authority.

The tasks requiring the DomainAlias_super role are configuration or customization tasks, such as configuring Tivoli for a DomainAlias server, configuring the Notes domain remote console, configuring an event console, or configuring a Notes client installation.

The tasks requiring the DomainAlias_admin role are operational tasks, such as Notes server and user tasks.

As with other administrator authorization or resource roles, these roles are not cumulative, so you must assign both roles to an administrator if you wish he/she to have authority to execute both operational and configuration tasks.

Use the following steps to configure administrator resource roles.

1. Open the Administrators window from the Tivoli desktop. Select the desired administrator and from the pop-up menu select **Edit TMR Roles...** (Figure 23).



Figure 23. Edit TMR Roles

2. In the Set TMR Roles dialog (Figure 24), select DomainAlias_admin, DomainAlias_super, or both (as required) from the Available Roles list and transfer them to the Current Roles list.

Note that you will have a DomainAlias_admin and DomainAlias_super role for each Notes Domain that you have configured.

3. Click on **Change and Close**.

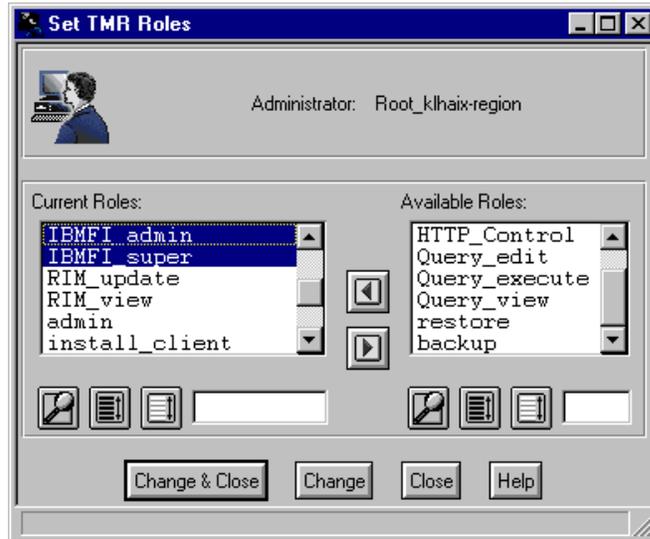


Figure 24. Set TMR Roles

4. Exit and restart the Tivoli desktop for the administrator you changed in order to activate the new set of resource roles.

2.4.4 Configuring the Admin Extension

This task adds Notes-specific components to all of the Tivoli User Administration user profiles. It is executed from within the Tivoli Manager for Domino policy region and requires super and DomainAlias_super administrative roles. This task should be executed as needed.

This task is described in Chapter 5, "User Management" on page 103.

2.4.5 Enabling a User Profile for Notes

This task enables the distribution of Notes-specific components in a user profile to specified subscribers. It is executed from within the Tivoli Manager for Domino policy region and requires super and DomainAlias_super administrative roles. This task should be executed as needed.

This task is described in Chapter 5, "User Management" on page 103.

2.4.6 Disabling a User Profile for Notes

This task disables the distribution of Notes-specific components in a user profile to specified subscribers. It is executed from within the Tivoli Manager for Domino policy region and requires Super and DomainAlias_Super administrative roles in the policy region that contains the user profile.

This task is described in Chapter 5, "User Management" on page 103.

2.4.7 Deconfiguring the Admin Extension

This task removes the Notes-specific components from all user profiles of the Tivoli User Administration product. It is executed from within the Tivoli Manager for Domino policy region and requires Super and DomainAlias_Super administrative roles.

This task is described in Chapter 5, “User Management” on page 103.

2.4.8 Configuring Tivoli for a Notes Domain Server

This task configures the Domino server to allow management by Tivoli. It needs to be executed once for each Domino server in each DomainAlias policy region and requires the DomainAlias_super administrative role.

This task does the following:

- Creates a server object and an icon for it on the Tivoli desktop.
- Updates the notes.ini file on the Domino server machine, adding the Event Reporter, tivaddin, and tecad_notes add-in server tasks. The original notes.ini file is saved as notes.ini.tiv *TimeStamp*. The Event task collects and processes Domino server events. The Reporter task generates statistical reports and alarms. The tivaddin task allows the Tivoli Manager for Domino and the Domino server to communicate, and the tecad_notes add-in task forwards Domino server events to the TEC server.
- Installs the tecad_notes and tivaddin add-in tasks in the Domino server.
- Creates the file \$DBDIR/notes_DomainAlias.env in the Domino server machine. This file contains information about the Domino installation directory, the Domino server directory and the location of the notes.ini. This file is used by Tivoli for management.
- Saves an encrypted password in the notes.ini file and in the Tivoli database on the TMR server. This is not the Domino server password; it is used by Tivoli to ensure that only authorized users can access the Domino server.
- Saves the server ID password in the Tivoli database. The start server task uses this password.
- Saves the server name and its version in the Tivoli database.
- Adds an event destination notification method of tecad_notes in the Notes server.
- Adds event monitoring source documents in the Domino server for each Notes event type, if they do not already exist, with tecad_notes as the event notification method for all severities. If these event monitoring source documents already exist, you must update them manually to add tecad_notes as an event notification method. (See “Event Filtering at the Notes Server” on page 70 for assistance.)
- Adds the server ID to the list of Domino server's administrators on the Domino server.
- Adds the Domino server to the DomainAlias server list.
- Adds the Domino server to the DomainAlias registration server list, if specified.

Note: This is only a configuration task; it does *not* start or distribute any monitors.

Before executing this task make sure that:

1. You have completed the actions outlined in 2.2.1, “Preparing the Domino/Notes Environment” on page 11.
2. Your Notes server is not running.
3. See Chapter 2.5, “Installation and Configuration Troubleshooting and Tips” on page 41 if you are executing this task for a Windows NT DomainAlias server.

Use the following steps to configure a DomainAlias server:

1. From the Module for Notes policy region, open the **DomainAlias** policy region.
2. From the DomainAlias policy region, open the **DomainAlias Utilities** task library (Figure 25).

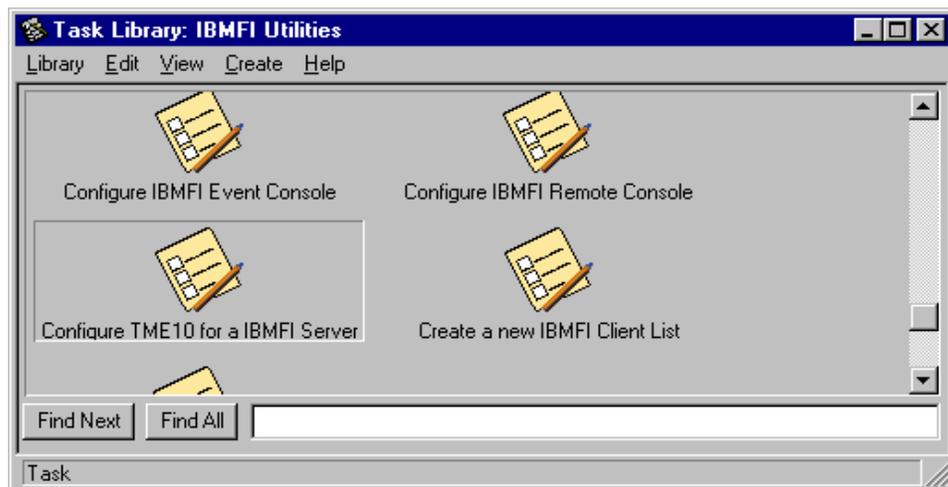


Figure 25. Task Library: DomainAlias Utilities

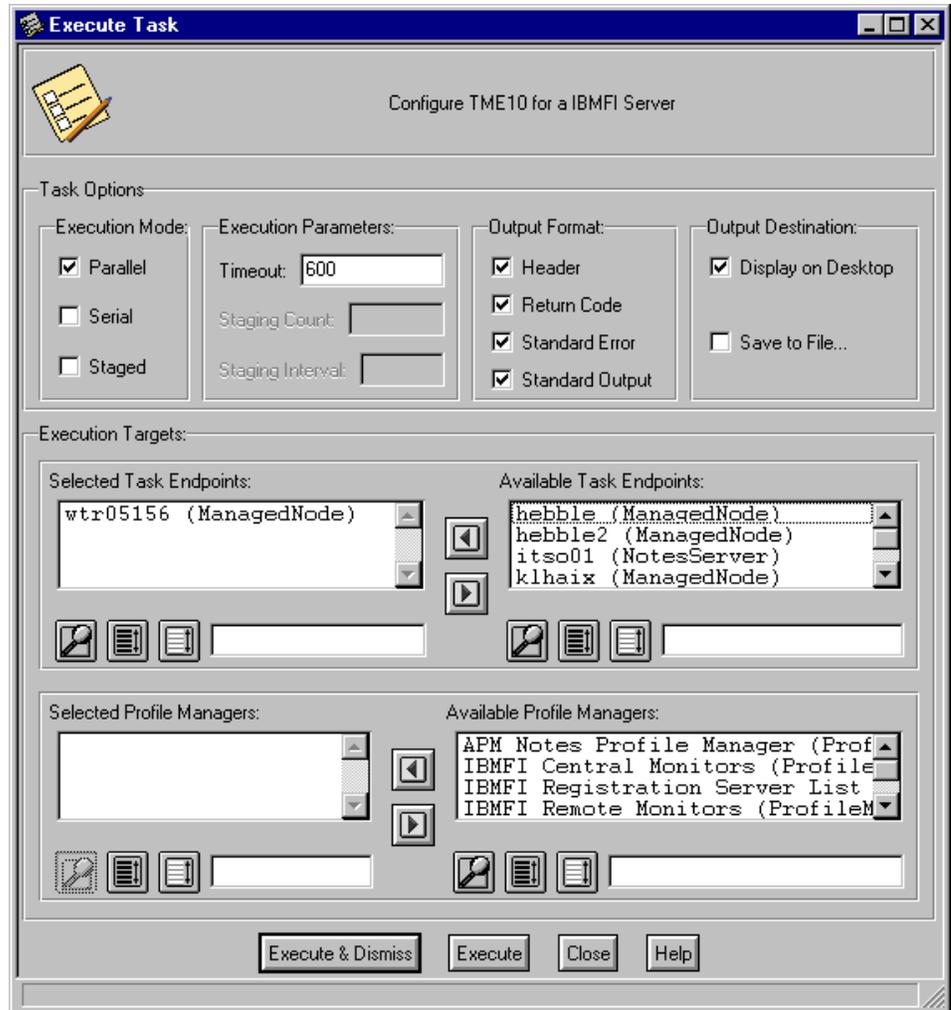


Figure 26. Execute Task: Configure TME10 for a DomainAlias Server

3. In the Execute Task dialog (Figure 26) select the appropriate options and after that click on **Execute & Dismiss**.

Execution Mode

Since you can configure only one server at a time, the mode selected does not matter.

Execution Parameters

This task could take longer than the default value of one minute. A timeout period of 600 seconds would certainly be sufficient.

Output Format

You can choose the type of output for the task you want to see. Selecting all of them will assist you in searching for errors.

Output Destination

Choose the most appropriate for you.

Execution Targets

Select the managed node you wish to configure from the Available Task Endpoints list box. Select only one. Do not select any Profile

Managers, since you only want this task to run against the selected Domino server.

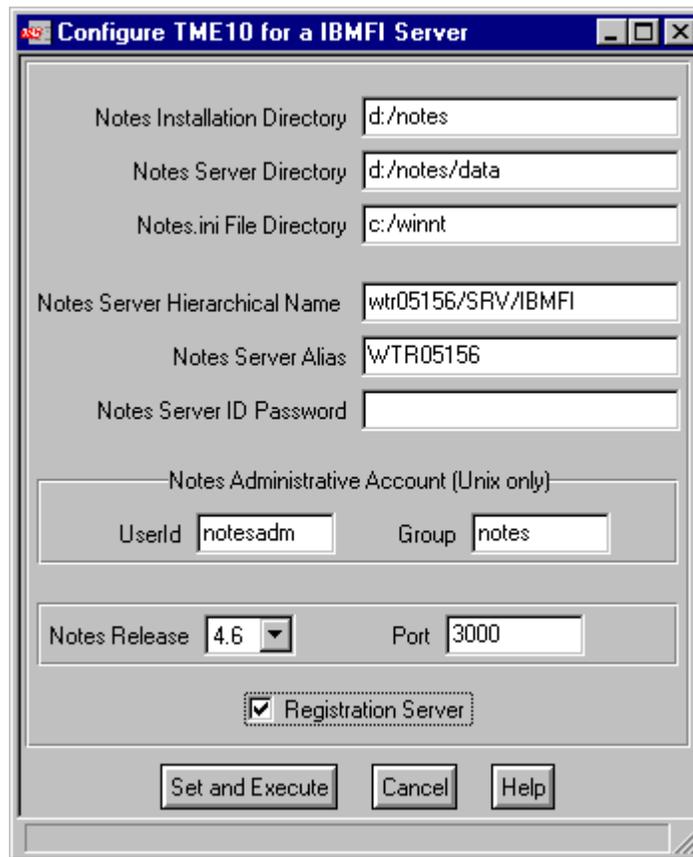


Figure 27. Configure TME10 for a DomainAlias Server

4. In the Configure TME 10 for a DomainAlias Server dialog (Figure 27), enter the appropriate information about the Domino server and click on **Set and Execute**.

Notes Installation Directory

Enter the Notes installation directory, normally /opt/lotus/notes for UNIX platforms and d:\notes for Windows NT.

Notes Server Directory

Enter the Domino server directory, normally \$HOME/notesr4 for UNIX platforms and d:\notes for Windows NT.

Notes.ini File Directory

Enter the path to the notes.ini file. In our example, for the AIX platform it is \$HOME/notesr4, and for Windows NT it is c:\winnt.

Notes Server Hierarchical Name

Enter the hierarchical name of the Domino server in the form Name/Organizational Unit/Organization. You can find the server's hierarchical name in the Server document in the Public Address Book. If you don't use hierarchical names, you should enter a name in the form Server/Domain Name. You cannot use the symbols: ampersand (&), hyphen (-), period (.), underscore (_) and apostrophe (') in this name.

Notes Server Alias

Enter an alias for this Domino server. All TME objects for the server are named using this alias instead of the server hierarchical name. Since this string will be part of every label, it is important that it be short, unique, and descriptive. It cannot be the name of the Domino server's host machine. Characters permitted are letters, numbers and spaces. The default Notes server alias is the Domino server's common name (the portion of the hierarchical name that precedes the first slash), unless that name contains illegal characters or is the name of the Domino server's host machine. If it matches one of these conditions, you must enter an alias.

Notes Server ID Password

Enter the same password you have set for the Domino server.

Notes Administrative Account

Enter the user ID and group ID that identifies the account used to run the Domino server. By default the user ID is notesadm and the group ID is notes. (We suggest you use the user ID and group ID used to install the Domino server product. We seemed to run into configuration problems with this task when we didn't.)

Notes Release

Select the release level of the server.

Port

The default port is 3000. It is used by the Tivoli Manager for Domino to interact with the Domino server. You can choose another one.

Registration Server

Select this field if you wish this server to be added to the registration server list. You should add this server to the registration list if you plan to perform user administration on it. This registration server list is the default target subscribed to the DomainAlias User Tasks jobs.

5. The Configure TME 10 for a DomainAlias Server Output dialog shows the results of the execution. You may save it to a file or close the dialog.

The output for our environment is shown in Figure 28.

```

#####
Task Name:Configure TME10 for a IBMFI Server
Task Endpoint:wtr05156 (ManagedNode)
Return Code:0
-----Standard Output-----

Administrators for wtr05156/SRV/IBMFI:
Admins
Status Msg: Updating IBMFI Central Monitors
Status Msg:   Added Host Status Monitor for wtr05156
Updating Notes environment variables...
Updating Notes environment variables...
tecad_notes Configuration Complete!
Updating Notes environment variables...
Updating Notes environment variables...

Adding wtr05156/SRV/IBMFI to administrator list in the public Name and Address book...

Administrators for wtr05156/SRV/IBMFI:
Admins
CN=wtr05156/OU=SRV/O=IBMFI

Creating Notification Method document, tecad_notes...

MethodDescription: tecad_notes
MethodName: tecad_notes

Creating Event Notification document for event type, Unknown...

Enable/Disabled: 1
Notification method: tecad_notes
Server name(s): CN=wtr05156/OU=SRV/O=IBMFI
Event Severity: *
Notification: *

Creating Event Notification document for event type, Comm/Net...

Enable/Disabled: 1
Notification method: tecad_notes
Server name(s): CN=wtr05156/OU=SRV/O=IBMFI
Event Severity: *
Notification: *

Creating Event Notification document for event type, Security...

Enable/Disabled: 1
Notification method: tecad_notes
Server name(s): CN=wtr05156/OU=SRV/O=IBMFI
Event Severity: *
Notification: *

Creating Event Notification document for event type, Mail...

Enable/Disabled: 1
Notification method: tecad_notes
Server name(s): CN=wtr05156/OU=SRV/O=IBMFI
Event Severity: *
Notification: *

```

```

Creating Event Notification document for event type, Replication...

Enable/Disabled: 1
Notification method: tecad_notes
Server name(s): CN=wtr05156/OU=SRV/O=IBMF1
Event Severity: *
Notification: *
Creating Event Notification document for event type, Resource...

Enable/Disabled: 1
Notification method: tecad_notes
Server name(s): CN=wtr05156/OU=SRV/O=IBMF1
Event Severity: *
Notification: *

Event Notification document for event type, Misc, already exists in Statistics and Events
Notes database.

Creating Event Notification document for event type, Server...

Enable/Disabled: 1
Notification method: tecad_notes
Server name(s): CN=wtr05156/OU=SRV/O=IBMF1
Event Severity: *
Notification: *

Creating Event Notification document for event type, Statistic...

Enable/Disabled: 1
Notification method: tecad_notes
Server name(s): CN=wtr05156/OU=SRV/O=IBMF1
Event Severity: *
Notification: *

Creating Event Notification document for event type, Update...

Enable/Disabled: 1
Notification method: tecad_notes
Server name(s): CN=wtr05156/OU=SRV/O=IBMF1
Event Severity: *
Notification: *

Configure TME10 for a IBMFI Server Complete!

-----Standard Error Output-----
#####

```

Figure 28. Task Configure TME 10 for a IBMFI Server Output

In our environment, we can now see the Domino server icon WTR05156 in our IBMFI policy region (Figure 29).

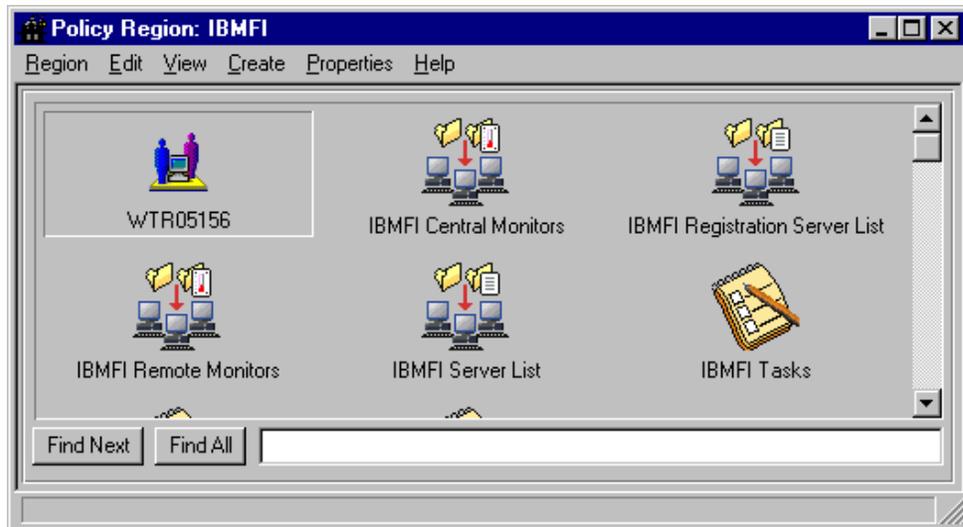


Figure 29. Policy Region: Notes Domain Server Icon

After running this task you need to:

1. If you are using a UNIX platform, ensure that the LIBPATH environment variable (or LD_LIBRARY_PATH) is correctly set for the user ID that runs the Domino server. See 2.2.1.1, “AIX Platform” on page 12 for more information about preparing the Domino server UNIX account.
2. If you are using a UNIX platform, assign the Domino server user login to a Tivoli administrator with DomainAlias_Super and DomainAlias_admin roles.
The command below adds the login notes@klhaix (our Domino server login) to the Tivoli administrator Root_klhaix-region.

```
$ wsetadmin -l notes@klhaix Root_klhaix-region.
```

3. Start the Domino server.

2.4.9 Configuring an Event Console

This task adds filters to an event console and assigns event groups. It requires the DomainAlias_Super administrative role in the DomainAlias policy region and should be executed once for each event console in each DomainAlias.

Note: Before executing this task make sure that an event console already exists on the administrator's desktop (see 2.2.2, “Preparing the TME Environment” on page 15).

Use the following steps to configure an event server:

1. From the Module for Notes policy region, open the **DomainAlias** policy region.
2. From the DomainAlias policy region, open the **DomainAlias Utilities** task library (Figure 30).

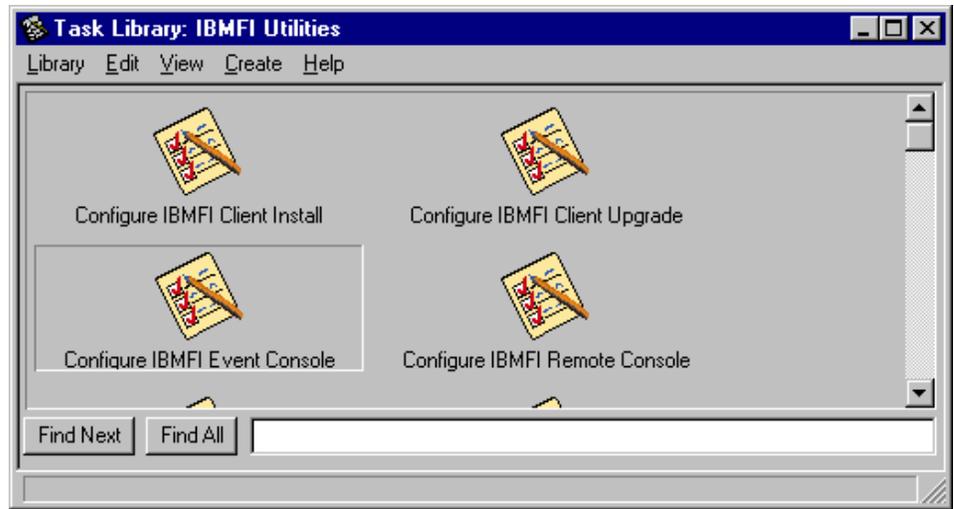


Figure 30. Task Library: DomainAlias Utilities

3. Run the Configure DomainAlias Event Console job (Figure 30).

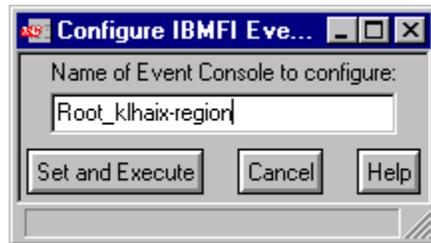


Figure 31. Configure DomainAlias Event Console

4. In the Configure DomainAlias Event Console dialog (Figure 31), enter the name of the event console to be configured. This name should match the label on the event console icon on the administrator's Tivoli desktop. Click on **Set and Execute**.
5. The Configure DomainAlias Event Console Output dialog shows the results of the execution. You may save it to a file or close the dialog.

The output for our environment is shown in Figure 32.

```
#####
Task Name:  Configure IBMFI Event Console
Task Endpoint: klhaix (ManagedNode)
-----Standard Output-----
Status Msg: Created IBMFI event group.
Status Msg: Added event filter Filter1
Status Msg: Added event filter Filter2
Status Msg: Added event filter Filter3
Status Msg: Assigned IBMFI to Root_klhaix-region.
Configure IBMFI EventConsole Complete!
-----Standard Error Output-----
#####
```

Figure 32. Task Configure DomainAlias Event Console Output

If you open the event console from the administrator's desktop, you will see an event group that matches your DomainAlias name (Figure 33) and an event source tecad_notes (Figure 34) if this task completed successfully.

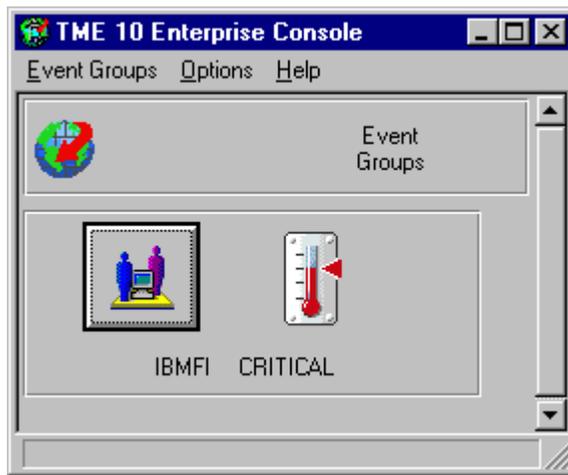


Figure 33. Enterprise Console: Event Group NotesDomainAlias

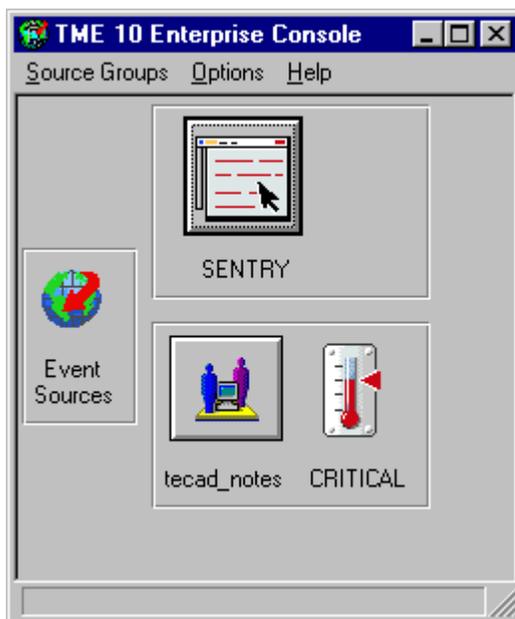


Figure 34. Enterprise Console: Event Source tecad_notes

Notes events will be received only when you finish the configuration of the Tivoli Manager for Domino.

2.4.10 Configuring a Remote Console

This task configures a Notes remote console that runs from the Tivoli desktop. It is executed from within the DomainAlias policy region and requires the DomainAlias_super administrative role. After running the Configure TME 10 for a Notes Server job, it should be executed only when you change:

- The Domino server password
- The TCP/IP port that Tivoli Manager for Domino uses to communicate with the Domino server
- The Domino server UNIX user ID
- The Domino server UNIX group ID

This task does the following:

- Redefines the Domino server password to the Tivoli Manager for Domino.
- Optionally changes the port that Tivoli Manager for Domino uses to communicate with the Domino server.
- Redefines the Domino server UNIX user ID to Tivoli Manager for Domino.
- Redefines the Domino server UNIX group ID to Tivoli Manager for Domino.
- Resets the Tivoli Manager for Domino password.

Use the following steps to configure a remote console:

1. From the Module for Notes policy region, open the **DomainAlias** policy region.
2. From the DomainAlias policy region, open the **DomainAlias Utilities** task library (Figure 35).

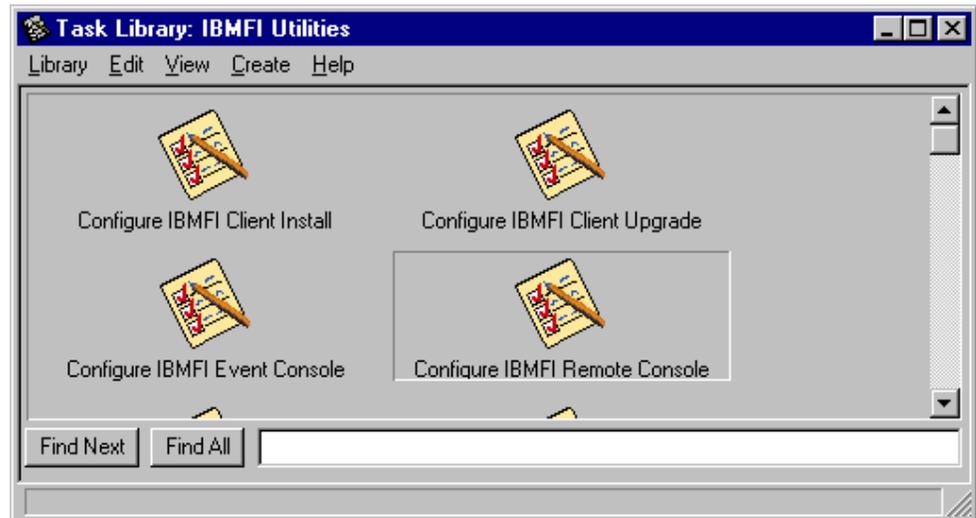


Figure 35. Task Library: DomainAlias Utilities

3. Run the Configure DomainAlias Remote Console job (Figure 35).

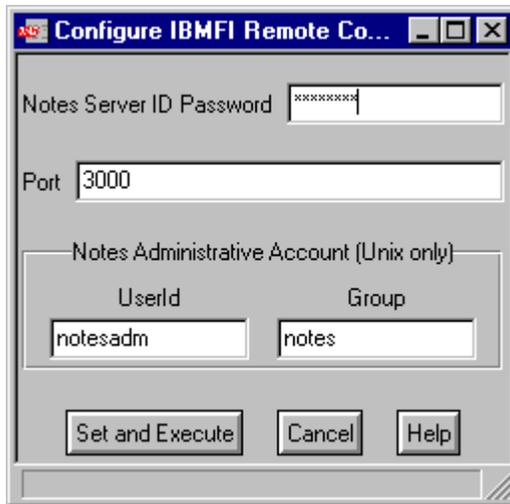


Figure 36. Configure DomainAlias Remote Console

4. In the Configure DomainAlias Remote Console dialog (Figure 36):
 1. Enter the Domino server password in the Notes Server ID Password field. If you have not set up a Domino password, leave this field blank.
 2. You may enter another port number in the Port field or accept the default.
 3. Enter the user ID that identifies the account used to run the Domino server in the UserId field.
 4. Enter the group ID that identifies the group used to run the Domino server in the Group field.
 5. Click on **Set and Execute**.
5. The Configure Remote Console Output dialog shows the results of the execution. You may save it to a file or close the dialog.

The output for our environment is shown in Figure 37.

```
#####
Task Name:Configure IBMFI Remote Console
Task Endpoint:WIR05156 (NotesServer)
-----Standard Output-----
Updating Notes environment variables...
Updating Notes environment variables...
Configure IBMFI Remote Console Complete!
Be sure and restart your Notes server!
-----Standard Error Output-----
#####
```

Figure 37. Task Configure IBMFI Remote Console Output

You must stop and restart the Domino server before you can use the Remote Console. See 3.2.5, “Stopping a Notes Server” on page 54 and 3.2.4, “Starting a Notes Server” on page 53 for instructions on how to stop and start a Domino server using the Tivoli Manager for Domino.

2.4.11 Configuring Client Install/Upgrade for a Notes Domain Server

These tasks build the before and after installation programs and file packages for installing and upgrading a Notes client with Tivoli Software Distribution. They are executed from within the DomainAlias policy region, require the DomainAlias_admin administrative role, and should be executed for each client platform you will be installing and upgrading.

These tasks are described in Chapter 6, “Notes Client Installation, Configuration, and Upgrade” on page 145.

2.5 Installation and Configuration Troubleshooting and Tips

In this section, we have provided some troubleshooting information and tips that we feel may be beneficial to the reader. Additional troubleshooting information is included in Chapter 11 of the *Tivoli Manager for Domino User's Guide*. You should also see the *Tivoli Manager for Domino Release Notes* for known limitations, defects, and workarounds to problems.

Some of the problems that we encountered while configuring the Tivoli Manager for Domino, and our solutions, are detailed below. This section can be used as a check list before any installations, or as a reference if you run into problems.

- Check the version of msvcrt40.dll in your WINNT/SYSTEM32 subdirectory. Make sure the size is greater than 300K. In our environment it was approximately 64K, which caused ntpocinfo to consume all of the CPU utilization and the Configure TME 10 for a DomainAlias Server task failed. You can find the version over 300K in the TRIP subdirectory. This applies only to Windows NT.
- Copy the libNoteServer_imp.dll file from the \$LIBDIR directory to the \$BINDIR/bin directory. When performing the Configure TME 10 for a DomainAlias Server task in a Windows NT environment, the task tries to find the DLL from the \$PATH directories and hangs if the DLL cannot be found. You will also see a pop-up message on the Windows NT system referencing a missing file error. This defect is documented in the *Tivoli Manager for Domino Release Notes* and applies only to Windows NT.
- Ensure that your TMP environment variable is set to a directory on an NTFS drive, as opposed to a directory on a FAT drive. You can check your TMP setting by issuing SET from a DOS Command Prompt window on the Windows NT system. A symptom of this problem is the Configure TME 10 for a DomainAlias Server task times out without completing any of the steps in the task. This applies only to Windows NT.
- On UNIX platforms, the Tivoli Manager for Domino needs access to the Domino server's library directory, /opt/lotus/notes/latest/ibmpow by default, in order to call external Domino functions from within the Tivoli environment. As a result, you must ensure that any user that starts oserv has the LIBPATH environment variable set so that it points to the /opt/lotus/notes/latest/ibmpow directory. This can be accomplished by either adding the directory to the LIBPATH statement in setup_env.sh and adding setup_env.sh to the user's profile, or by creating a symbolic link from LIBPATH to /opt/lotus/notes/latest/ibmpow.
- When running the Configure TME 10 for a DomainAlias Server task, if you inadvertently select a port number for TMR server/Domino server

communication that is already allocated for other communications, you will later experience multiple miscellaneous TMR server/Domino server communication-related problems, such as Notes monitors not running properly or Notes tasks failing with *Connection Reset by Peer* errors. Although this problem will not be apparent at configuration time, it is where it originated from, so we mention it here.

For the installation and each of the configuration tasks, a log file is generated which contains details of the installation or task execution. It is a good idea to check the output in these log files if you encounter problems during any of these steps, as they will contain details that are not displayed to the Tivoli Desktop output dialogs which may be beneficial in debugging a problem. These log files are created in the /tmp directory on UNIX platforms, and the wtemp directory on the Windows NT platform. The following table lists the Tivoli Manager for Domino required configuration tasks and their log file names.

Table 4. Configuration Tasks Log File Locations

Required Configuration Tasks Log Files	
Configure Event Server for Notes	notes_eventserver_config.log
Configure TME 10 for a Notes Domain	notes_create_domain.log
Configure TME 10 for a DomainAlias Server	DomainAlias_notes_create_server.log
Configure DomainAlias Event Console	DomainAlias_notes_tec_config.log

The log files for the other configuration tasks can be found by editing the task from the task library, which will show you the name and location of the task script. The task script contains the log file name and location.

Chapter 3. Managing Servers with Tasks and Jobs

The Tivoli Manager for Domino provides a number of operational tasks and jobs for managing Notes servers and users. The Tivoli Manager for Domino also provides a way of creating server lists and client lists, which enable us to run tasks or jobs against every system in these lists. This chapter explains how to create new server and client lists as well as execute server tasks and jobs that are in the DomainAlias Tasks Task Library. Information regarding the management of Notes users is described in Chapter 5, “User Management” on page 103.

The "Configure TME 10 for a Notes Domain" task, see 2.4.2, “Configuring Tivoli for a Notes Domain” on page 24, creates a sub-policy region for each Notes domain. In our environment, we have created two sub-policy regions, IBMFI and IBMBR, under our Module for Notes policy region. We use IBMFI in our examples and generically refer to it as a DomainAlias throughout this chapter.

3.1 Creating Lists

Once you have completed the configuration steps for the Tivoli Manager for Domino (Chapter 2, “Installation and Configuration” on page 9), you will notice that a DomainAlias Server List was created and populated with each Notes server you defined. The jobs in the DomainAlias Tasks task library were also configured to have this server list selected as the execution target. You have complete flexibility to edit your DomainAlias Server List to alter its subscribers and you can edit your DomainAlias Tasks task library jobs if needed to point to other execution targets (single endpoints or lists) after it has been configured.

In the next two sections we show you how to create new server and client lists and how to add subscribers to them. Server and client lists are created within a DomainAlias policy region and require a DomainAlias_admin administrative resource role.

3.1.1 Creating a New Server List

A server list allows you to group a number of servers together so that you can perform such functions as run tasks, distribute monitors or distribute Tivoli User Administration profiles against this group of servers more easily through the selection of one target, the server list.

To create a new server list, from the DomainAlias policy region, double-click on the **DomainAlias Utilities** task library. In our example, we are using the IBMFI DomainAlias.

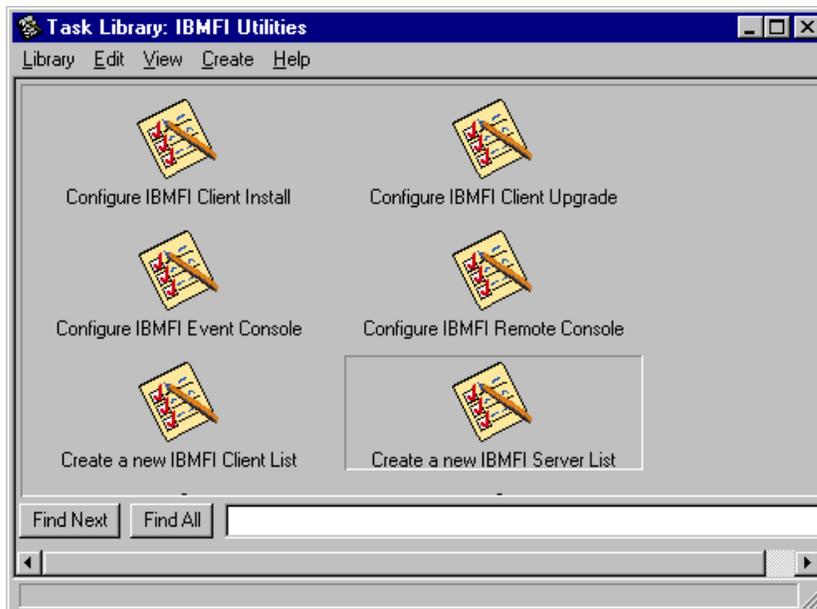


Figure 38. Task Library: IBMFI Utilities

In the DomainAlias Utilities Task Library window, there is a task and a job for creating a new server list. Since the job already has our TMR server, klhaix, defined as the execution target for this task, we will execute the job. Alternatively, we could have executed the task and selected an execution target ourselves. Double-clicking on the **Create a new IBMFI Server List** job icon displays the Create a new IBMFI Server List dialog shown in Figure 39.



Figure 39. Create a New IBMFI Server List

Here we enter the name of the new server list in the field and then click **Set and Execute**.

In our example, we entered `NT Notes Server List`. If the name you enter does not include the DomainAlias name, it is automatically added at the beginning of the name you entered and also adds a profile manager icon with this same name to the DomainAlias policy region.

When we click **Set and Execute**, the results are displayed in the output dialog. You should see the message `Task Complete!` if the task completed successfully. The output dialog also gives us the option to save the output to a file or to dismiss the dialog.

Our server list is IBMFI NT Notes Server List and is shown (as a profile manager icon) below:

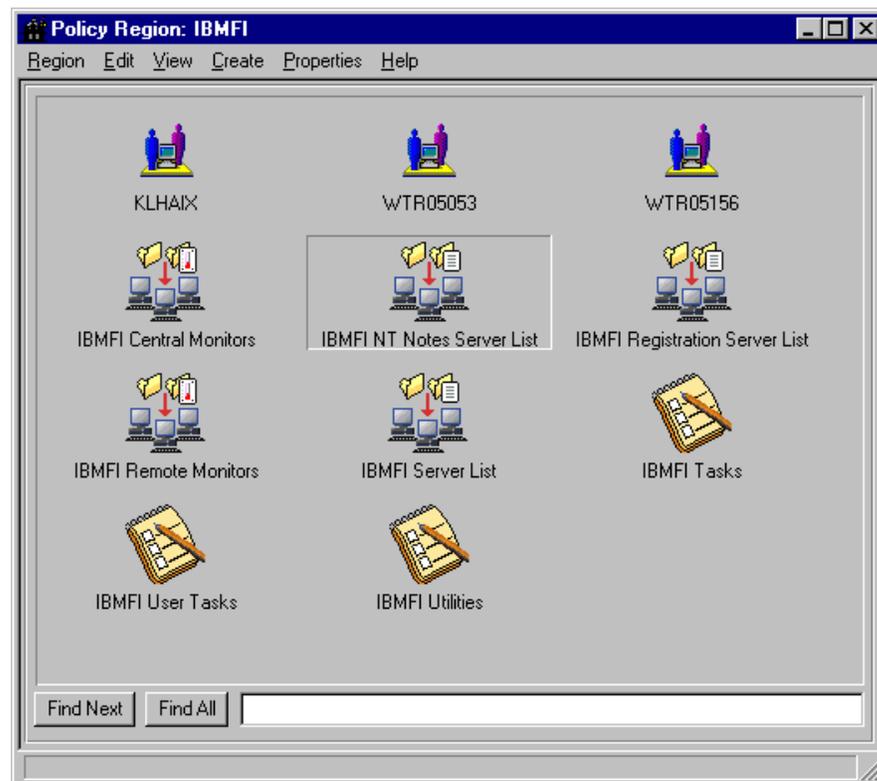


Figure 40. IBMFI NT Notes Server List

3.1.2 Adding Subscribers to a Server List

Now that the Create a new IBMFI Server List job has added a profile manager icon, labeled IBM NT Notes Server List to our IBMFI policy region, we can add subscribers (servers) to the server list.

1. We double-click on the **IBMFI NT Notes Server List** icon that was created in the previous section (Figure 40). This displays the Subscribers dialog shown below.

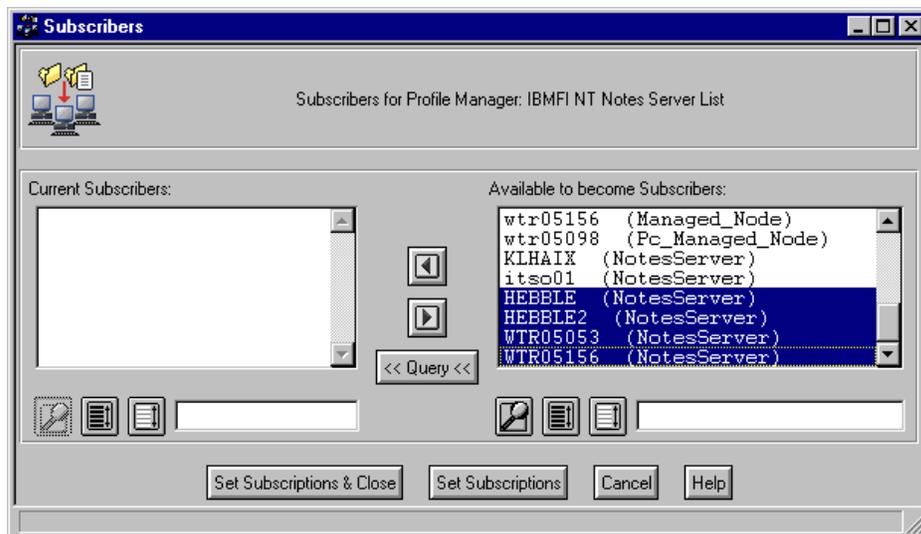


Figure 41. Subscribers for Profile Manager Server List

2. We now select the desired Domino servers from the Available to become Subscribers: list box and transfer them to the Current Subscribers: list box. Note that all of the Domino servers in our Available to become Subscribers: list box are referenced as such by (NotesServer) listed after the DomainAlias server name. You will also see the same system in this list box referenced by its managed node name as well. It is recommended that you select the NotesServer resource, and not the Managed_Node resource when you are performing Tivoli Manager for Domino-specific management. Do not select both, as the requested action will be performed twice on the same system! We select **HEBBLE (NotesServer)**, **HEBBLE2 (NotesServer)**, **WTR05053 (NotesServer)** and **WTR05156 (NotesServer)** and move them to the Current Subscribers list box by clicking on the left arrow or double-clicking on the servers. Typically, we wouldn't think that you would select Domino servers from different DomainAlias policy regions to be in the same list; however, it is possible to do so as long as the administrator has the required resource roles for all involved DomainAlias policy regions (in our case, IBMFI and IBMBR).

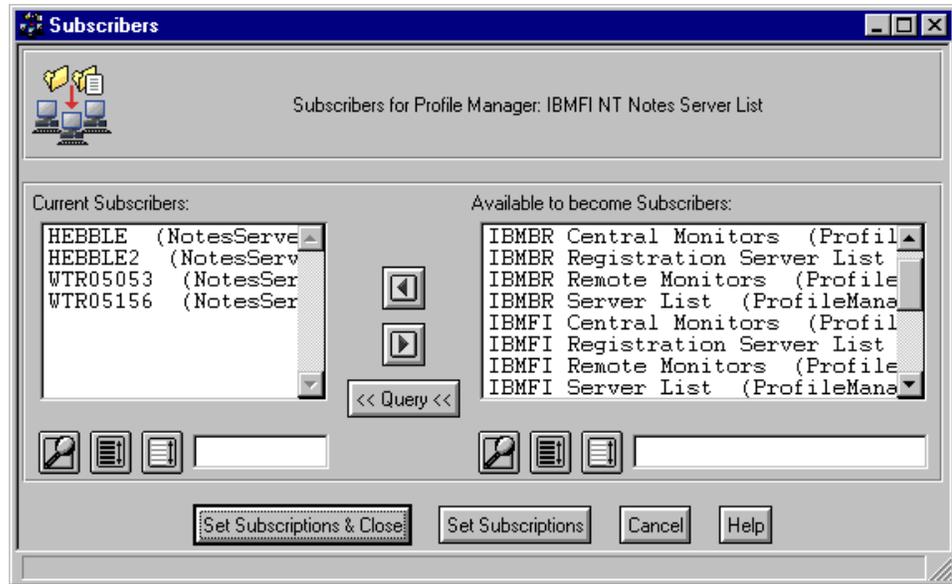


Figure 42. Current Subscribers List

- Now we click **Set Subscriptions & Close** to subscribe the Notes servers to the list.

3.1.3 Creating a New Client List

A client list allows you to run a particular task against every subscriber inserted in the list. For the Tivoli Manager for Domino, an administrator will likely want to create client lists to group systems together to use as subscribers for the software distribution of Notes clients. This procedure is identical to the Create a New Server List task apart from a few selections.

From the IBMFI Utilities task library (Figure 38 on page 44), we double-click on the **Create a new IBMFI Client List** job icon to display the Create a new IBMFI Client List dialog.



Figure 43. Create a New IBMFI Client List

Here we enter the name of the new client list in the field and then click **Set and Execute**.

In our example we entered `NT Notes Clients`. Just as was the case when specifying the name of the server list, if it does not begin with the DomainAlias

name, it will be automatically added at the beginning of the list name and a profile manager icon with this name is added to the DomainAlias policy region.

When we click **Set and Execute**, the results are displayed in an output dialog.

Our resulting client list name is IBMFI NT Notes Clients, as shown below.

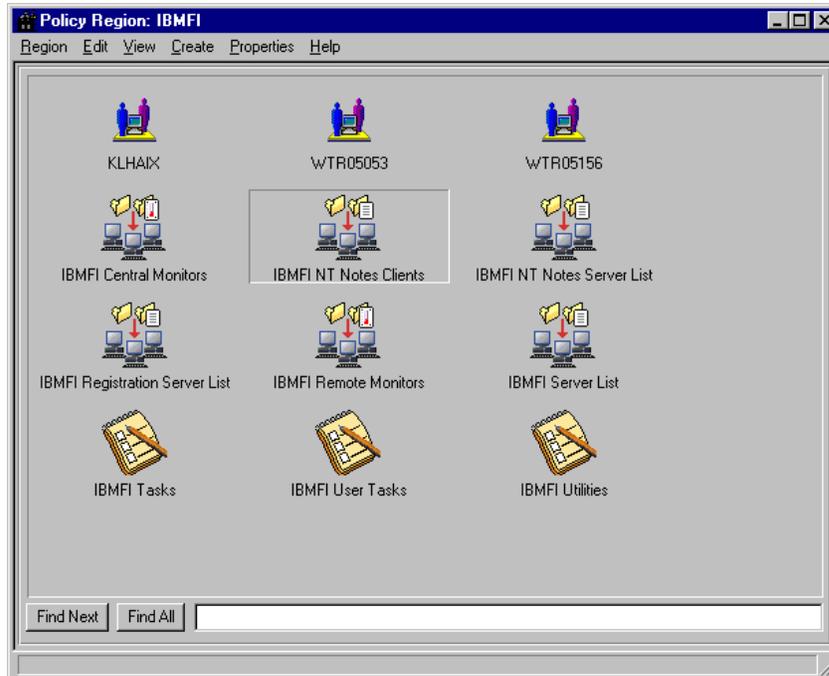


Figure 44. Profile Manager for Client List

3.1.4 Adding Subscribers to a Client List

Now we are ready to add subscribers to the client list that we created in the previous section. Following the same process as we did in “Adding Subscribers to a Server List” on page 45, we double-click on the **IBMFI NT Notes Clients** icon and select the desired clients from the Available to become Subscribers: list box and transfer them to the Current Subscribers: list box. We select **boss173 (PC_Managed_Node)** and **wtr05099 (PC_Managed_Node)** as our subscribers and click on **Set Subscriptions & Close** to subscribe the clients to the list.

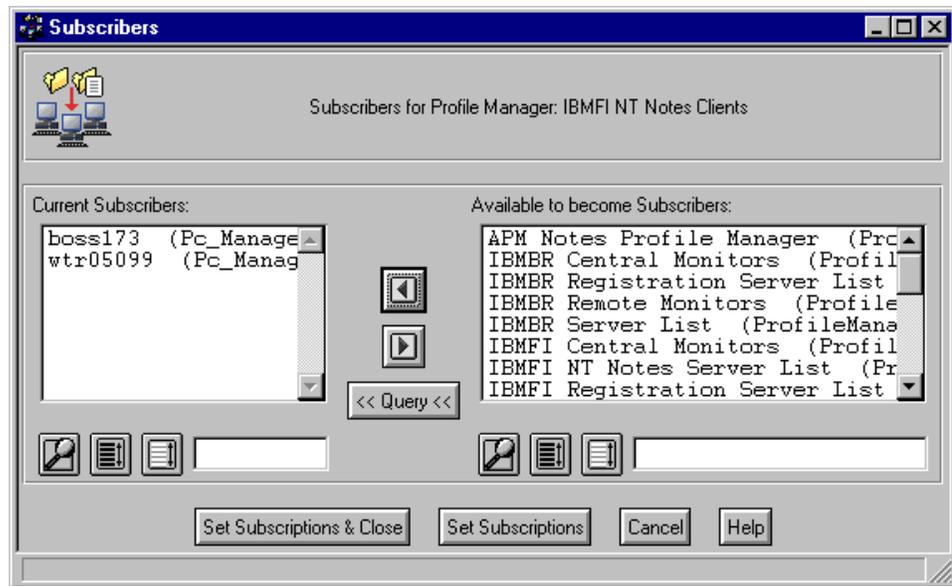


Figure 45. Current Subscribers List

Note: The subscribers in client lists should be managed nodes or PC managed nodes, as only these managed resources can receive software distribution file packages.

3.2 Executing Notes Server Tasks and Jobs

The Tivoli Manager for Domino provides several predefined tasks and jobs for managing your Domino/Notes environment. These tasks and jobs can be divided into two categories, server and user tasks/jobs. As mentioned in the beginning of the chapter, we only explain server tasks here. To find out more about user tasks, see Chapter 5, “User Management” on page 103.

The following server tasks are provided by the Tivoli Manager for Domino:

- Starting a Notes desktop
- Starting and stopping a Notes server
- Starting and stopping the event adapters
- Starting and stopping the monitors
- Starting a remote console
- Getting Notes statistics

Server tasks are executed from within a DomainAlias policy region and require a DomainAlias_admin administrative role.

From within a DomainAlias policy region, you can execute server tasks from a Domino server icon's pull-down menu or from within the DomainAlias Tasks task library window.

3.2.1 Domino Server Icon Task Menu

Each Domino server icon contains a pull-down task menu. If we execute a task from the menu on a Domino server icon, the task executes on that server only. To display a Domino server pull-down menu, click and hold down the right mouse button on the desired Domino server icon, as shown below.

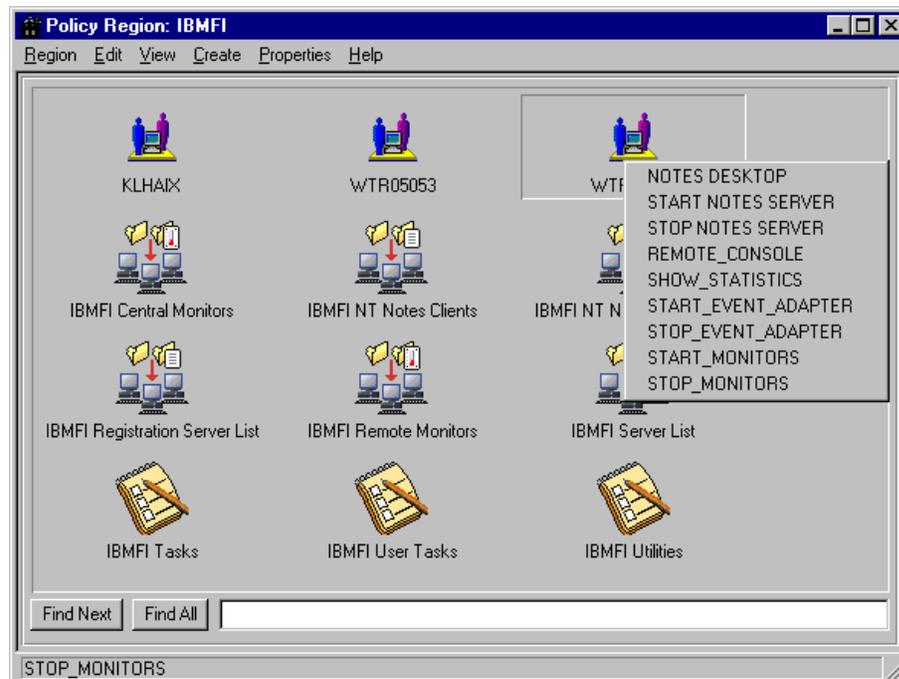


Figure 46. Domino Server Icon Menu

When executing Domino server tasks using this method, you will always be prompted with a confirmation dialog prior to the task being executed.

3.2.2 DomainAlias Tasks Task Library

The DomainAlias Tasks task library contains both jobs and tasks. To display the DomainAlias Task Library window, we double-click on the **DomainAlias Tasks** icon (IBMFI Tasks in our example).



Figure 47. Task Library Tasks

The job icons in this window have checkmarks in the boxes and the tasks do not. If you execute a task from this task library, you are able to select the server(s) on which the task will run in an Execute Task dialog, similar to the dialog shown in Figure 48 on page 52.

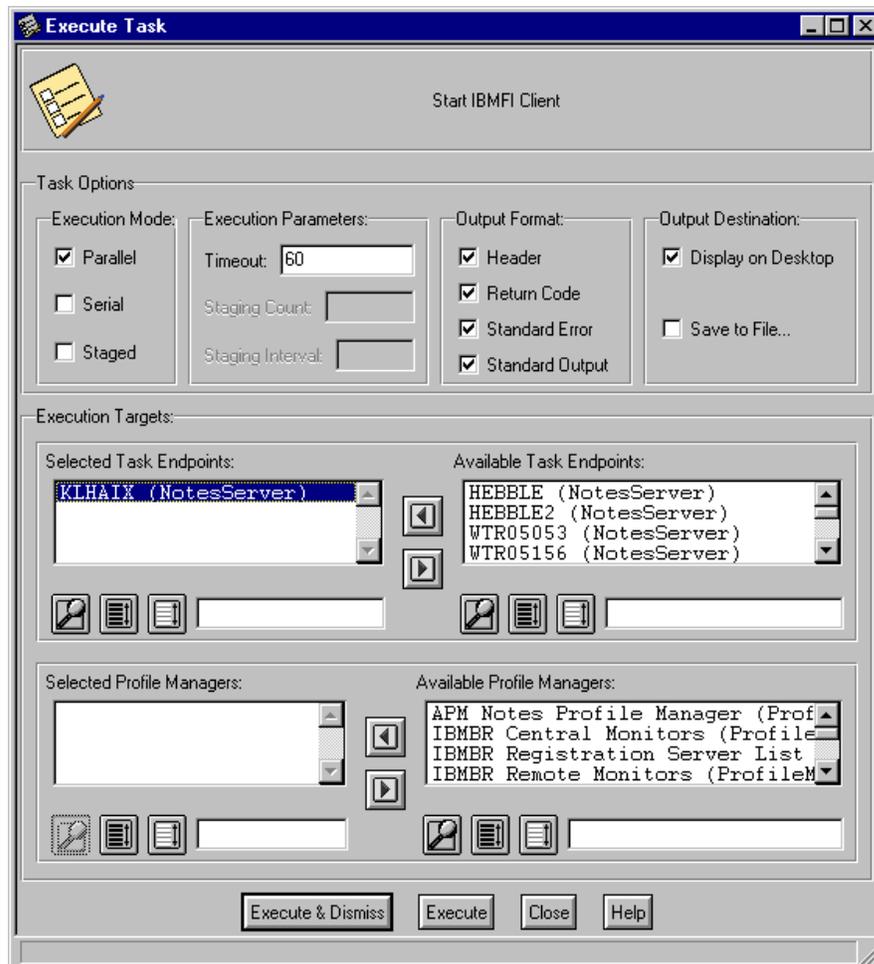


Figure 48. Execute Task Dialog

To execute the task, we only need to select the desired task options and execution targets. The only needed change to the Task Options is the selection of the Output Destination. Once these selections have been made, we can click on the **Execute** or **Execute & Dismiss** push button.

As mentioned in 3.1, "Creating Lists" on page 43, the jobs in this task library have been preconfigured for you to have the DomainAlias Server List subscribed to the task as the execution target. Executing a job in this task library will execute the task against all the servers that were defined in the DomainAlias server list. You can edit the jobs to tailor the properties to meet your environment's needs if desired.

In most instances, a Notes administrator would run jobs from the task library, as most server tasks would typically be executed on multiple servers. When you run jobs against a DomainAlias server list that has multiple servers listed, the job execution output from all servers are concatenated and displayed in the task output dialog.

With the exception of the Start DomainAlias Client task, a confirmation dialog is displayed when executing these tasks or jobs manually. It is not displayed if you have executed a job using the scheduler.

3.2.3 Starting a Notes Client

This task starts the Notes client of the specified server. You can either execute this task by selecting **NOTES DESKTOP** from the DomainAlias Domino server icon pull-down menu or by double-clicking on the **Start IBMFI Client** task icon from the DomainAlias Tasks Task Library window. Note that the Tivoli Manager for Domino does not have a Start IBMFI Client job. If this task is executed against a Domino server running on a UNIX platform, the Notes client (shown in Figure 49) will be started where you executed the task from, assuming you have X server software running. If the location where you executed the task from does not have X server software running, the UNIX Domino server's client will not start at all. If you execute this task against a Domino server running on an NT platform, the client desktop will start on the Domino server system itself.

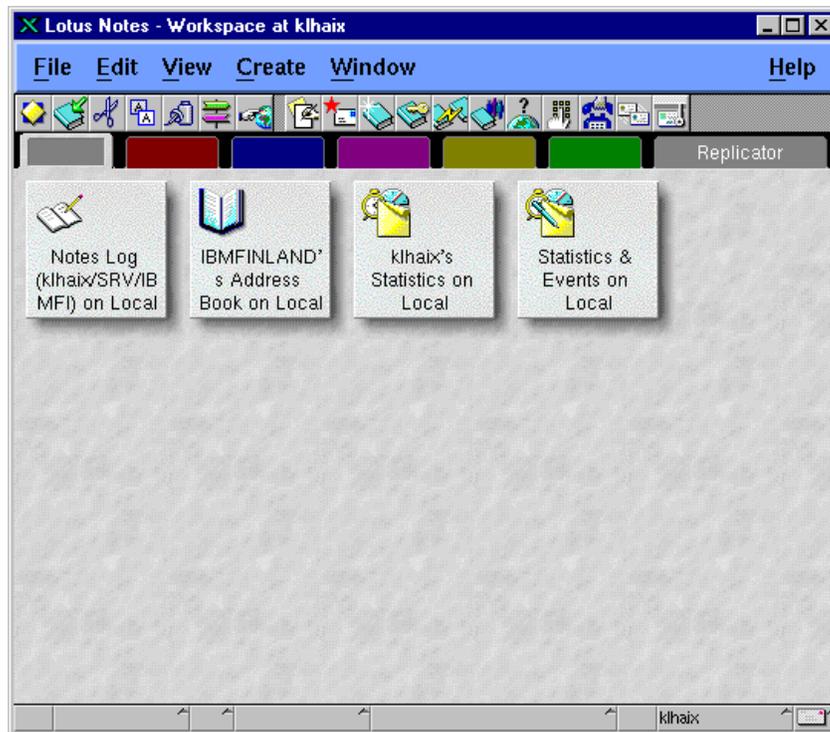


Figure 49. Notes Client Desktop

3.2.4 Starting a Notes Server

This task executes the Notes server command in the Notes server directory. It does not open a Notes console. The output that you would see on the Notes console is instead appended to a file. This file name is listed in the output of this task. You can view the file if you wish to see the console output. The task will not attempt to start another process if the Domino server has previously been started.

If the Domino server has been given a password, this task will take the password (stored when we configured the server) and pass it to the server as part of the startup process. If the server password is changed, we must ensure that we run the Configure Remote Console task to store the new password in the Tivoli Manager for Domino database.

When running this task against Domino servers on NT platforms, the following items should be noted:

- Domino servers must be configured as a service in order for this task to be able to execute successfully. This task runs the nserver.exe command on NT platforms. For information on configuring Domino servers as a service, please refer to 2.2.1.2, “NT Platform” on page 13.
- Domino server startup can not require a password. This task will not successfully execute if a password has been defined.
- In the Release Notes, it is documented that this task does not work when executed against a Domino Server Version 4.6 on NT. This task fails due to a change in the Domino server service registry key name. We worked around this problem by changing the service name key using REGEDIT. The service registry key name is:

```
[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Lotus Domino Server]
```

It should be changed to:

```
[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Lotus Notes Server].
```

Be aware that REGEDT32 does not allow you to change a key name. You must use REGEDIT. Also, the key's DisplayName does *not* need to be changed.

You can either execute this task by selecting **START NOTES SERVER** from the DomainAlias Notes server icon pull-down menu or by double-clicking on the **Start DomainAlias Server** task or job icon from the DomainAlias Tasks Task Library window.

3.2.5 Stopping a Notes Server

This task executes the Notes server -q command in the Notes server directory.

You can either execute this task by selecting **STOP NOTES SERVER** from the DomainAlias Domino server icon pull-down menu or by double-clicking on the **Stop DomainAlias Server** task or job icon from the DomainAlias Tasks Task Library window.

3.2.6 Starting Notes Monitors

This task will start the Tivoli Manager for Domino Central and Remote monitors on the specified servers in the DomainAlias. You must first have distributed the monitors before they can be started. For more information on the Tivoli Manager for Domino monitors, see Chapter 4, “Monitoring a Domino/Notes Environment” on page 59.

You can either execute this task by selecting **START_MONITORS** from the DomainAlias Domino server icon pull-down menu or by double-clicking on the **Start Monitors** task or job icon from the DomainAlias Tasks Task Library window.

3.2.7 Stopping Notes Monitors

This task will stop the Tivoli Manager for Domino Central and Remote monitors on the specified servers in the DomainAlias.

You can either execute this task by selecting **STOP_MONITORS** from the DomainAlias Domino server icon pull-down menu or by double-clicking on the **Stop Monitors** task or job icon from the DomainAlias Tasks Task Library window.

3.2.8 Starting Notes Event Adapters

This task executes the load tecad_notes command on the requested Domino DomainAlias servers. The tecad_notes command is a Tivoli Manager for Domino add-in task that forwards Notes events to the TEC. For more information on the Notes add-in task, see Chapter 4, “Monitoring a Domino/Notes Environment” on page 59. This task will not start an event adapter if the server is not already running or if the tecad_notes add-in task is already running.

You can either execute this task by selecting **START_EVENT_ADAPTER** from the DomainAlias Domino server icon pull-down menu or by double-clicking on the **Start DomainAlias Event Adapter** task or job icon from the DomainAlias Tasks Task Library window.

3.2.9 Stopping Notes Event Adapters

This task executes the tell tecad_notes quit command on the requested Domino DomainAlias servers. This task will not execute if the tecad_notes event adapter is not running.

You can either execute this task by selecting **STOP_EVENT_ADAPTER** from the DomainAlias Domino server icon pull-down menu or by double-clicking on the **Stop DomainAlias Event Adapter** task or job icon from the DomainAlias Tasks Task Library window.

When executing this task, you may receive an error message in the output dialog, as shown below, even if the event adapter did stop.

```
#####  
Task Name:Stop IBMFI Event Adapter  
Task Endpoint:WIR05156 (NotesServer)  
Return Code:1  
-----Standard Output-----  
Status Msg: WIR05156: Stopping Event Adapter ...  
No response from server for this command  
WIR05156: Stopping Event Adapter Failed!\nReturn Code = 94  
-----Standard Error Output-----  
#####
```

Figure 50. Stopping an Event Adapter Output

To verify that the event adapter did stop successfully, you can issue the show tasks command from the Remote Console. This problem is documented in the Release Notes.

3.2.10 Starting a Notes Remote Console

This task starts a remote console for a DomainAlias Domino server that you can run Notes server console commands from, against the Domino server. Some console commands will require a password. In these cases, we are able to enter the password directly after the command, just as we would from a Notes console.

Note: Do not enter the tell tivaddin quit command. The tivaddin add-in task enables the Tivoli Manager for Domino to talk to Domino. If the tivaddin is terminated, the Tivoli Manager for Domino will not be able to perform any functions on the Domino server.

You can either execute this task by selecting **REMOTE_CONSOLE** from the DomainAlias Domino server icon pull-down menu or by double-clicking on the **DomainAlias Remote Console** task or job icon from the DomainAlias Tasks Task Library window. You cannot schedule the DomainAlias Remote Console job. It will fail when it tries to run.

When executing the remote console, you will see a Remote Console dialog that contains a field for entering Notes console commands. In Figure 51 on page 56, we have entered `HELP` in the Notes Remote Console Command field and clicked on **Set and Execute**. `HELP` will provide a list of all the valid Notes remote console commands.

The output is displayed in the Output section of the same Remote Console dialog.

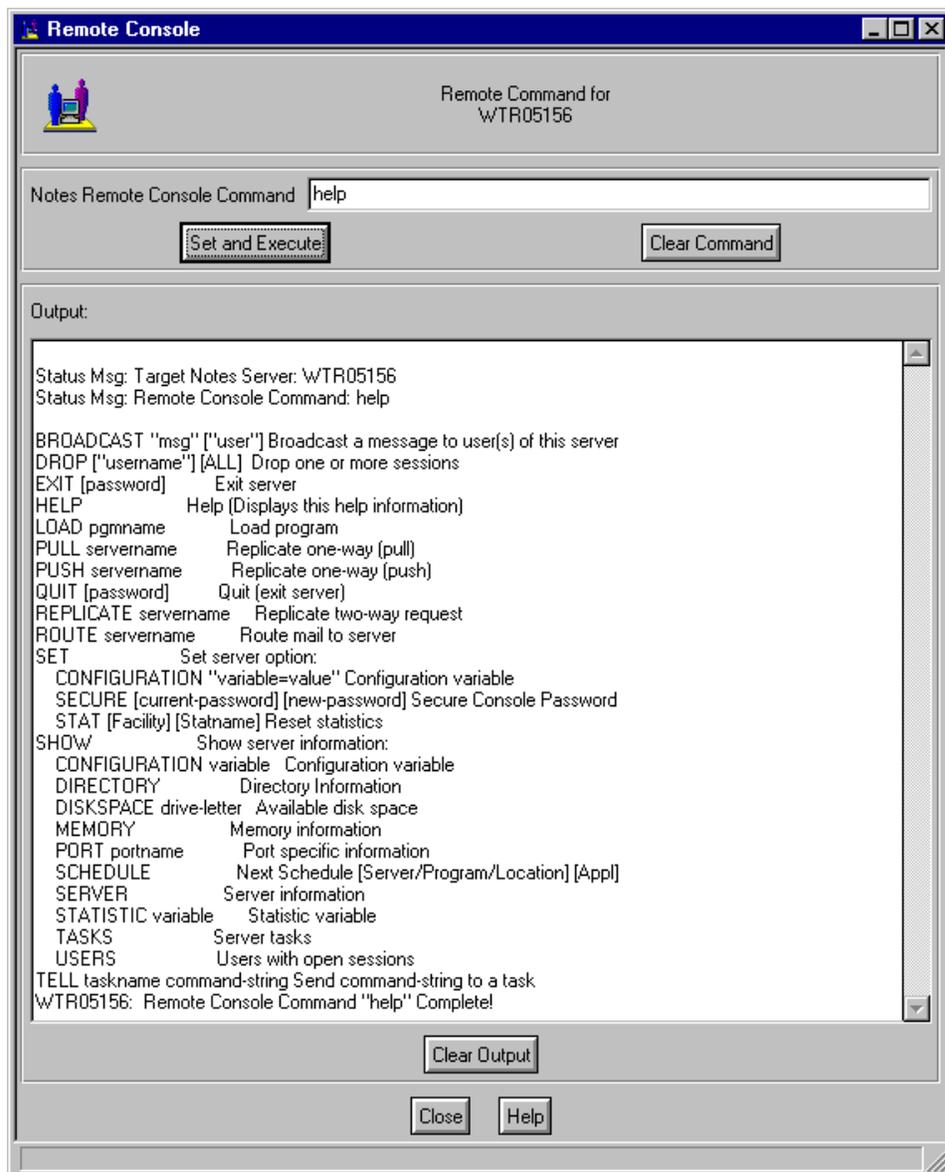


Figure 51. Remote Console Command and Output

3.2.11 Getting Notes Statistics

The Show DomainAlias Statistics task retrieves Notes statistics from the selected servers in the DomainAlias Notes domain by using the Notes remote console show statistic *variable* command. We are able to select one of the following variables for the task:

- All
- Database
- Disk
- Domino
- Mail
- Memory
- Replication
- Server

This task can be executed by selecting **SHOW_STATISTICS** from a DomainAlias Domino server icon pull-down menu or by double-clicking on the **Show DomainAlias Statistics** task or job icon from the DomainAlias Tasks Task Library window. As was the case with the Remote Console job, you cannot schedule the Show DomainAlias Statistics job. It will fail when it tries to run.

When executing the Show DomainAlias Statistics task, you will see a Show Statistics dialog which contains a field for specifying the statistic type. After selecting the statistic type, select **Set and Execute**. The output of the Notes console show statistic command is displayed in the Output section of the same window.

In Figure 52 on page 58, we have executed the show statistics command with the variable All.

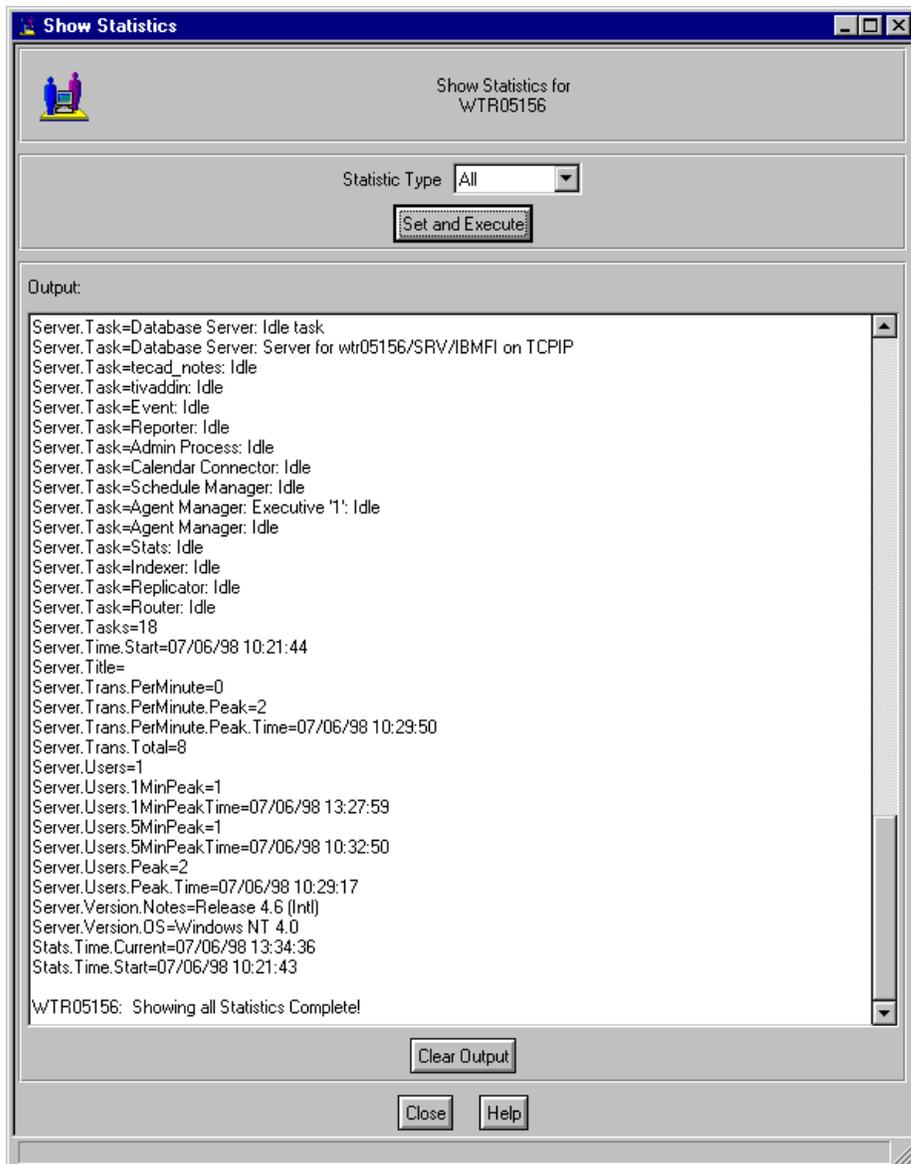


Figure 52. Show Statistics Command and Output

Chapter 4. Monitoring a Domino/Notes Environment

The Tivoli Manager for Domino provides customized monitoring capabilities for the Domino/Notes environment. These monitoring capabilities include pre-defined and customized Tivoli Distributed Monitoring monitoring collections, a TEC adapter as a Notes add-in task, and a Domino/Notes rulebase. In the first three sections of this chapter we introduce you to each of these monitoring capabilities. In the second half of this chapter we show you some examples of how to tailor and extend these monitoring capabilities that the Tivoli Manager for Domino has to meet your particular environment's needs.

4.1 Notes Server Monitors

The Tivoli Manager for Domino creates a Tivoli Distributed Monitoring monitor collection, called Notes DomainAlias Remote Monitors, for each DomainAlias when you configure Tivoli for that Notes Domain (see 2.4.2, "Configuring Tivoli for a Notes Domain" on page 24). It also creates two profile managers in each DomainAlias policy region (see Figure 53):

- DomainAlias Central Monitors
- DomainAlias Remote Monitors

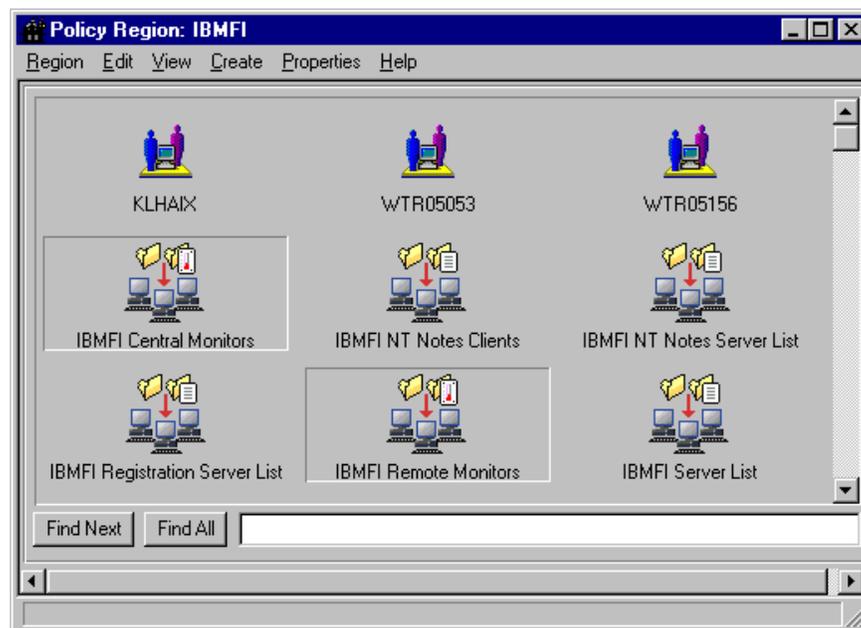


Figure 53. Policy Region: IBMFI

The DomainAlias Central Monitors profile manager holds the DomainAlias Central Monitors profile. The DomainAlias Central Monitors profile contains a host availability monitor from the Universal monitoring collection. The subscribers are the managed nodes for each Domino server. This monitor checks the Domino server's system availability by using the ping command to contact the host. If any of the three trial packets are returned, the host is considered up. This profile manager is like any other profile manager. You can edit the DomainAlias Central

Monitors profile, add additional profiles, and add other subscribers to the profile manager.

The DomainAlias Remote Monitors profile manager holds the DomainAlias Remote Monitors profile and its subscriber is the DomainAlias Server List profile manager (see Figure 54). The DomainAlias Remote Monitors profile contains a set of default monitors from the Notes DomainAlias Remote Monitors monitoring collection that should be customized to suit your local environment's needs. You can add additional monitors, remove any of the predefined monitors, or modify the severity, thresholds or actions of the defined monitors, the same way you do with regular Tivoli Distributed Monitoring monitors and profiles.

The DomainAlias Server List profile manager is automatically subscribed to the DomainAlias Remote Monitors. This list contains, by default, all Domino servers you have configured in that DomainAlias. You can also create your own distribution lists or modify the existing ones. See 3.1, "Creating Lists" on page 43 for information about lists.

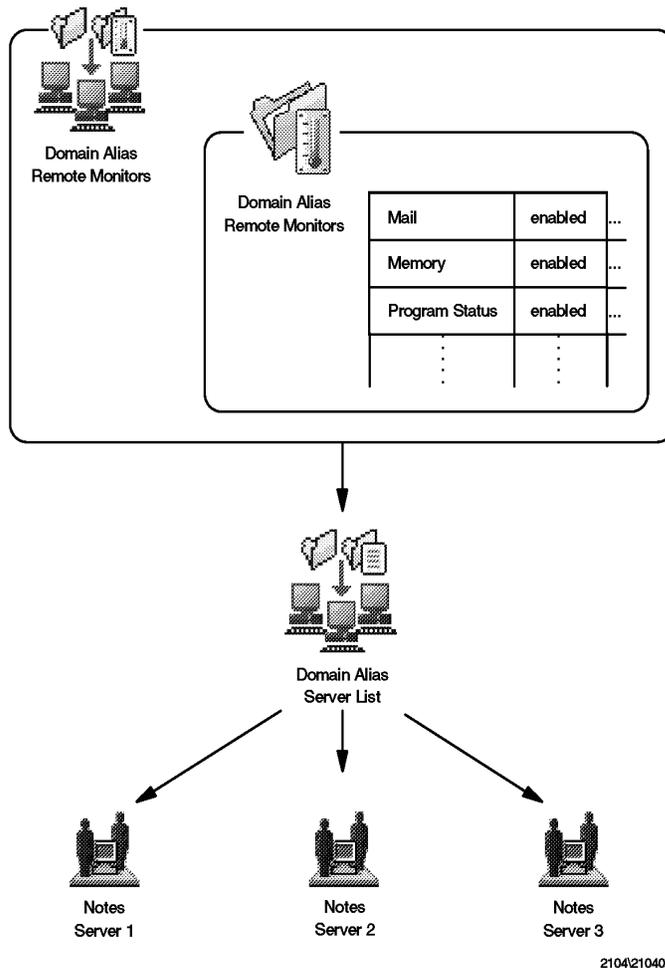


Figure 54. DomainAlias Remote Monitors

Note that for each Notes domain a set of monitors is created, so you can customize them to meet different requirements. In other words, creating and customizing monitors is a domain-level task.

This next section covers how to customize Tivoli Distributed Monitoring profiles and the monitors in them. For more detailed information about monitors and monitor collections, refer to the *Tivoli Distributed Monitoring User's Guide*. In the *Tivoli Manager for Domino User's Guide* you can find more information about the Tivoli Manager for Domino monitors.

4.1.1 Customizing Notes Server Monitors

To customize the Notes server monitors, you need the role DomainAlias_super in the DomainAlias policy region.

You can configure the Tivoli Manager for Domino monitors the same way that you would configure any other Tivoli Distributed Monitoring monitor. The following steps can be used to customize your remote and central monitors.

1. From the Module for Notes policy region, open the desired DomainAlias policy region. In our example, we use the IBMFI policy region (shown in Figure 53).
2. Open the desired profile manager, DomainAlias Remote Monitors or DomainAlias Central Monitors. In our example, shown in the next diagram, we chose to customize the IBMFI Remote Monitors.

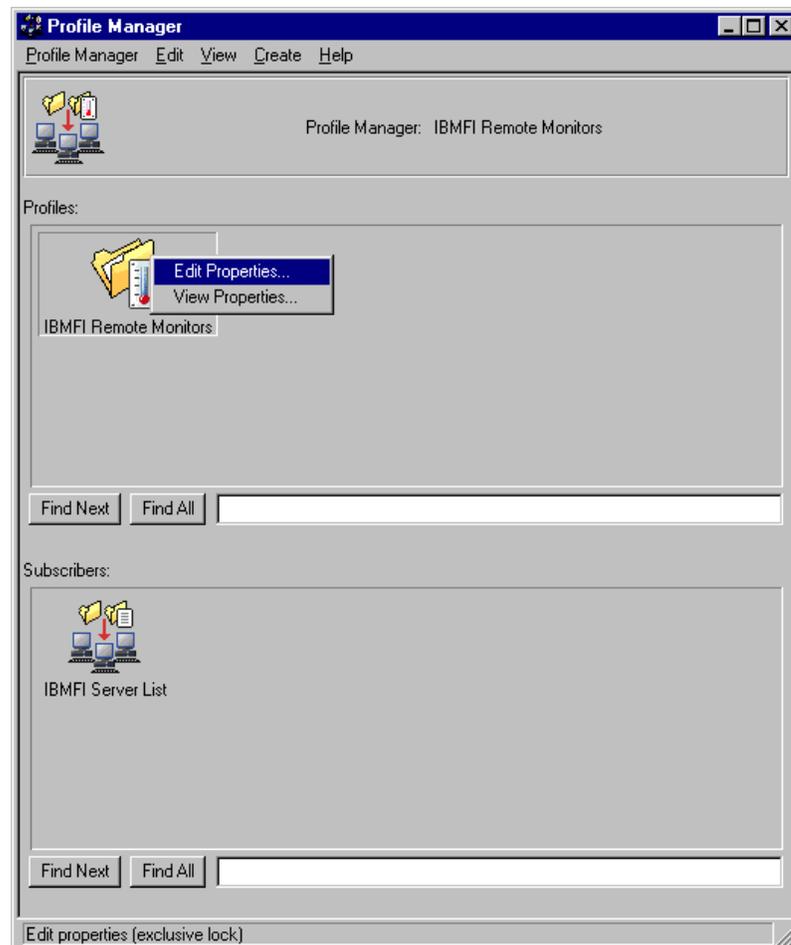


Figure 55. Profile Manager: IBMFI Remote Monitors

3. From the profile's pop-up menu, select **Edit Properties....**

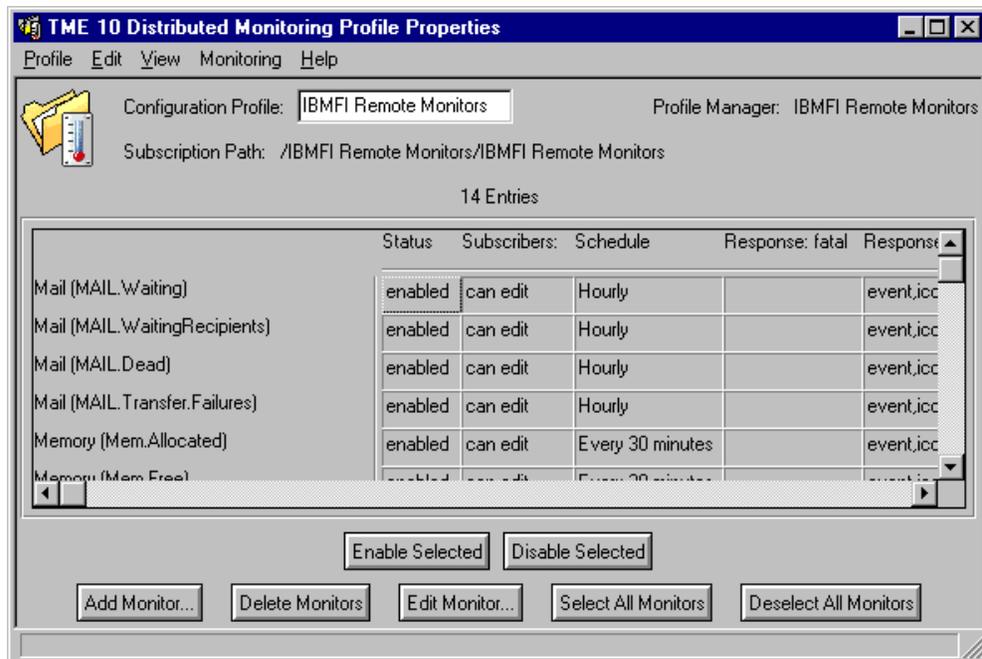


Figure 56. TME 10 Distributed Monitoring Profile Properties

4. From the TME 10 Distributed Monitoring Profile Properties window, you will see the default monitors that were created for you when configuring Tivoli for a Notes domain server. From this window, you can:
 - Add new monitors by following the steps in 4.1.1.1, “Adding New Monitors” on page 63.
 - Delete monitors by following the steps in 4.1.1.2, “Deleting Monitors” on page 65.
 - Edit monitors by following the steps in 4.1.1.3, “Editing Monitors” on page 65.
 - Disable or enable monitors by following the steps in 4.1.1.4, “Disabling and Enabling Monitors” on page 67.
5. After making any changes to the monitors, you must save and distribute the profile:
 1. From the TME 10 Distributed Monitoring Profile Properties window (Figure 56) select **Profile -> Save** to save the profile.
 2. From the TME 10 Distributed Monitoring Profile Properties window (Figure 56) select **Profile -> Distribute....**
 3. In the Distribute Profile window (Figure 57), select the distribution endpoint (by default it is the DomainAlias Server List profile manager), the distribution options, and click on **Distribute & Close**.

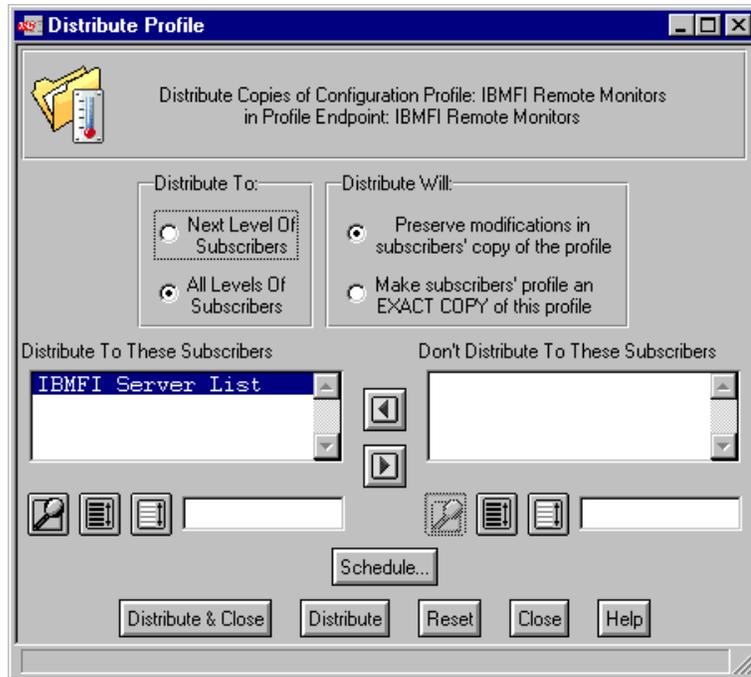


Figure 57. Distribute Profile

4.1.1.1 Adding New Monitors

To add new monitors to a profile, from the TME 10 Distributed Monitoring Profile Properties window (Figure 56) do the following:

1. Select **Add Monitor...**

In this example we are going to add a monitor that checks the status of the Web add-in. You can use the same procedure to add other monitors.

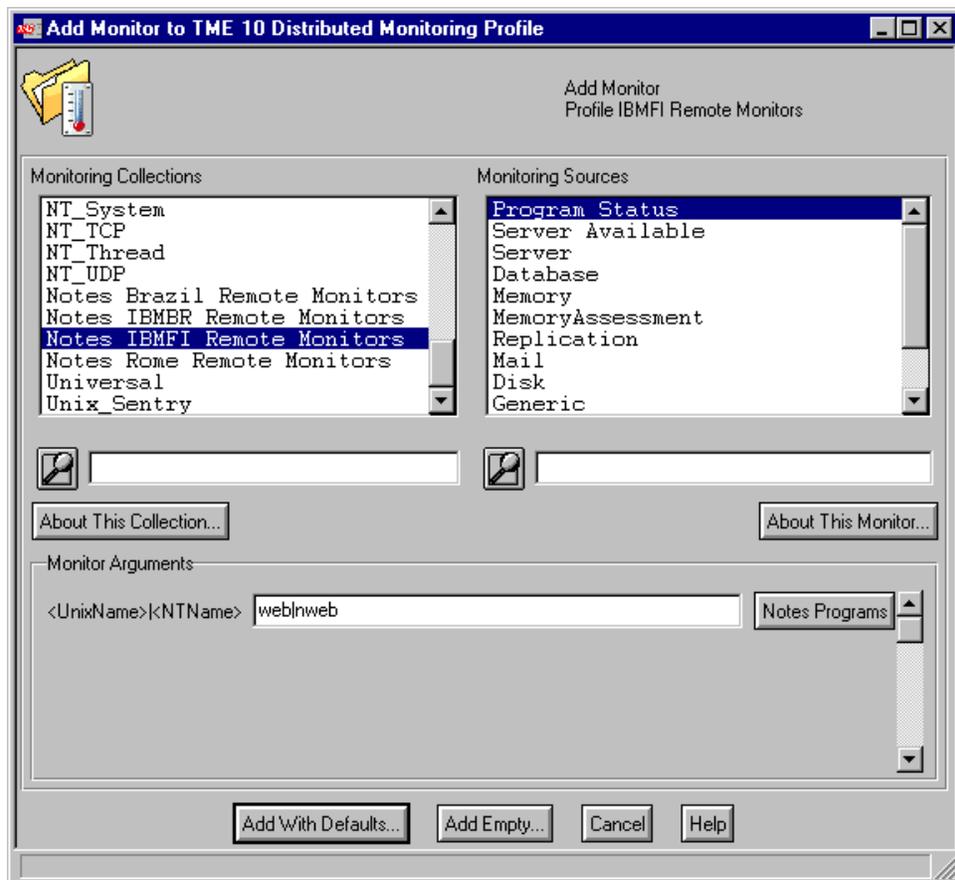


Figure 58. Add Monitor to TME 10 Distributed Monitoring Profile

2. In the Add Monitor to TME 10 Distributed Monitoring Profile dialog do the following:
 1. In the Monitoring Collections list box select **Notes DomainAlias Remote Monitors**. In our example this is the Notes IBMFI Remote Monitors.
 2. In the Monitoring Sources list, select the monitor you want. We selected the Program Status monitor.
 3. In the Monitor Arguments panel, enter the appropriate arguments for your monitor. Selecting the **Notes Programs** button provides us with a dialog that contains the valid arguments. We selected **Web**.
3. You can click on **Add With Defaults...** to use the defaults or on **Add Empty...**, where you will be brought to the Edit Monitor window to provide the details for your monitor. Since the monitor we selected did not have a default value, we selected **Add Empty...** (If you attempt to add with defaults and there aren't any, you will get an error message.)
4. Now you must tailor the monitor by defining the thresholds, response actions and schedule. Refer to steps 3 and 4 in 4.1.1.3, "Editing Monitors" on page 65, for a brief explanation about editing the monitor. By default, a new monitor that you have added has a status of enabled.
5. After you have done the editing, save the profile and distribute it (see step 5 in 4.1.1, "Customizing Notes Server Monitors" on page 61).

4.1.1.2 Deleting Monitors

To delete a monitor in a profile, from the TME 10 Distributed Monitoring Profile Properties window (Figure 56 on page 62) do the following:

1. Click on the monitor you want to delete to select it.
2. Click on **Delete Monitor**
3. Save and distribute the profile (see step 5 in 4.1.1, “Customizing Notes Server Monitors” on page 61).

4.1.1.3 Editing Monitors

When editing a monitor, you can specify under what conditions a threshold will be triggered, what actions will occur when the threshold is triggered, and how often you wish to check for the conditions.

To edit a monitor in a profile, from the TME 10 Distributed Monitoring Profile Properties window (Figure 56 on page 62) do the following:

1. Select the monitor you want to edit.
2. Click on **Edit Monitor...**, which will bring up the Edit Monitor window.

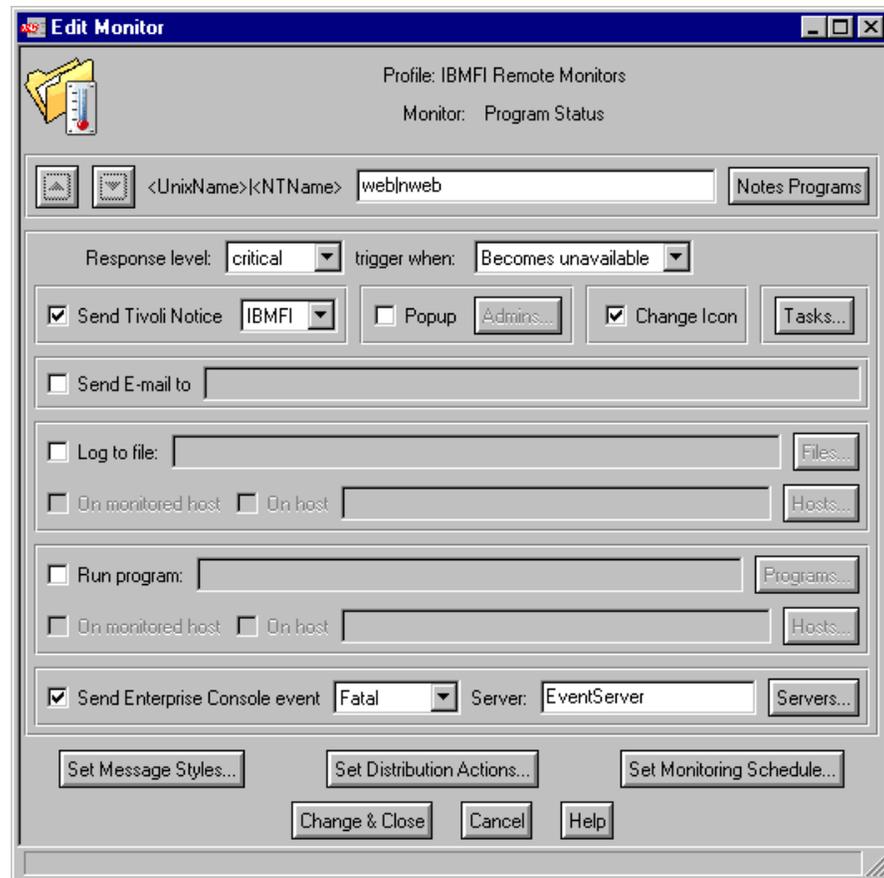


Figure 59. Edit Monitor Window

3. From the Edit Monitor window do the following:
 1. For each response level you choose to implement (critical, severe, warning, reset, normal, or always), you have to specify the threshold trigger

and the response actions. In our example, we define two response levels where we send an Enterprise Console event when the Web add-in goes down, and another event when it comes up again.

2. We select a response level of critical (Figure 59) to be triggered when the Web add-in becomes unavailable. We also select to send a fatal Enterprise Console event to our EventServer.
3. We also specify a response level of reset (Figure 60) to be triggered when the Web server becomes available. We also choose to send a harmless Enterprise Console event to our EventServer.

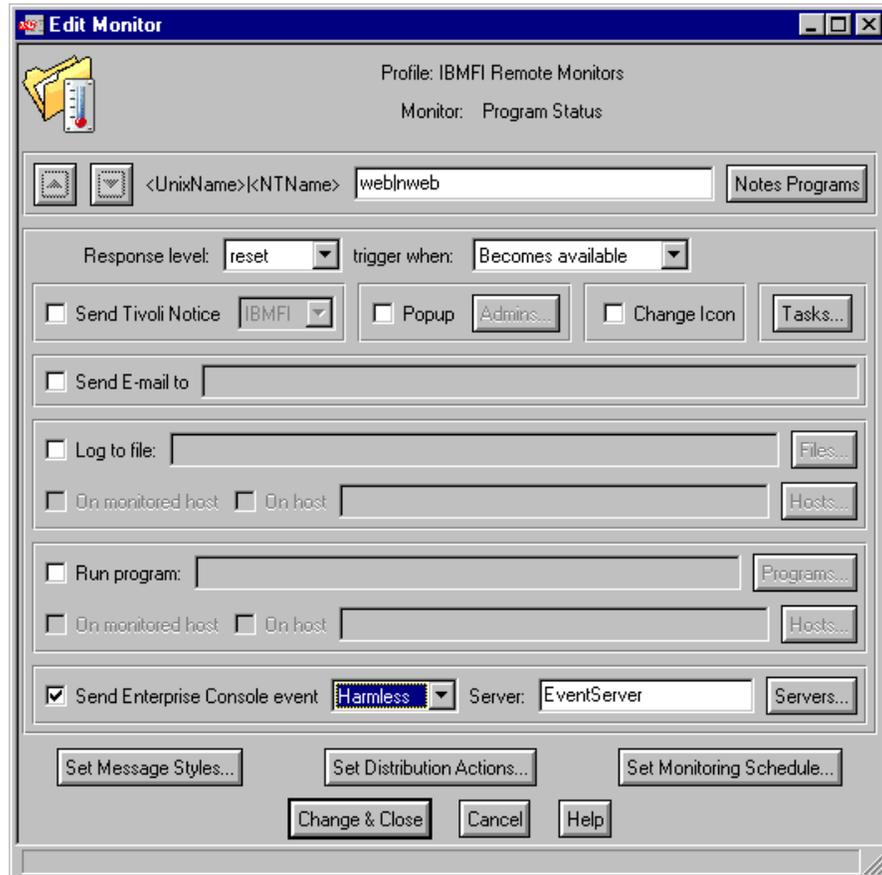


Figure 60. Edit Monitor: Harmless

4. Next we must set up the monitoring schedule. Selecting the **Set Monitoring Schedule....** brings us to the Set Monitoring Schedule window.

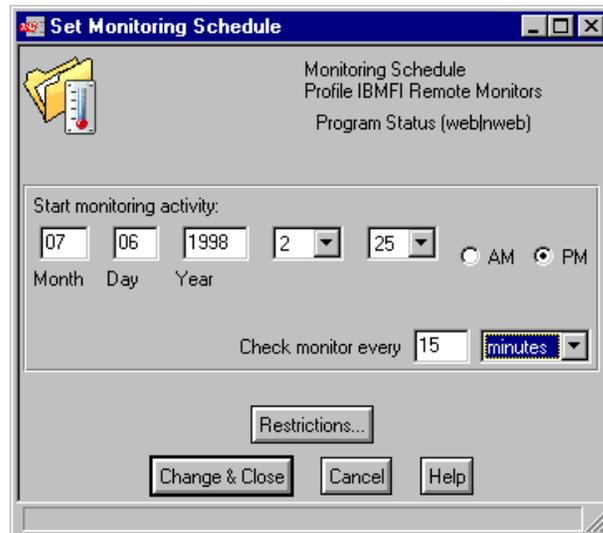


Figure 61. Set Monitoring Schedule Window

1. Select how often you want to run the monitor. In our case we have chosen 15 minutes.
2. You can restrict during what time and which days the monitor will run. For example, you can choose to have the monitor to run Monday through Friday, 8 a.m. to 5 p.m. Selecting the **Restrictions...** push button will allow you to enter this type of information.
3. Click on **Change & Close** to set the schedule.

If you wish, by selecting the Set Message Styles... push button, you can customize the message style for any of the textual response actions. You may also define actions to be performed on managed nodes at the time the profile is distributed to them by selecting the Set Distribution Actions... push button.

4. Save and distribute the profile (see step 5 in 4.1.1, "Customizing Notes Server Monitors" on page 61).

4.1.1.4 Disabling and Enabling Monitors

With Tivoli Distributed Monitoring, you have the capability to disable a monitor without actually deleting it. Disabling the monitor allows you to prevent the monitor from running on the systems it is distributed to, but it leaves the definition intact. Enabling the monitor and redistributing the profile to its subscribers will reactivate it.

To disable or enable a monitor, from the TME 10 Distributed Monitoring Profile Properties window (Figure 56 on page 62) do the following:

1. Select the monitors you want to disable/enable.
2. Click on **Disable Selected/Enable Selected**.
3. Save and distribute the profile (see step 5 in 4.1.1, "Customizing Notes Server Monitors" on page 61).

4.1.2 Starting and Stopping the Monitors

Once you have distributed a monitor profile to a Domino server, the monitors are defined to the system and the enabled monitors begin to work.

The task Stop DomainAlias Monitors (refer to 3.2.7, “Stopping Notes Monitors” on page 54) stops the Tivoli Distributed Monitoring Notes monitors. To restart these monitors, you can use the task Start DomainAlias Monitors (refer to 3.2.6, “Starting Notes Monitors” on page 54). Both of these tasks are available through the Domino server pop-up menu, or in the task library DomainAlias Tasks.

Note that stopping and starting monitors using the above two tasks stops and starts *all* of the monitors defined in the DomainAlias Central and Remote Monitors monitoring collections. Disabling and enabling a monitor only involves the status of the specific monitors selected in the Tivoli Distributed Monitoring profile.

4.1.3 List of the Tivoli Manager for Domino Monitors

The monitoring collection DomainAlias Remote Monitors that was automatically created for you when configuring the Tivoli Manager for Domino contains three types of monitoring sources:

- Statistic Monitors** Run a Notes API program that queries Notes statistics. If the Domino server is down, the API call does not return any statistics. In this case an event AMS_NotesMonitor_Alert is sent. There are a number of statistic monitoring sources available with the Tivoli Manager for Domino DomainAlias Remote Monitors monitoring collection.
- Program Status Monitors** These monitors behave just as the standard Tivoli Distributed Monitoring Application Status monitor, but you can specify different process names for UNIX and NT. They check the process status of the Notes server and the Notes server add-in tasks and return up if the process is running; otherwise, it returns down.
- Server Available Monitor** Runs a Notes remote console command to ping the Domino server and returns up if the remote console command successfully executes the command; otherwise, it returns down. This monitor assists in determining if the Domino server itself is responsive. This is an expensive monitor, and is not recommended to be run very frequently.

In the *Tivoli Manager for Domino User's Guide* you can find a complete list of all the Notes monitors available in each monitoring source. This section contains a brief description of the monitoring sources for reference purposes.

Table 5. Tivoli Manager for Domino Monitors

Monitoring Source	Description
Program Status	Determines if the Notes server and Notes server add-in processes are up.
Server Available	Determines if the Notes server is responsive.

Monitoring Source	Description
Server	Notes server load statistics (numeric values).
Database	Notes database statistics (numeric values).
Memory	Notes memory statistics (numeric values).
Memory Assessment	General assessment of free memory available: Painful, Normal, or Plentiful.
Replication	Notes replication statistics (numeric values).
Mail	Mail, mail router, X400 MTA and SMTP MTA statistics.
Disk	Disk space and swap file statistics.
Generic	Statistics reported by the Query Stat Notes API call that reports a numeric value.
Agent Monitor	Statistics reported by the show stat agent command that returns a numeric value.
Domino	Statistics reported by the show stat Domino command that returns a numeric value.
Domino Settings	Statistics reported by the show stat Domino command that returns a string value.
Web Monitor	Statistics reported by the show stat web command that returns a numeric value.

4.2 Notes TEC Adapter

As a part of the Configure Tivoli for a Notes Domain Server task (see 2.4.8, “Configuring Tivoli for a Notes Domain Server” on page 29), some configuration is done at the Notes server in order to get events generated by the Notes server to TEC. In order to better understand how the event forwarding process works, we step through these configuration steps that take place on the Notes servers in a bit more detail:

- The Tivoli Manager for Domino provides a TEC adapter as a Notes add-in task, called `tecad_notes`, which forwards the Notes events to TEC. The configuration task adds this TEC adapter as a Notes add-in task at the Notes server.
- Our configuration task also configures the `tecad_notes` add-in task and the Notes Event task to automatically start whenever the Notes server is started by adding `tecad_notes` and `Event` to the `ServerTasks` line in the `notes.ini` file, as shown below:

```
ServerTasks=tecad_notes,Router,Replica,Update,Stats,Amgr,Sched,CalConn,AdminP,Report,Event,tivaddin
```

The Event task collects and processes Notes server events.

Note: The `tecad_notes` task must be running when the Event task starts so that we can ensure all events are forwarded to TEC, so the configuration task inserts `tecad_notes` at the beginning of the `ServerTasks` line. If you don't have

the `tecad_notes` task starting before the Event task, edit the `notes.ini` file and change the `ServerTasks` line so that it is.

- In order to determine what actions to take on what types of events, the Event task accesses the `events4.nsf` database. Event Monitor documents that are stored in the `events4.nsf` database control what types of events to monitor and where to send them. The Configure Tivoli for a Notes Domain Server attempts to add an Event Monitor document for each Notes event type. If an Event Monitor document already exists for a given event type, then Tivoli Manager for Domino prints out a warning and does not overwrite that Event Monitor.
- A notification method is a part of an Event Monitor document that specifies where to send an event. Our configuration task adds a new notification method, also named `tecad_notes`, in the `events4.nsf` database (see Figure 62). This notification method specifies a new event destination, our TEC adapter add-in task, for Notes events. Our configuration task also adds this notification method to each of the Event Monitor documents for all of the event type's severities. This step, together with the previous step, specifies that all Notes server events of all severities be forwarded to the TEC adapter.

Refer to the *Lotus Notes Administrator's Guide* for more information about the `events4.nsf` database.

4.2.1 Event Filtering at the Notes Server

Now that you have a better understanding of how the Notes server has been configured by Tivoli Manager for Domino to forward events to the Tivoli event server, we can begin to investigate how to make changes to the customization that has been done for you at the Notes server. There are two ways of filtering the events that are forwarded to TEC by the TEC adapter, `tecad_notes`, before the events are forwarded to the Tivoli event server, or TEC server, for processing:

- Using the Notes Server Statistics and Event Configuration database (`events4.nsf`).

This method filters by event type and severity using the `events4.nsf` database.

- Using the adapter configuration file (`tecad_notes.conf`) located on the Notes server:

This method filters by the TEC event classes and slots. You may want, or in some cases need, to use this method if:

- You want to filter on something other than severity and event type.
- You want to filter the `TECAD_NOTES_STARTED` and `TECAD_NOTES_SHUTDOWN` events, since they are not controlled by the Notes event server task.
- You want to filter out a particular severity across all event types. In the `events4.nsf` database, you would have to create one event monitor document for each severity. In the `tecad_notes.conf` file, you can filter out a severity for all event types, instead of creating one event monitor document for each severity you wish to monitor.

We have found the simplest approach is to leave the `events4.nsf` database configured as it is, sending all the Notes events to the TEC adapter, and configure the adapter using the adapter configuration file (`tecad_notes.conf`) to

filter out the events you do not wish to be forwarded to the TEC server. However, we will describe how to filter using both methods in the next two sections.

4.2.1.1 Filtering Using the Notes Server Statistics and Event Configuration Database

The Notes Server Statistics and Event Configuration database (events4.nsf) is used to configure Notes server event handling, statistic monitoring, ACL monitoring, and replication monitoring.

As mentioned earlier, the Configure Tivoli for a Notes Domain Server task (2.4.8, “Configuring Tivoli for a Notes Domain Server” on page 29) modifies this database in the following ways:

- It adds the tecad_notes notification method, shown below.

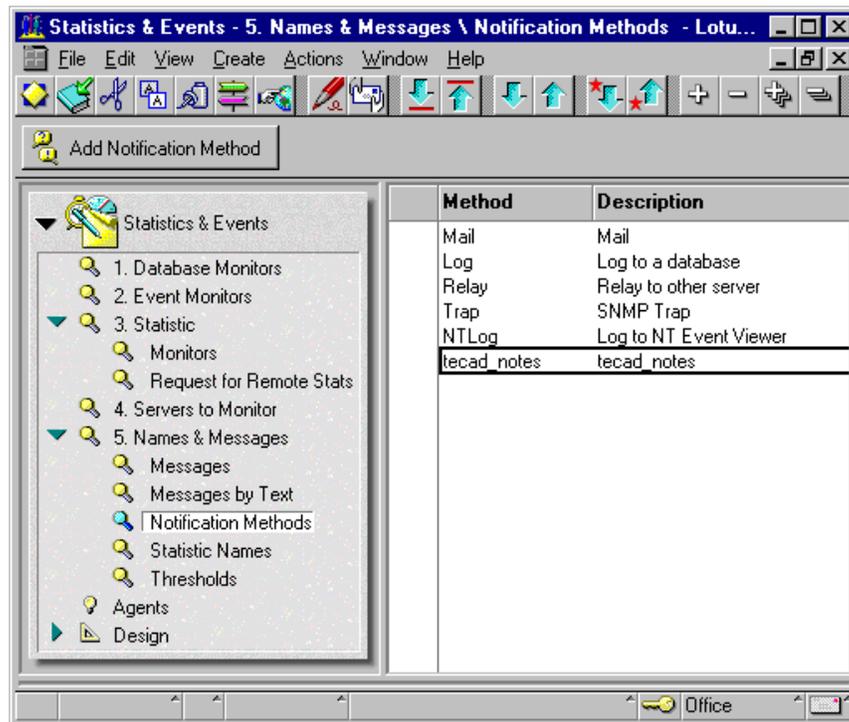


Figure 62. Statistics and Events: Names and Messages: Notification Methods

- It attempts to add an Event Monitor for each event type, with tecad_notes as the notification method for all severities as shown below:

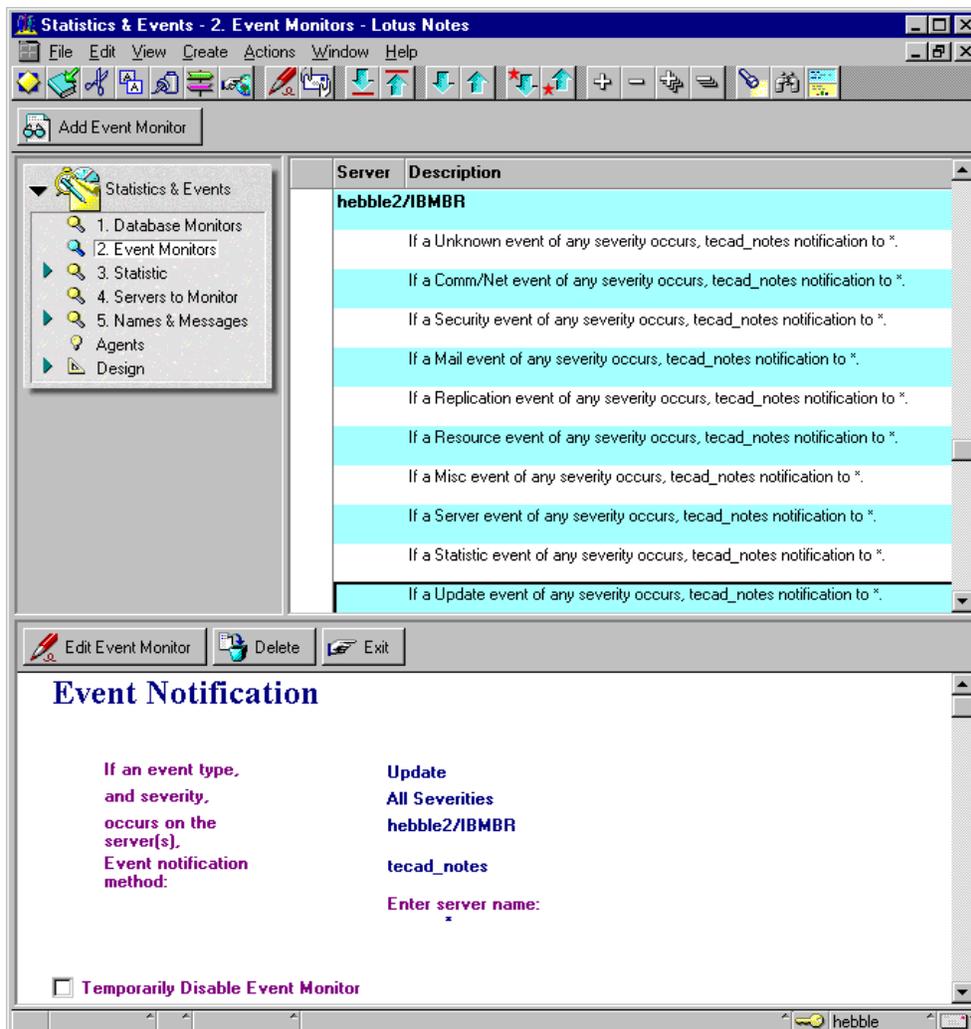


Figure 63. Statistics and Events: Event Monitors

As a filtering example using the events4.nsf database, if you do not wish to receive any Update events, you would simply select the Update Event Monitor Document (shown above in Figure) and select the **Delete** push button or in Lotus Domino Server Version 4.6 click on Temporarily Disable Event Monitor in Edit Mode.

If you wanted to only receive, as another example, fatal and failure events, you could control this using the events4.nsf database as well. You would want to change each Event Monitor document by selecting the Event Monitor document, and selecting **Edit Document** from the **Actions** pull-down menu. Once you are in edit mode for the document, change the event severity from all to fatal. You would then add another Event Monitor document for every event type, by selecting the **Add Event Monitor** push button. All information in the Event Monitor document would be the same as it was for the fatal severity Event Monitor documents, with the exception of the Event Severity field, where we would select **Failure**.

In addition to the Event Monitor documents, you can also define Database Monitor documents to further customize the events generated and forwarded to TEC. The Database Monitor documents can report any access control list (ACL)

changes and replication failures for a specified database. The ACL monitor generates Security events and the Replication monitor produces Replication events. When these events are generated, they are processed by the Notes Event server task using the Event Monitor documents, just as the other events were. In Domino Server Version 4.6, an ACL monitor and replication monitor are created by default. In earlier versions of Notes and Domino Powered by Notes, these database monitor documents are not created by default. The Tivoli Manager for Domino does not create any Database Monitor documents during its configuration. An ACL monitor and Replication monitor document are shown below.

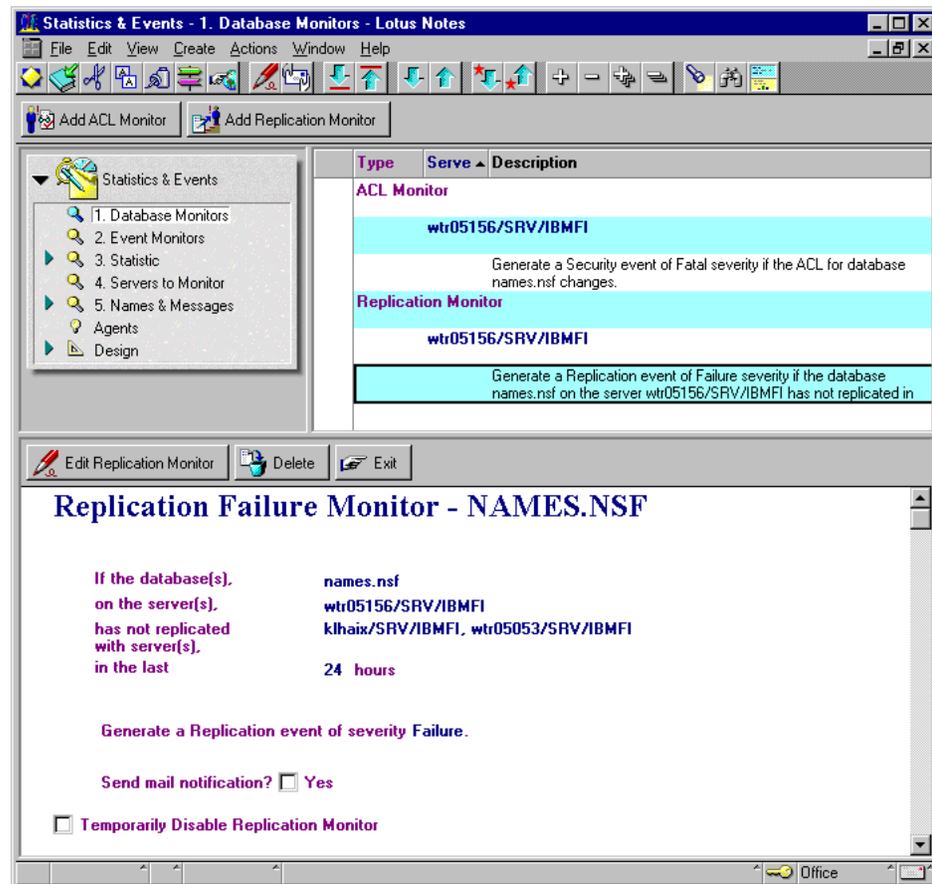


Figure 64. Statistics and Events: Database Monitors

To add these Database Monitor documents, select **Database Monitors** under Folders and Views. To add an ACL monitor, simply select the **Add ACL Monitor** push button. To add a replication monitor, select the **Add Replication Monitor** push button. We defined our ACL monitor to generate a Security event of fatal severity when the ACL for the names.nsf database changes. We defined our replication monitor to generate a Replication event of Failure severity if the names.nsf database has not been replicated in 24 hours with klhaix/SRV/IBMF1 or wtr05053/SRV/IBMF1 servers.

See the Lotus Domino/Notes product documentation for further details on tailoring Monitor documents to customize event generation from the Notes server.

4.2.1.2 Filtering Using the Adapter Configuration File

The adapter configuration file name is `tecad_notes.conf` and it is located in the Notes server data directory (usually `$HOME/notesr4` in UNIX systems and `C:\WINNT` in NT systems). The default `tecad_notes.conf` file that was created for our environment after the configuration by the Tivoli Manager for Domino is shown below:

```
ServerLocation=klhaix
ManagedNode=wtr05156
TMRRegion=klhaix-region
DomainAlias=IBMFI
LogFile=c:/winnt/tecad_notes.log
#Source=tecad_notes
#ServerPort=0
#MaxEventType=10
#MaxEventSeverity=6
#QueueName=tecad_notes
#InputDestName=events4.nsf
#MapUnknownSeverity=1
#ServerLocation=outfile
#TestMode=yes
#Filter:Class=NOTES_EVT;severity=HARMLESS
#Debug=0
```

Figure 65. Adapter Configuration File: `tecad_notes.conf`

The lines starting with `#` are commented. The most important fields are (please refer to *Tivoli Manager for Domino User's Guide* for more information):

ServerLocation	Specifies the host name of the event server to forward the events to.
ManagedNode	Specifies the name of the managed node that the Notes server resides on and is used to set the event slots <code>managednode</code> and <code>adapter_host</code> in the TEC rule sets.
TMRRegion	Specifies the top-level TMR this Notes server system has been defined to be a part of and is used to set the event slot region in the TEC rule sets.
DomainAlias	Specifies the domain alias name this server has been defined to be a part of and is used to set the event slot <code>sub_source</code> in the TEC rule sets.
LogFile	Specifies the file name where the adapter will log its actions.
MapUnknownSeverity	Specifies whether or not to map unknown severity events to harmless events. If <code>MapUnknownSeverity=1</code> , then the mapping will occur.
Filter	Specifies events that should not be forwarded to the event server. Each event filter should be on a separate line and the class name must match a defined class name. The format for an event filter entry is: <code>Filter:class=ClassName;slot=Value;slot=Value;...</code>

FilterCache Filters the events sent to the event adapter buffer. Events are sent to this buffer when the adapter is unable to connect to the event server. The format for an event buffer filter entry is:

```
FilterCache:class=ClassName;slot=Value;slot=Value;..
.
```

FilterMode Modifies the filtering behavior (see Table 6).

Table 6. FilterMode Option

FilterMode Value	Are Sent to the Event Server
FilterMode=OUT (default)	Only the events that <i>do not match</i> the filters.
FilterMode=IN	Only the events that <i>match</i> the filters.

Filtering with the tecad_notes.conf file is done using the Filter entries. We show you another example later in this chapter in 4.4.2, “Filtering HARMLESS tecad_notes Events” on page 81, but following are some simple examples of how you could filter certain events using the Filter parameter in the tecad_notes.conf file. Multiple filter entries may exist in the tecad_notes.conf file:

1. This line will filter all events of class NOTES_EVT_REPLICA (Notes replication events) that have severity HARMLESS (Notes severity normal).

```
Filter:class=NOTES_EVT_REPLICA;severity=HARMLESS
```

2. This line will filter the tivaddin started event. Note that the quotes are necessary because of the space in the msg value.

```
Filter:class=NOTES_EVT;msg="tivaddin started"
```

3. The following lines filter the tecad_notes start and shutdown events:

```
Filter:class=TECAD_NOTES_STARTED
Filter:class=TECAD_NOTES_SHUTDOWN
```

In each of the above examples, when FilterMode=Out (or if there is no FilterMode entry in the configuration file), the specified events will *not* be forwarded to the Tivoli Event server.

4.3 Tivoli Manager for Domino Rule Base

The Tivoli Manager for Domino defines event classes and rule sets for managing the tecad_notes TEC adapter and the Notes Sentry monitors' events at the TEC server. The task Configuring an Event Server (see 2.4.1, “Configuring the Event Server” on page 21) installs these event classes and rule sets.

In the rule base directory you defined in this configuration task (in our example /usr/local/Tivoli/tec.rb/Notes), you can find the usual TEC directories: TEC_CLASSES, TEC_RULES and TEC_TEMPLATES.

In the TEC_CLASSES directory you find the Notes-related BAROC files:

notes_tecad.baroc

Holds event class definitions for the events produced by the tecad_notes adapter.

notes_server_monitor_35.baroc

Holds event class definitions for the events produced by the Notes Sentry monitors.

In the TEC_RULES directory you find the Notes-related rule sets:

notes_tecad.rls

Contains rule sets to deal with events produced by the tecad_notes adapter.

notes_monitor.rls

Contains rule sets to deal with events produced by the Tivoli Distributed Monitoring Notes monitors.

notes_default.rls

Is an empty rule set. This rule set was created for use when correlating notes_tecad events with Notes events generated by Tivoli Distributed Monitoring monitors.

For information on the GEM-related BAROC files or rule sets, see “Configuring the Event Server” on page 182.

4.3.1 Tivoli Distributed Monitoring Event Classes

The Tivoli Distributed Monitoring event classes for the Tivoli Manager for Domino are defined in the file notes_server_monitor_35.baroc. Please see A.1.2, “notes_server_monitor_35.baroc” on page 205 for a complete listing of the file.

The first event class definition, Notes_Server_Monitors, is a superclass for all Tivoli Distributed Monitoring Notes events. This is used to define which fields must be equal for an event to be seen as a duplicate. It inherits from the Sentry3_5_Base event class.

The other classes inherit from the Notes_Server_Monitors event class and correspond to a Notes Tivoli Distributed Monitoring monitoring source. These event class and monitoring source mappings are shown in the table below:

Table 7. Tivoli Distributed Monitoring Event Classes for Tivoli Manager for Domino

Monitoring Source	BAROC Class Name
Notes Program Status	Notes_Program_Status_Monitor
Server Available	Notes_Server_Available_Monitor
Server	Notes_Server_Monitor
Database	Notes_Database_Monitor
Memory	Notes_Memory_Monitor
Memory Assessment	Notes_Memory_Assessment_Monitor
Replication	Notes_Replication_Monitor
Mail	Notes_Mail_Monitor
Disk	Notes_Disk Monitor
Domino	Notes_Domino Monitor
Note: When a monitor fails, an AMS_NotesMonitor_Alert class event is sent.	

Monitoring Source	BAROC Class Name
Domino Settings	Notes_DominoSettings_Monitor
Agent	Notes_Agent_Monitor
Web	Notes_Web_Monitor
Generic	Notes_Statistics_Monitor
Note: When a monitor fails, an AMS_NotesMonitor_Alert class event is sent.	

Note: Refer to 4.1.3, “List of the Tivoli Manager for Domino Monitors” on page 68 for a brief explanation of each Notes Tivoli Distributed Monitoring monitoring source.

4.3.2 tecad_notes Event Classes

The Tivoli Manager for Domino tecad_notes event classes are defined in the file notes_tecad.baroc. Please see A.1.1, “notes_tecad.baroc” on page 201 for a complete listing of this file. The first event class definition in this file, Notes_Heartbeat_event, is not used in this release of Tivoli Manager for Domino. The second event class definition, Notes_Alert, is a superclass for all Notes statistic events. This is used to define which fields must be equal for an event to be seen as a duplicate. It inherits from the EVENT event class. The other classes reflect Notes event types. Notes event types are actually constants (have a numeric value assigned to them). Nine of these numeric event types (1-9), by default, have a name associated with them by Notes, but users can modify them or add their own event types (numbers and names). An additional event type of 0 with a name of Unknown was added by Tivoli Manager for Domino.

When the TEC adapter receives a user-defined event type (an event type greater than 9) from the Domino server, it sends an event of type NOTES_EVT_<number> to the TEC server. To minimize the need for changes in the adapter rule base for user-defined event types, the BAROC file provides the classes NOTES_EVT_10 through NOTES_EVT_19. If your environment requires event type numbers greater than 19, you will need to add additional BAROC classes in the notes_tecad.baroc file for them. There is also a NOTES_EVT_DOMINO event class definition defined in the notes_tecad.baroc file which is not used by default at present.

The pre-defined notes event types and their BAROC class names are shown below:

Table 8. Tivoli Manager for Domino Adapter Event Classes

Notes Event Type	BAROC Class Name
EVT_UNKNOWN (0)	NOTES_EVT
EVT_COMM (1)	NOTES_EVT_COMM
EVT_SECURITY (2)	NOTES_EVT_SECURITY
EVT_MAIL (3)	NOTES_EVT_MAIL
EVT_REPLICA (4)	NOTES_EVT_REPLICA
EVT_RESOURCE (5)	NOTES_EVT_RESOURCE

Notes Event Type	BAROC Class Name
EVT_MISC (6)	NOTES_EVT_MISC
EVT_SERVER (7)	NOTES_EVT_SERVER
EVT_ALARM (8)	NOTES_EVT_ALARM
EVT_UPDATE (9)	NOTES_EVT_UPDATE
10 through 19	NOTES_EVT_10 through NOTES_EVT_19
N/A	TECAD_NOTES_STARTED
N/A	TECAD_NOTES_SHUTDOWN

The tecad_notes TEC adapter also maps Notes severities to valid TEC severities. A mapping of these severities is shown below in Table 9.

Table 9. Event Severities Mapping

Notes Severity	BAROC Severity
Unknown	UNKNOWN or HARMLESS
Note: BAROC severity is dependent on value of MapUnknownSeverity in tecad_notes.conf file.	
Fatal	FATAL
Failure	CRITICAL
Warning (high)	MINOR
Warning (low)	WARNING
Normal	HARMLESS
<severity>	NOTES_SEV_<sev>
Note: A user can define additional notes severities.	

4.3.3 Tivoli Distributed Monitoring Rule Set

The Tivoli Distributed Monitoring rule set for the Tivoli Manager for Domino defined in the file notes_monitor.rls, provides the following customized automation:

- Forwards all Notes monitor events to the event server indicated in the Configuring Event Server task (2.4.1, "Configuring the Event Server" on page 21) if it was specified.
- Closes any Notes monitor duplicate events. The oldest event will be closed.
- Closes HARMLESS Notes monitor events automatically after 60 seconds.
- Closes any outstanding server unavailable events when a server available event is received.
- When receiving a process up event, closes any corresponding process down event for a specific server or Notes add-in task.
- When receiving a host up event, closes any corresponding host down event. Also handles Sentry2_0_host and universal_host events, both of which result from Tivoli Distributed Monitoring host availability monitors.

- Discards any host down duplicate events.
- Drops any incoming Sentry events for a Notes server machine if that Notes server machine is down.
- Drops any incoming Notes Program Status Monitor down or Notes Server Availability Monitor down events for a Notes server that is down.
- Closes any open Notes Program Status Monitor or open Notes Server Availability Monitor events when a Notes server down event is received.
- Drops any incoming AMS NotesMonitor Alert events for a Notes server that is down.

The Tivoli Manager for Domino Sentry rule set (notes_monitor.rls) is shown in A.2.2, “notes_monitor.rls” on page 209. For more information about the rules, refer to *Tivoli Manager for Domino User’s Guide* or to the notes_monitor.rls file.

4.3.4 Tivoli Manager for Domino tecad_notes Rule Set

The Tivoli Manager for Domino tecad_notes rule set defined in the file notes_tecad.rls provides the following automation:

- Forwards all notes_tecad events to the event server indicated in the Configuring Event Server task (2.4.1, “Configuring the Event Server” on page 21) if it was specified.
- Closes any notes_tecad duplicated events. The oldest event will be closed.
- Closes HARMLESS notes_tecad events automatically after 60 seconds.
- When receiving a TECAD_NOTES_STARTED event, closes any corresponding TECAD_NOTES_SHUTDOWN.

The Tivoli Manager for Domino tecad_notes rule set (notes_tecad.rls) is shown in A.2.1, “notes_tecad.rls” on page 206. For more information about the rules please refer to the *Tivoli Manager for Domino User’s Guide* or to the notes_tecad.rls file.

4.4 Notes Monitoring Customization Examples

In order to monitor your Domino/Notes environment using the Tivoli Manager for Domino, you need to perform the required tasks described in Chapter 2, “Installation and Configuration” on page 9. After those tasks have been successfully executed, you have:

- The event server prepared to receive Notes events.
- An event console configured to view the Notes events.
- The tecad_notes running and sending events to TEC.
- Two profile managers with Sentry profiles: DomainAlias Remote Monitors and DomainAlias Central Monitors.

The last step you need to perform to receive the full monitoring capabilities of the Tivoli Manager for Domino is to distribute the DomainAlias Remote and Central Monitors profiles. This will activate your Tivoli Distributed Monitoring Notes monitors on the targets they were distributed to.

In this section we show you the following:

1. How to distribute the default profiles.
2. How to filter out HARMLESS tecad_notes events.
3. How to create a new Notes Tivoli Distributed Monitoring profile manager.
4. How to modify the Notes rule base.

In these examples, the DomainAlias we are using is IBMFI.

4.4.1 Distributing the Default Profiles

There are several ways to distribute the profiles. One method is described in step 5 in 4.1.1, “Customizing Notes Server Monitors” on page 61.

An alternative method is:

1. In the DomainAlias policy region, select **Distribute...** from the appropriate profile manager pop-up menu (Figure 66). In this example, our profile manager is IBMFI Remote Monitors.

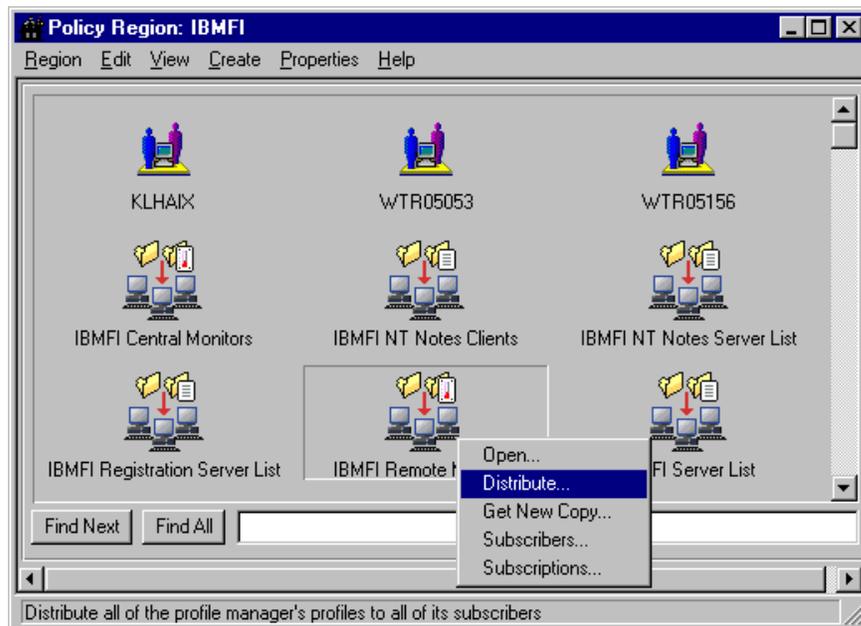


Figure 66. Distributing the IBMFI Remote Monitors Profile

2. In the Distribute Profiles dialog, click on **Distribute Now**. Alternatively, you could schedule the distribution of the profile by selecting the **Schedule...** push button and specifying the date and time you wish for the distribution to take place.



Figure 67. Distribute Profiles

Repeat the same steps to distribute the DomainAlias Central Monitor profile contained in the DomainAlias Central Monitors profile manager.

Once the monitor profiles have been distributed, at the event console, you can see both tecad_notes events and Tivoli Distributed Monitoring Notes monitors events (Figure 68). Note that the host name from the tecad_notes events is the actual host name of your Domino machine (wtr05156 in our case), and for the Notes monitors events, the host name is the server alias name (WTR05156 in our example).

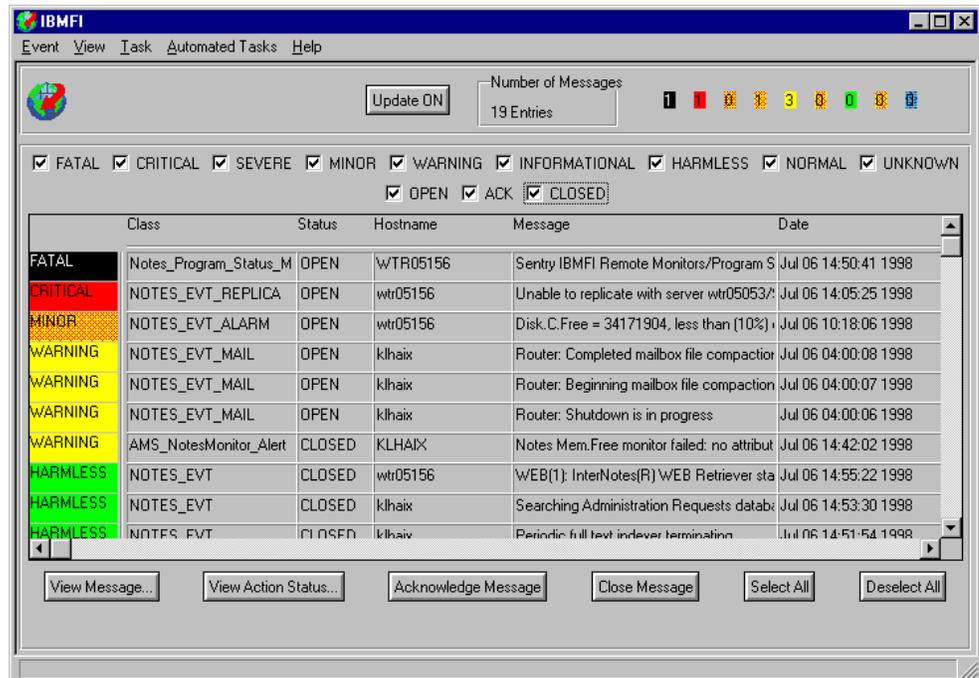


Figure 68. Event Console with Notes Events

4.4.2 Filtering HARMLESS tecad_notes Events

Once you have the Tivoli Manager for Domino configured and operational, you will see that the TEC adapter, tecad_notes, sends many HARMLESS events. They correspond to the Notes Normal events. They may also correspond to the Notes Unknown events if the tecad_notes.conf file on the Domino server has been configured with a MapUnknownSeverity=1 entry. The Tivoli Manager for Domino has customized your Tivoli and Domino/Notes environment so that the

monitoring and management of your Notes domain can occur from the event console and desktop.

Since all of the Notes-generated events are forwarded to your event console by default, you may want to filter out the HARMLESS events and receive only the events that inform you of unusual situations.

We show you how to set up the filtering of HARMLESS events in the following steps:

1. Edit the `tecad_notes.conf` file (see 4.2.1.2, “Filtering Using the Adapter Configuration File” on page 74). This file is located in your Notes server data directory (usually `$HOME/notesr4` in UNIX systems and `C:\WINNT` in NT systems).
2. Add the lines shown in Figure 69 to the end of the file.

```
Filter:class=NOTES_EVT;severity=HARMLESS
Filter:class=NOTES_EVT_UNKNOWN;severity=HARMLESS
Filter:class=NOTES_EVT_COMM;severity=HARMLESS
Filter:class=NOTES_EVT_SECURITY;severity=HARMLESS
Filter:class=NOTES_EVT_MAIL;severity=HARMLESS
Filter:class=NOTES_EVT_REPLICA;severity=HARMLESS
Filter:class=NOTES_EVT_RESOURCE;severity=HARMLESS
Filter:class=NOTES_EVT_MISC;severity=HARMLESS
Filter:class=NOTES_EVT_SERVER;severity=HARMLESS
Filter:class=NOTES_EVT_ALARM;severity=HARMLESS
Filter:class=NOTES_EVT_UPDATE;severity=HARMLESS
```

Figure 69. Lines to Filter Out the `notes_tecad` HARMLESS Events

3. Stop and start the Notes event adapter (see 3.2.8, “Starting Notes Event Adapters” on page 55 and 3.2.9, “Stopping Notes Event Adapters” on page 55).

4.4.3 Creating a Notes Profile Manager

For our next example, suppose you have a set of Notes servers running Domino and the Web retriever, and another set that runs only the Notes server.

If you distribute the default monitor profile to all of the Notes servers, you will receive FATAL events complaining about the http server task not running for the servers that do not run Domino.

One possible solution for this is outlined below. Details on how to perform each of these steps is provided in the following sections:

1. Customize the default Tivoli Distributed Monitoring remote monitors to hold only the monitors that are common to all Notes servers.
2. Create a new server list containing only the Domino servers.
3. Create a new profile manager for the Domino remote monitors.
4. In the new profile manager, create a new profile.
5. Add the Domino-specific monitors to the new profile.
6. Subscribe the Domino server list to the new profile manager.
7. Distribute both the default monitors and the Domino monitors.

Note: The default notes_monitor.rls rule set only works for monitors that are in the profile named DomainAlias Central Monitors or DomainAlias Remote Monitors (the default profiles you get with Tivoli Manager for Domino). If you want the TEC rules to work for the monitors in the new profile:

- The new profile must be named DomainAlias <Something>.
- The notes_monitor.rls rule set must be modified.

This modification procedure is described in 4.4.4, “Modifying the Notes Rule Base” on page 90.

An alternative solution to our described scenario above could be to create another profile and add it to the existing DomainAlias Remote Monitors profile manager in place of steps 3 and 4 above. This would simplify our example by eliminating the requirement of creating a new profile manager and modifying the Notes rule base. However, we want to step you through the scenario so we can show you as many customization options as possible. The difference between the end results of the two solutions to the scenario is only one of organization of profiles and profile managers on the desktop. The functionality of the two is equivalent.

4.4.3.1 Customizing the Default Monitors

To customize the default DomainAlias IBMFI remote monitors profile, follow the procedures described in 4.1.1, “Customizing Notes Server Monitors” on page 61.

For our scenario, we want to remove the following monitors:

- Program Status (http|nhttp)
- Web Monitor (Web.Retriever.URLs.Failed)

After you have deleted the monitors, save and distribute the profile to all of the Notes servers you wish to monitor (see step 5 in 4.1.1, “Customizing Notes Server Monitors” on page 61).

4.4.3.2 Creating the Server List

Follow the procedures described in 3.1.1, “Creating a New Server List” on page 43 to create the new server list. For our example, we have created a list named IBMFI Domino Server List.

After you have created the list, follow the procedures in 3.1.2, “Adding Subscribers to a Server List” on page 45 to add your Domino servers to the new list.

4.4.3.3 Creating the Profile Manager

The Tivoli Manager for Domino creates two kinds of profile managers in addition to the default profile manager (see Figure 70 on page 84):

List profile managers

Contains only subscription lists. It does not contain any profiles. Its icon contains a little list to uniquely identify it.

Monitors profile managers

Should hold the Notes monitors profiles and its subscribers. Its icon contains a little thermometer to uniquely identify it.

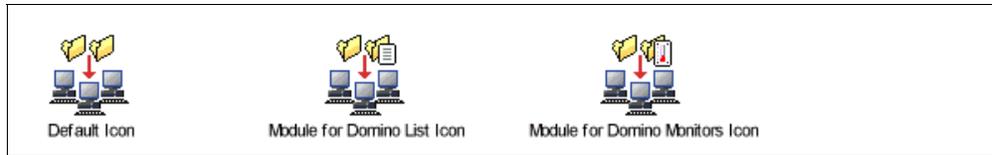


Figure 70. Profile Manager Icons

In order for the new profile manager that will contain the DomainAlias Domino remote monitor profile to look and behave like the monitors profile managers created by the module, after creating it you will need to do the following:

- Import the different bitmap to the new profile manager.
- Set the new profile manager's state to the Tivoli Manager for Domino monitor profile manager state.

To create the profile manager do the following:

1. In the DomainAlias policy region, select **Create -> Profile Manager...** (Figure 71).

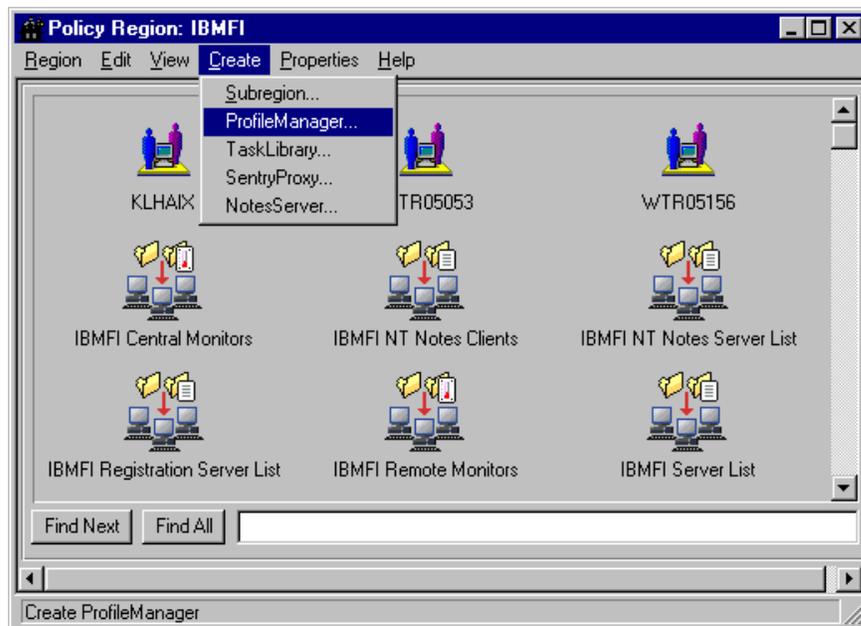


Figure 71. Creating a Profile Manager

2. In the Create Profile Manager dialog, enter the profile manager name and click on **Create and Close** (Figure 72). In our example the name is IBMFI Domino Remote Monitors.

Note: Don't forget that the name of this monitor profile manager should start with the DomainAlias name (in our case, IBMFI) in order for the TEC rule set to be able to apply to this new profile manager.

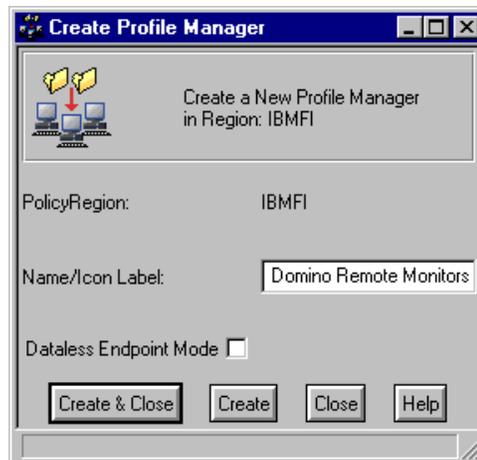


Figure 72. Create Profile Manager

If you want to use the command line, enter the following commands:

```
root@klhaix:/usr #wcrtpfmgrr @PolicyRegion:IBMFI "IBMFI Domino Remote Monitors"
1467869642.1.1043#IMF_CCMS::ProfileManager# IBMFI Domino Remote Monitors
root@klhaix:/usr #
```

Now we are ready to import the new bitmap to the profile manager and set its state to the Tivoli Manager for Domino monitor profile manager state, which can be accomplished with the following commands:

```
$ PRFMGR=`wlookup -r ProfileManager "IBMFI Domino Remote Monitors#klhaix-region"`
$ woutbitmap -l @ProfileManager:"IBMFI Domino Remote Monitors" \
> profile_manager_icon < $BINDIR/../generic_unix/TME/Notes/icons/SentryPMgr48.xpm
Adding customized version of bitmap profile_manager_icon for instance
@ProfileManager:IBMFI Domino Remote Monitors.
$ idlcall $PRFMGR _set_state "NotesSM"
$ REGION=`wlookup -r PolicyRegion "IBMFI#klhaix-region"`
$ idlcall $REGION refresh_collection
$
```

Figure 73. Creating a Notes Monitor Profile Manager

4.4.3.4 Creating the Monitors Profile

The Tivoli Manager for Domino creates a new response level of *reset* for the monitors. It is used to send an event informing the administrator when an exception condition no longer exists. We want our new profile to include this new response level. The easiest way to create this new profile with the same attributes is to clone the DomainAlias Monitor Default profile.

To clone the DomainAlias Monitor Default profile, perform the following steps:

1. From the administrators desktop menu, select **Desktop -> TMR Connections -> Top Level Policy Regions...** (Figure 74).

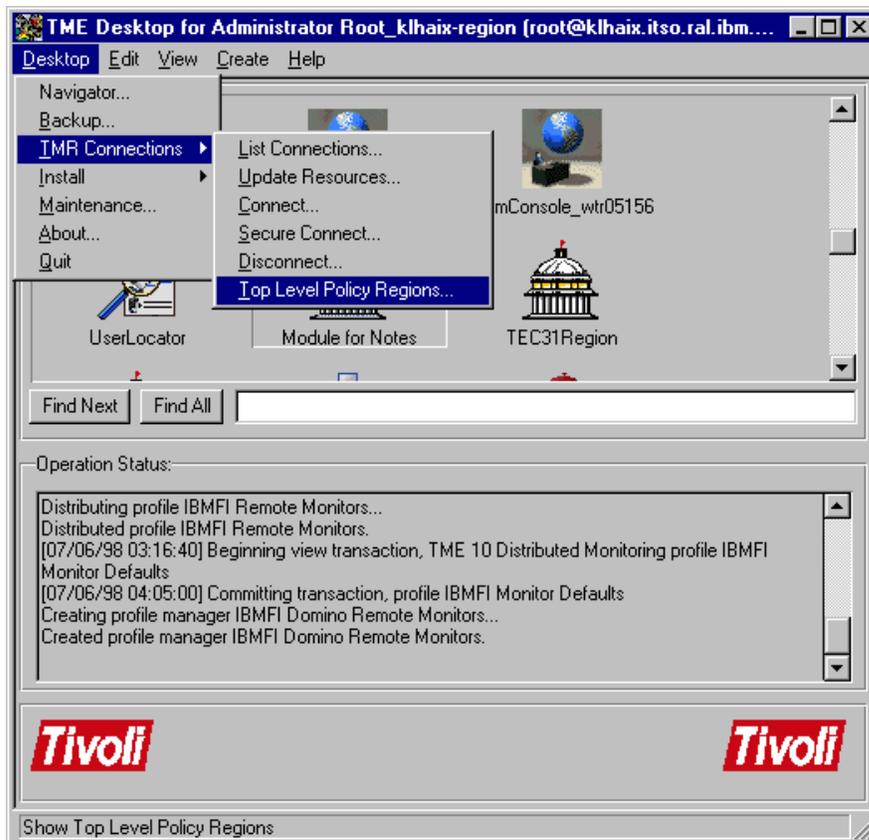


Figure 74. Selecting the Top Level Policy Regions

2. In the Top Level Policy Regions window, open the Tivoli/Sentry Defaults-RegionName policy region, where RegionName is the name of your TMR. In our case it is khaix-region (Figure 75).

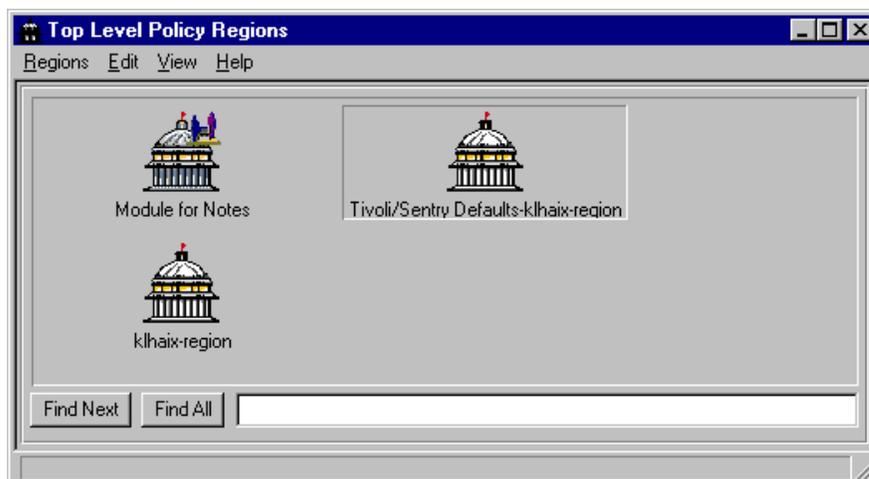


Figure 75. Top Level Policy Regions

3. In the Tivoli/Sentry Defaults policy region window, open the Tivoli/Sentry Defaults-RegionName profile manager (Figure 76).

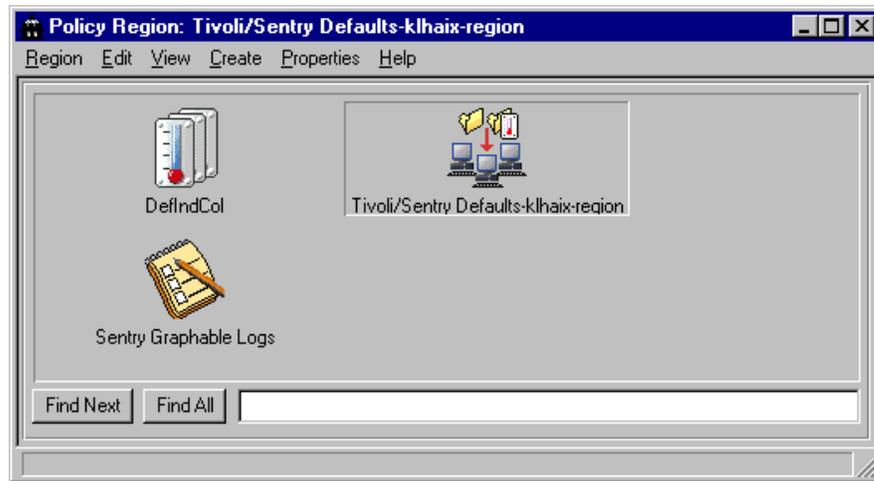


Figure 76. Policy Region: Tivoli/Sentry Defaults-klhaix-region

4. In the Tivoli/Sentry Defaults profile manager (Figure 77):

1. Click on the **DomainAlias Monitor Defaults** profile icon you want to clone.
2. Select **Edit -> Profiles -> Clone...** from the Profile Manager window.

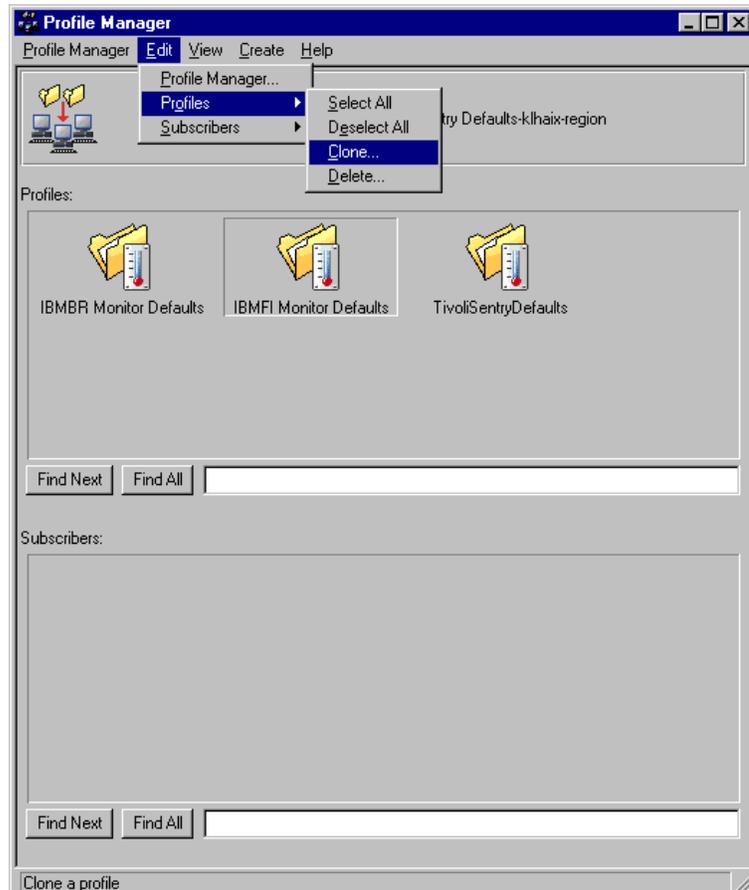


Figure 77. Profile Manager: Tivoli/Sentry Defaults-ITSO.RAL

5. In the Clone Profile window (Figure 78):
 1. Enter the new profile name in the Name/Icon Label field.
 2. Select the profile manager that will contain the new profile in the Clone to Profile Manager list. For our example, it is the IBMFI Domino Remote Monitors profile manager.
 3. Click on **Clone and Close**.

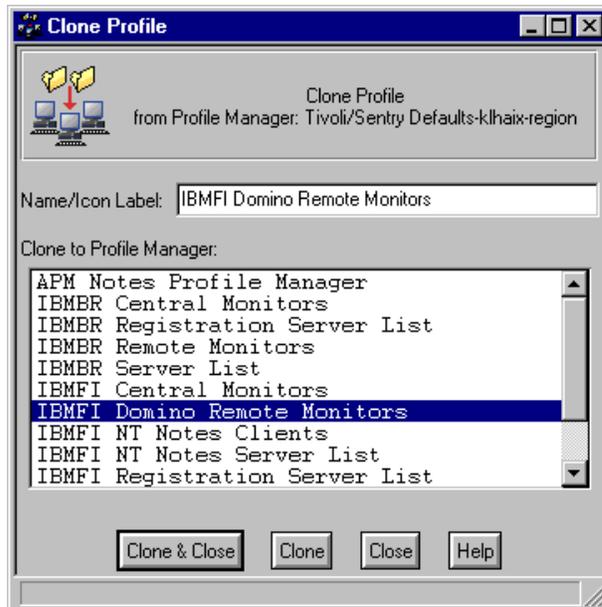


Figure 78. Clone Profile

If you want to use the command line, enter the following command:

```
$ wrcprf -c @SentryProfile:"IBMFI Monitor Defaults" \
> @ProfileManager:"IBMFI Domino Remote Monitors" SentryProfile \
> "IBMFI Domino Remote Monitors"
1467869642.1.1041#Sentry::All# IBMFI Domino Remote Monitors
$
```

4.4.3.5 Adding the Monitors

Now you need to add two program status monitors (http and web) and one web monitor (Web.Retriever.URLs.Failed) to the new profile. They are in the Notes DomainAlias Remote Monitors monitoring collection.

Follow the procedure described in 4.1.1.1, "Adding New Monitors" on page 63 and use the information in Table 10 and in Table 11 to add these monitors.

Table 10. Monitor Information: Critical and Severe

Monitor	Schedule	Response Level: Critical		Response Level: Severe	
		Trigger	Actions	Trigger	Actions
Program Status (http nhttp)	15 minutes	Becomes Unavailable	Change Icon Send TEC Event FATAL		
Program Status (web nweb)	15 minutes	Becomes Unavailable	Change Icon Send TEC Event FATAL		
Web Monitor	Hourly	Increases Beyond 20	Change Icon Send TEC Event CRITICAL	Increases Beyond 15	Change Icon Send TEC Event MINOR

Note: There are no responses for the levels normal and always.

Table 11. Monitor Information: Warning and Reset

Monitor	Schedule	Response Level: Warning		Response Level: Reset	
		Trigger	Actions	Trigger	Actions
Program Status (http nhttp)	15 minutes			Becomes Available	Change Icon Send TEC Event HARMLESS
Program Status (web nweb)	15 minutes			Becomes Available	Change Icon Send TEC Event HARMLESS
Web Monitor	Hourly	Increases Beyond 10	Change Icon Send TEC Event WARNING	Decreases Below 10	Change Icon Send TEC Event HARMLESS

Note: There are no responses for the levels normal and always.

Don't forget to save the profile. You cannot distribute the profile before subscribing the server list to it.

4.4.3.6 Subscribing the Server List

To subscribe the IBMFI Domino Server List in the IBMFI Domino Remote Monitors profile manger do the following:

1. Select **Subscribers...** from the IBMFI Domino Remote Monitors profile manager pop-up menu (Figure 79).

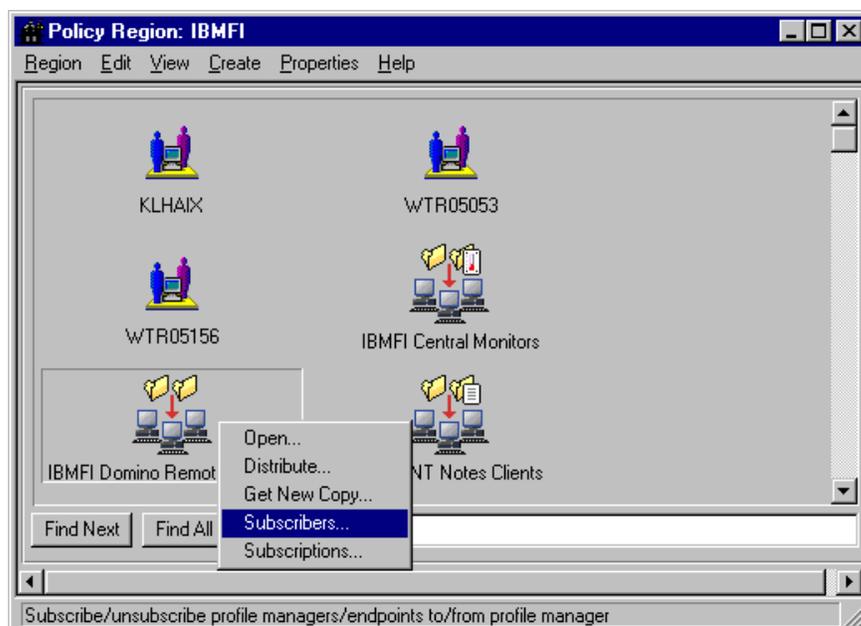


Figure 79. Profile Manager Pop-Up Menu

2. In the Subscribers dialog select **IBMFI Domino Server List** from the Available to become Subscribers list and transfer it to the Current Subscribers list (Figure 80).
3. Click on **Set Subscriptions and Close**.

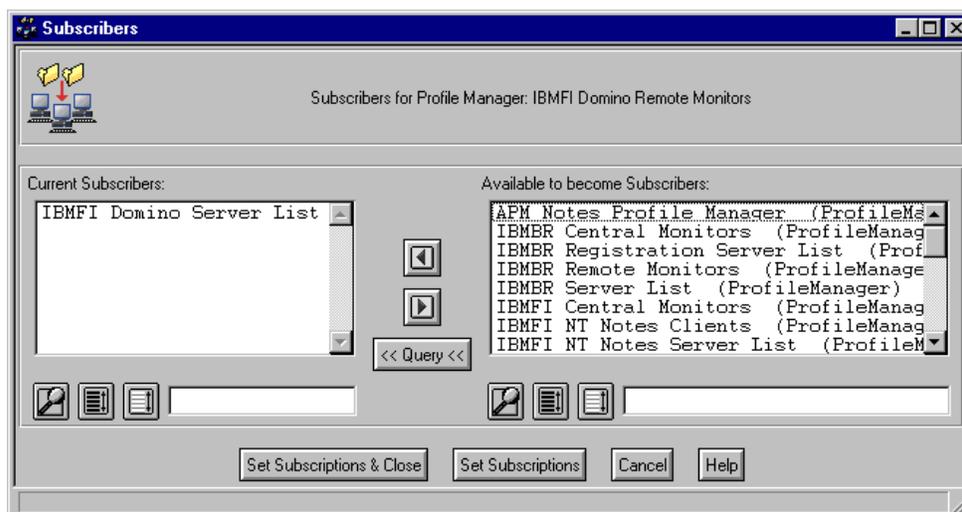


Figure 80. Subscribers

Now you can distribute the profile (see step 5 in 4.1.1, “Customizing Notes Server Monitors” on page 61).

4.4.4 Modifying the Notes Rule Base

In this example we show you how to extend the Notes rule base in order to do the following:

- Support profile manager names other than the default DomainAlias Remote Monitors and DomainAlias Central Monitors (see 4.4.3, “Creating a Notes Profile Manager” on page 82).
- For the statistic monitors:
 - When receiving a new event with a different response level (except for the response level reset), close the earlier event.
 - When receiving an event with the same reponse level, update the old event with the new message and drop the new event.
 - When receiving an event with response level reset, close the old related events and close itself.

4.4.4.1 Creating a New Rule Base

It's not recommended to modify a production rule base. If you want to modify an existing rule base, you should create a new one, copy the existing one to it and then modify the new rule base.

To create a new rule base perform the following steps:

1. Double-click on the **EventServer** icon in the administrators desktop.
2. In the Event Server Rule Bases window, select **Create -> Rule Base...** from the menu bar (Figure 81).

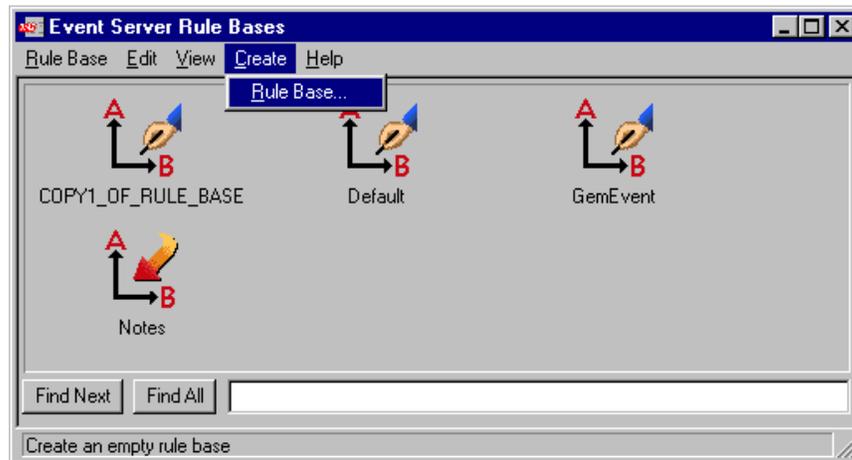


Figure 81. Event Server Rule Bases

3. In the Create a Rule Base dialog (Figure 82):
 1. Enter the new rule base name.
 2. Enter the rule base directory path. This directory will contain the event classes and rules for the new rule base.
 3. Click on **Create and Close**.

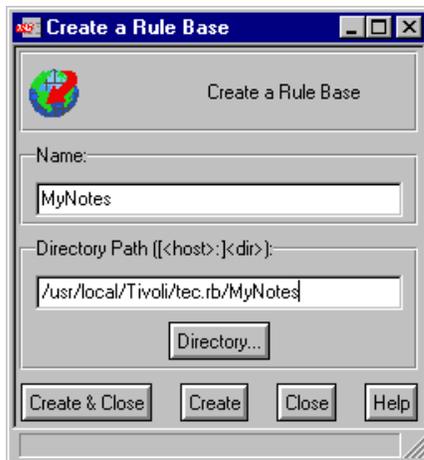


Figure 82. Create a Rule Base

4. Copy the existing Notes rule base to the new one:

1. Select **Copy...** from the existing Notes rule base pop-up menu (Figure 83).

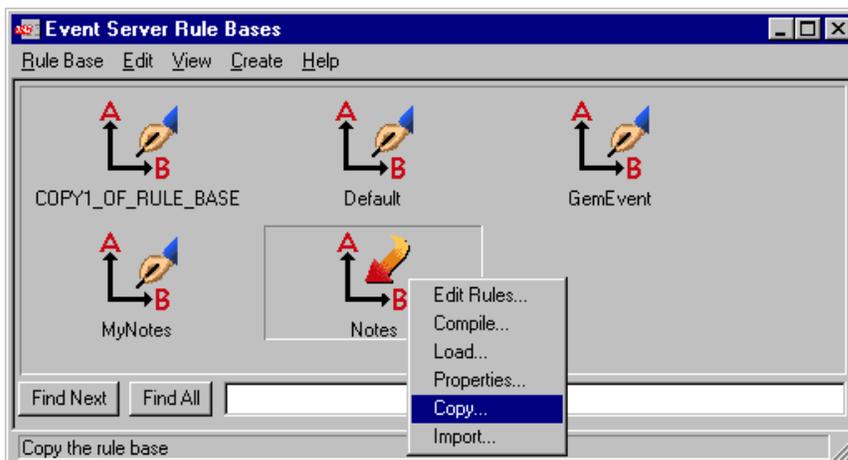


Figure 83. Copying a Rule Base

2. In the Copy Rule Base dialog (Figure 84), select the new rule base in the Destination rule base field, and select **Copy rules**, **Copy classes** and **Remove files in destination before copying**. Click on **Copy & Close**.

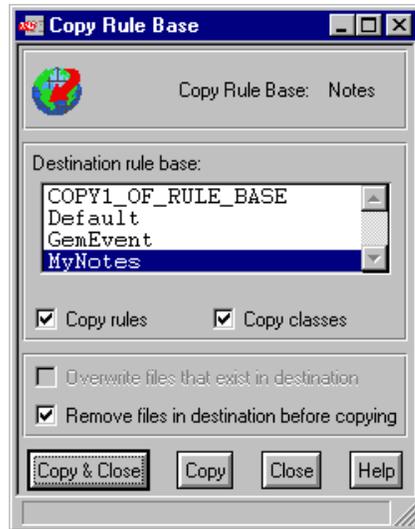


Figure 84. Copy Rule Base

You can also use the commands shown in Figure 85.

```

root@klhaix:/usr #wcrtrb -d /usr/local/Tivoli/tec.rb/MyNotes MyNotes
root@klhaix:/usr #wlsrb -d
Rule Base Name Directory
-----
Default          klhaix:/usr/local/Tivoli/bin/aix4-r1/TME/TEC/default_rb
COPY1_OF_RULE_BASEklhaix:/tec/rulebase
GemEvent         klhaix:/usr/local/Tivoli/bin/aix4-r1/TDS/EventService/GemEvent_rb
Notes            klhaix:/usr/local/Tivoli/tec.rb/Notes
MyNotes          klhaix:/usr/local/Tivoli/tec.rb/MyNotes
root@klhaix:/usr #wcpb -cr Notes MyNotes
root@klhaix:/usr #

```

Figure 85. Creating a New Rule Base

4.4.4.2 Changing the notes_monitor.rls to Support New Profile Manager Names

Now that we have made a copy of the rule base, we can modify the notes_monitor.rls rule set associated with it to define our new IBMFI Domino Remote Monitors profile to the rule base.

When editing the notes_monitor.rls rule set, the rule set_subsource_slot (Figure 86) is the first rule found in the notes_monitor.rls file.

The default rule set has been defined to look for a match of the sub_source field (which is the profile name) with the string DomainAlias Remote Monitors or DomainAlias Central Monitors. If a match is made, it sets the sub_source to DomainAlias. This will be used in all the other rules in notes_monitor.rls.

```

/*
RULE    set_subsource_slot
DESCRIPTION
    Test to see if the sub_source (which is the profile name) matches
    one of our known strings.  If it does, get the NotesDomainAlias
    from the string and reset the sub_source slot to the NotesDomainAlias.
    You probably shouldn't try this at home :-)

    It is important, even required that this rule be executed before
    all other monitor rules and the notes_default.rls ruleset are executed.
    All other rules depend upon this slot being set.

*/

rule:
set_subsource_slot:
(
    description: 'set the sub_source slot to the DomainAlias',
    event: _event of_class within ['Sentry2_0_Base']
        where [
            status: outside ['CLOSED'],
            sub_source: _sub_source
        ],
    reception_action:
    (
        /* set variable equal to a list of strings */
        _strs=[ ' Remote Monitors',' Central Monitors' ],
        /* member will look through strings looking for solutions */
        member(_m,_strs),
        /* atmpartsall is like strstr and will set _p to the location of the match */
        atmpartsall(_sub_source,_m,_p),
        /* decrement _p by 1 */
        _newp is _p - 1,
        /* atmpart will give us the substring .i.e the sub_source */
        atmpart(_sub_source,_domainalias,1,_newp),
        /* set the event slot */
        bo_set_slotval(_event,sub_source,_domainalias),
        re_mark_as_modified(_event,_)
    )
).

```

Figure 86. Rule set_subsource_slot

If you named your new profile as DomainAlias <Something>, you have to change the line in bold in Figure 86 to add the <Something>.

In our example the new profile is IBMFI Domino Remote Monitors. The changed line is:

```
_strs=[ ' Remote Monitors',' Central Monitors',' Domino Remote Monitors' ],
```

Notes:

1. The space after the opening single quote is required.
2. The rule matches the strings from right to left. In this case if Domino Remote Monitors was before Remote Monitors, the last would be matched first and the sub_source would be set to IBMFI Domino instead of IBMFI.

The easiest way to perform this modification is:

1. Go to your new rule base directory path. In our example (see 4.4.4.1, “Creating a New Rule Base” on page 91) the directory is /usr/local/Tivoli/tec.rb/MyNotes.
2. Go to the directory TEC_RULES.
3. Edit the file notes_monitor.rls in order to add the desired string. If you damage this file, you can get another default copy from the Notes rule base.
4. Compile the rule base.

```

root@klhaix: /usr/local/Tivoli/tec.rb/MyNotes/TEC_RULES #wcomprules MyNotes
Loading CLASSES...
Parsing BAROC file /usr/local/Tivoli/tec.rb/MyNotes/TEC_CLASSES/root.baroc
Parsing BAROC file /usr/local/Tivoli/tec.rb/MyNotes/TEC_CLASSES/tec.baroc
Parsing BAROC file /usr/local/Tivoli/tec.rb/MyNotes/TEC_CLASSES/tecad_logfile.baroc
Parsing BAROC file /usr/local/Tivoli/tec.rb/MyNotes/TEC_CLASSES/tecad_nt.baroc
Parsing BAROC file /usr/local/Tivoli/tec.rb/MyNotes/TEC_CLASSES/tecad_snmp.baroc
Parsing BAROC file /usr/local/Tivoli/tec.rb/MyNotes/TEC_CLASSES/tecad_ov.baroc
Parsing BAROC file /usr/local/Tivoli/tec.rb/MyNotes/TEC_CLASSES/tecad_hpov.baroc
Parsing BAROC file /usr/local/Tivoli/tec.rb/MyNotes/TEC_CLASSES/tecad_nv6k.baroc
Parsing BAROC file /usr/local/Tivoli/tec.rb/MyNotes/TEC_CLASSES/tecad_snm.baroc
Parsing BAROC file /usr/local/Tivoli/tec.rb/MyNotes/TEC_CLASSES/tecad_snaevent.baroc
Parsing BAROC file /usr/local/Tivoli/tec.rb/MyNotes/TEC_CLASSES/as400msg.baroc
Parsing BAROC file /usr/local/Tivoli/tec.rb/MyNotes/TEC_CLASSES/Sentry.baroc
Parsing BAROC file /usr/local/Tivoli/tec.rb/MyNotes/TEC_CLASSES/tivoli.baroc
Parsing BAROC file /usr/local/Tivoli/tec.rb/MyNotes/TEC_CLASSES/universal.baroc
Parsing BAROC file /usr/local/Tivoli/tec.rb/MyNotes/TEC_CLASSES/interapp.baroc
Parsing BAROC file /usr/local/Tivoli/tec.rb/MyNotes/TEC_CLASSES/notes_tecad.baroc
Parsing BAROC file
/usr/local/Tivoli/tec.rb/MyNotes/TEC_CLASSES/notes_server_monitor_35.baroc
Compiling Rules...
Compiling rule set /usr/local/Tivoli/tec.rb/MyNotes/TEC_RULES/ov_default.rls ...
Compiling rule set /usr/local/Tivoli/tec.rb/MyNotes/TEC_RULES/log_default.rls ...
Compiling rule set /usr/local/Tivoli/tec.rb/MyNotes/TEC_RULES/tecad_snaevent.rls ...
Compiling rule set /usr/local/Tivoli/tec.rb/MyNotes/TEC_RULES/interapp.rls ...
Compiling rule set /usr/local/Tivoli/tec.rb/MyNotes/TEC_RULES/notes_tecad.rls ...
Compiling rule set /usr/local/Tivoli/tec.rb/MyNotes/TEC_RULES/notes_monitor.rls ...
Compiling rule set /usr/local/Tivoli/tec.rb/MyNotes/TEC_RULES/notes_default.rls ...
Compiling rule set /usr/local/Tivoli/tec.rb/MyNotes/TEC_RULES/apmnotes.rls ...
Final Compilation Stage...

```

5. Load the rule base.

Since we didn't modify the rule classes, we can load the new rule base without stopping and starting the event server. To activate the new rule base without recycling the event server, issue the following command:

```
root@klhaix: /usr # wloadrb -u MyNotes
```

If rule classes were modified, we would have loaded the rule base and recycled the event server with the following commands:

```

root@klhaix: /usr # wloadrb MyNotes
root@klhaix: /usr # wstopesvr
root@klhaix: /usr # wstartesvr

```

We have just successfully created and loaded our new rule base, MyNotes, which will recognize our new profile, IBMFI Domino Remote Monitors.

4.4.4.3 Customizing Statistics Monitor Actions

Now that we have our new rule base in place to recognize our new profile, we are ready to make further changes to the rule base to implement the customization scenario of the statistics monitors that the event server receives (see 4.4.4, “Modifying the Notes Rule Base” on page 90 to review the scenario).

The implementation of this example requires a change in the file `notes_server_monitor.baroc` as well as a new rule set to be defined. We first show you the changes required to the BAROC file and the new rule set that we created, then show you how to incorporate these changes into our new rule base, MyNotes.

The `notes_server_monitor.baroc` file needs to be changed so that we can define a new super-class `Notes_Server_Statistic_Monitors`. All statistic monitors inherit from this class and it inherits from the `Notes_Server_Monitors` (see 4.3.1, “Tivoli Distributed Monitoring Event Classes” on page 76 and A.1.2, “`notes_server_monitor_35.baroc`” on page 205).

The modified `notes_server_monitor.baroc` is in Figure 87. The changes that we made are in bold.

```

TEC_CLASS :
Notes_Server_Monitors ISA Sentry3_5_Base
DEFINES {
    monitor:    dup_detect= 'yes';
    probe_arg:  dup_detect = 'yes';
    collection: dup_detect = 'yes';
    sub_source: dup_detect = 'yes';
    hostname:   dup_detect = 'yes';
    sub_origin: dup_detect = 'yes';
    severity:   dup_detect = 'yes';
    value:      dup_detect = 'yes';
    response_level: dup_detect= 'yes' ;
};
END
TEC_CLASS :
Notes_Program_Status_Monitor ISA Notes_Server_Monitors;
END
TEC_CLASS :
Notes_Server_Available_Monitor ISA Notes_Server_Monitors;
END
TEC_CLASS :
Notes_Server_Statistic_Monitors ISA Notes_Server_Monitors;
END
TEC_CLASS :
Notes_Server_Monitor ISA Notes_Server_Statistic_Monitors;
END
TEC_CLASS :
Notes_Database_Monitor ISA Notes_Server_Statistic_Monitors;
END
TEC_CLASS :
Notes_Memory_Monitor ISA Notes_Server_Statistic_Monitors;
END
TEC_CLASS :
Notes_MemoryAssessment_Monitor ISA Notes_Server_Monitors;
END
TEC_CLASS :
Notes_Replication_Monitor ISA Notes_Server_Statistic_Monitors;
END
TEC_CLASS :
Notes_Mail_Monitor ISA Notes_Server_Statistic_Monitors;
END
TEC_CLASS :
Notes_Disk_Monitor ISA Notes_Server_Statistic_Monitors;
END
TEC_CLASS :
AMS_NotesMonitor_Alert ISA Notes_Server_Monitors;
END
TEC_CLASS :
Notes_Domino_Monitor ISA Notes_Server_Statistic_Monitors;
END
TEC_CLASS :
Notes_Agent_Monitor ISA Notes_Server_Statistic_Monitors;
END
TEC_CLASS :
Notes_Web_Monitor ISA Notes_Server_Statistic_Monitors;
END
TEC_CLASS :
Notes_Statistics_Monitor ISA Notes_Server_Statistic_Monitors;
END

```

Figure 87. The New notes_server_monitor.baroc

You can find in Figure 88 our new rule set that we wrote to customize the processing of the Notes server statistics monitors by the TEC server. We name this file notes_myrules.rls.

The rule `notes_statistic_monitors_danger` is triggered for every non-closed (OPEN or ACK states) event in the class `Notes_Server_Statistic_Monitors` whose response level is warning, severe or critical. This rule does the following:

- Updates the first related non-closed event with the same response level if it exists.
- Closes the first related non-closed event with a different response level if it exists.

The rule `notes_statistic_monitors_reset` is triggered for every non-closed (OPEN or ACK states) event in the class `Notes_Server_Statistic_Monitors` whose response level is reset. This rule does the following:

- Automatically closes the new event.
- Closes the first related non-closed event if it exists.

```

rule:
notes_statistic_monitors_danger: (
  description: 'Deal with the warning, severe and critical response levels',

  event: _event of_class _class within ['Notes_Server_Statistic_Monitors']
    where [
      hostname: _hostname,
      response_level: _response_level
        within ['warning','severe','critical'],
      status: outside ['CLOSED'],
      probe_arg: _probe_arg,
      monitor: _monitor,
      collection: _collection,
      sub_source: _sub_source,
      sub_origin: _sub_origin,
      msg: _msg
    ],

  /* Deal with same severity events... */
  reception_action:
  check_same_events: (
    first_instance(
      event: _old_event of_class _class
        where [
          status: outside ['CLOSED'],
          response_level: equals _response_level,
          probe_arg: equals _probe_arg,
          hostname: equals _hostname,
          monitor: equals _monitor,
          collection: equals _collection,
          sub_source: equals _sub_source,
          sub_origin: equals _sub_origin
        ]
    ),
    /* Updates the msg field and the repeat count */
    add_to_repeat_count(_old_event, 1),
    bo_set_slotval(_old_event, 'msg', _msg),
    drop_received_event,
    commit_rule
  ),

  /* Closes other events... */
  reception_action:
  check_other_events: (
    first_instance(
      event: _old_event of_class _class
        where [
          status: outside ['CLOSED'],
          probe_arg: equals _probe_arg,
          hostname: equals _hostname,
          monitor: equals _monitor,
          collection: equals _collection,
          sub_source: equals _sub_source,
          sub_origin: equals _sub_origin
        ]
    ),
    set_event_status(_old_event, 'CLOSED')
  )
).

```

```

rule:
notes_statistic_monitors_reset: (
  description: 'Deal with the reset response levels',

  event: _event of_class _class within ['Notes_Server_Statistic_Monitors']
  where [
    hostname: _hostname,
    response_level: _response_level
                    within ['reset'],
    status: outside ['CLOSED'],
    probe_arg: _probe_arg,
    monitor: _monitor,
    collection: _collection,
    sub_source: _sub_source,
    sub_origin: _sub_origin
  ],

/* Auto Close */
reception_action:
auto_close_reset_event: (
  set_event_status(_event, 'CLOSED')
),

/* Closes other events with status open... */
reception_action:
check_other_events: (
  first_instance(
    event: _old_event of_class _class
    where [
      status: outside ['CLOSED'],
      probe_arg: equals _probe_arg,
      hostname: equals _hostname,
      monitor: equals _monitor,
      collection: equals _collection,
      sub_source: equals _sub_source,
      sub_origin: equals _sub_origin
    ]
  ),
  set_event_status(_old_event, 'CLOSED')
)
).

```

Figure 88. The New Rule Set Listing

4.4.4.4 Loading the New Rule Set

In order to incorporate our modifications shown in the previous section, we perform the following steps:

1. Create a working directory for editing the new copy of the notes_server_monitor.baroc and the new rule set file notes_myrules.rls. For example:

```

$ mkdir -p /usr/local/Tivoli/tec_src/MyNotes
$ cd /usr/local/Tivoli/tec_src/MyNotes

```

2. Copy the notes_server_monitor.baroc from the original MyNotes rule base directory to the new one.

```
$ cp /usr/local/Tivoli/tec.rb/MyNotes/TEC_CLASSES/notes_server_monitor.baroc \  
> /usr/local/Tivoli/tec_src/MyNotes
```

3. Edit the file `/usr/local/Tivoli/tec_src/MyNotes/notes_server_monitor.baroc` to reflect the changes in Figure 87.
4. Remove the `notes_server_monitor.baroc` from the original MyNotes rule base.

```
$ cd /usr/local/Tivoli/tec.rb/MyNotes  
$ wdelrbclass notes_server_monitor.baroc MyNotes
```

5. Import the new `notes_server_monitor.baroc` file to the MyNotes rule base.

Note: If you have imported other BAROC files to your rule base, be sure to import this file in the appropriate order.

```
$ cd /usr/local/Tivoli/tec_src/MyNotes  
$ wimprbclass notes_server_monitor.baroc MyNotes
```

6. Create the file `/usr/local/Tivoli/tec_src/MyNotes/notes_myrules.rls` with the rules in Figure 88.
7. Import the new rule set to the MyNotes rule base.

```
$ cd /usr/local/Tivoli/tec_src/MyNotes  
$ wimprbrule notes_myrules.rls MyNotes
```

8. Compile the rule base.

```
$ wcomprules MyNotes  
Loading CLASSES...  
Parsing BAROC file /usr/local/Tivoli/tec.rb/MyNotes/TEC_CLASSES/root.baroc  
Parsing BAROC file /usr/local/Tivoli/tec.rb/MyNotes/TEC_CLASSES/tec.baroc  
Parsing BAROC file /usr/local/Tivoli/tec.rb/MyNotes/TEC_CLASSES/Sentry.baroc  
Parsing BAROC file /usr/local/Tivoli/tec.rb/MyNotes/TEC_CLASSES/tivoli.baroc  
Parsing BAROC file /usr/local/Tivoli/tec.rb/MyNotes/TEC_CLASSES/universal.baroc  
Parsing BAROC file /usr/local/Tivoli/tec.rb/MyNotes/TEC_CLASSES/notes_tecad.baroc  
Parsing BAROC file /usr/local/Tivoli/tec.rb/MyNotes/TEC_CLASSES/notes_server_monitor.baroc  
Compiling Rules...  
Compiling rule set /usr/local/Tivoli/tec.rb/MyNotes/TEC_RULES/notes_tecad.rls ...  
Compiling rule set /usr/local/Tivoli/tec.rb/MyNotes/TEC_RULES/notes_monitor.rls ...  
Compiling rule set /usr/local/Tivoli/tec.rb/MyNotes/TEC_RULES/notes_default.rls ...  
Compiling rule set /usr/local/Tivoli/tec.rb/MyNotes/TEC_RULES/notes_myrules.rls ...  
Final Compilation Stage...
```

9. Load the rule base.

```
$ wloadrb MyNotes
```

10. Stop and start the event server.

```
$ wstopesvr  
$ wstartesvr
```

We now have successfully created and loaded a new TEC rule base, MyNotes, which in addition to the default rule processing provided by the Tivoli Manager for Domino, recognizes an additional profile name and contains customized processing for the Notes server statistics monitors events.

Chapter 5. User Management

The Tivoli Manager for Domino also provides features that allow for management of Notes users. As a part of the base functionality of the Tivoli Manager for Domino, there are two features that allow for the management of Notes users: a set of w commands and a set of user tasks.

The Tivoli Manager for Domino w commands can be executed from the command line interface of any TMR server that has the Tivoli Manager for Domino installed on it. These commands allow you to add, delete, or modify users in the Notes Name and Address Book, as well as retrieve user information from the Address Book, and retrieve and send Notes user ID files.

The second user management feature that comes with the base Tivoli Manager for Domino, the DomainAlias User Tasks task library, contains tasks that allow you to add, delete, and modify users in the Notes Name and Address Book using a Notes registration file. There is also a task in this task library that allows you to retrieve user information from the Name and Address Book, and a task that allows you to resend a user ID file. A job has been automatically created for each of these tasks as well. As with any Tivoli task, the tasks and jobs are executed from the Tivoli desktop.

An optional feature, the Admin Extension for Tivoli Manager for Domino, adds Notes-specific components to a user profile if you have the Tivoli User Administration product. These components enable an administrator to add, modify, or delete user information from the Notes Name and Address Book, as well as send a user ID file to a client using the Tivoli User Administration product.

In this chapter we describe each of the user management features. We explain how to manage Notes users through the Tivoli User Administration User Profiles and also how to execute the user tasks in the DomainAlias User Tasks task library and commands from the command line interface. We use our IBMFI sub-policy region to demonstrate these features and generically refer to the name IBMFI as DomainAlias throughout this chapter.

5.1 Configuring and Distributing a User Profile for Notes

Before you are able to configure a user profile with Notes-specific information, you must ensure that the Admin Extension for Tivoli Manager for Domino is installed. With the Admin Extension installed, the administrator has the capability of distributing Notes information along with any other information not related to Notes in that user profile to subscribers. When the user profile is distributed to a subscriber, only information valid for that subscriber will be distributed. Notes Name and Address Book information in a user profile will only be distributed to NotesServer endpoints, as opposed to the ManagedNode endpoints.

The following steps must be completed in order to distribute a user profile with Notes information:

- Add the user profile managed resource to a specified policy region.
- Create a profile manager in the specified policy region.
- Create a user profile in that profile manager.

- Add subscribers to that profile manager.
- Configure the Notes Admin Extension. (Can be executed at any time before the last step below.)
- Enable the user profile for distribution of Notes-specific information.

An administrator must have super and DomainAlias_super resource roles in order to execute these steps.

5.1.1 Adding the User Profile Managed Resource

Our first step in configuring a user profile for Notes information is to add the UserProfile managed resource to the policy regions that contain NotesServer managed resources that you wish to distribute Notes information to. Adding the UserProfile managed resource to a policy region requires these steps:

1. Open the desired policy region. In our example, we opened IBMFI from the Tivoli Manager for Domino policy region.

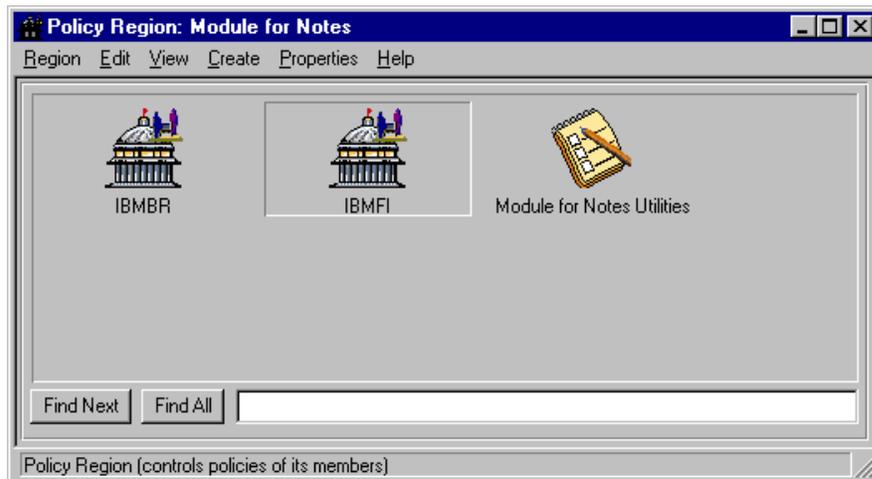


Figure 89. Policy Region: Module for Notes

2. We then click on **Properties** from the action bar and select **Managed Resources** as shown in Figure 90, to display the Set Managed Resources dialog, which is shown in Figure 91.

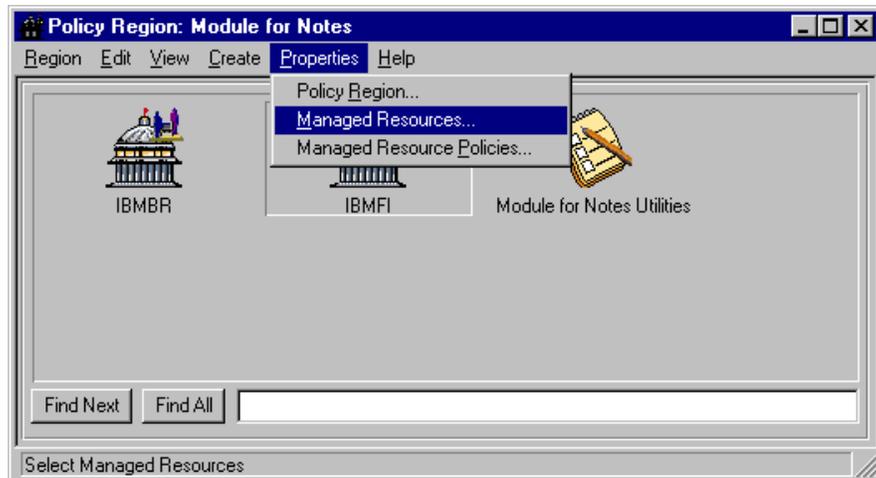


Figure 90. Policy Region: IBMFI

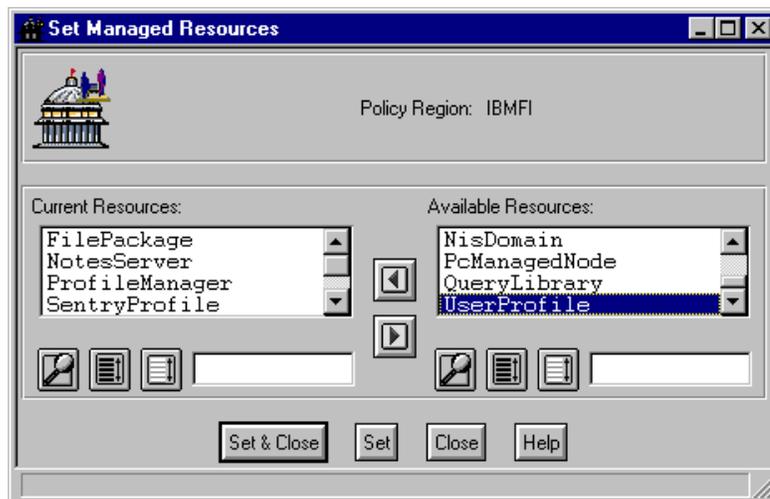


Figure 91. Set Managed Resources Dialog

3. We now select **UserProfile** from the Available Resources list box and transfer it to the Current Resources list box (Figure 92).

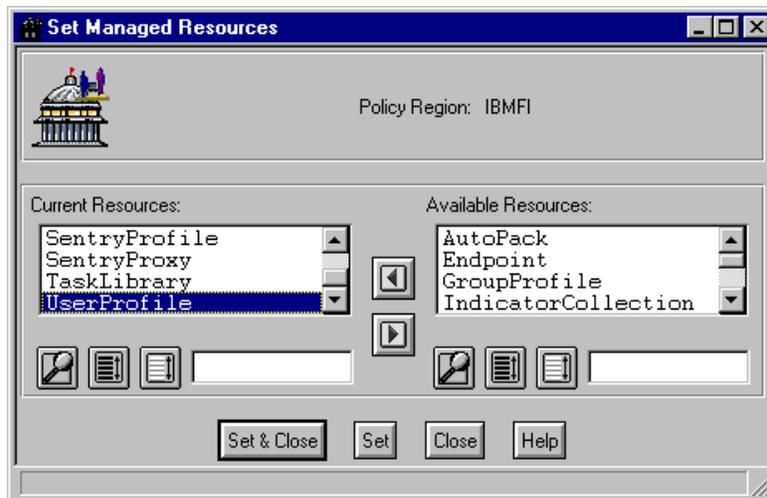


Figure 92. Current Resource List

4. Now we click **Set & Close**, and the UserProfile resource is now a valid resource defined to our IBMFI policy region.

5.1.2 Creating a Profile Manager

We must now create a profile manager in the policy region that we just added the UserProfile resource to.

Use these steps to create a profile manager:

1. From the IBMFI policy region, we click on **Create** and then select **ProfileManager...** from the pull-down menu.

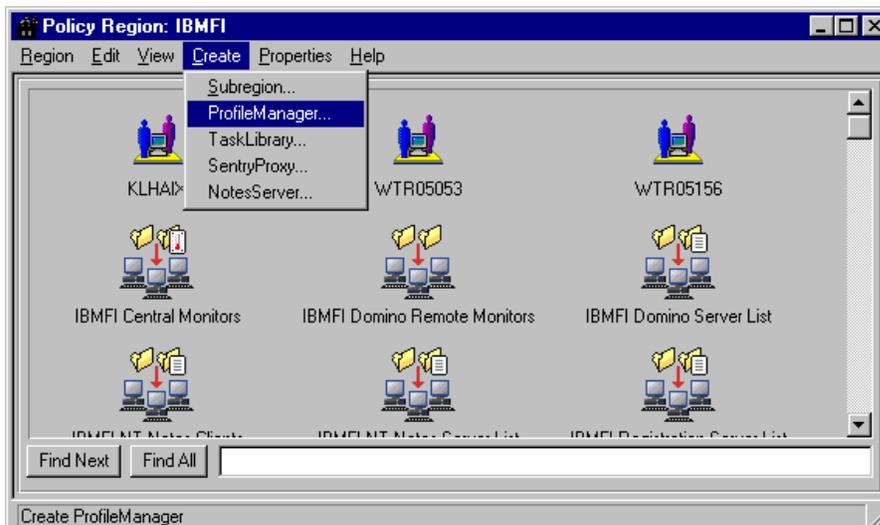


Figure 93. ProfileManager Selection List

We are now presented with the Create Profile Manager dialog box.

2. Now we enter the name of the profile manager, which will also become the icon label.

We entered `NotesAdmin` as the profile manager name.

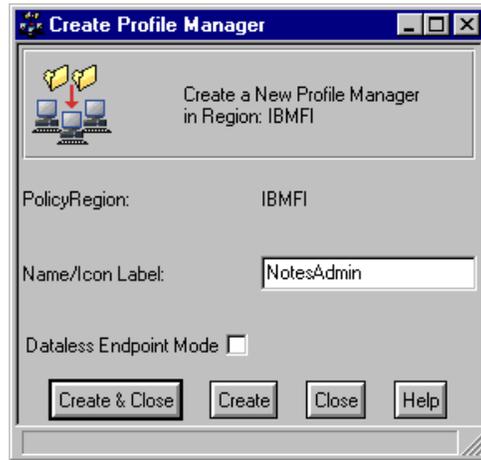


Figure 94. ProfileManager Selection

3. Click on **Create & Close** and the profile manager `NotesAdmin` is added to the policy region window.

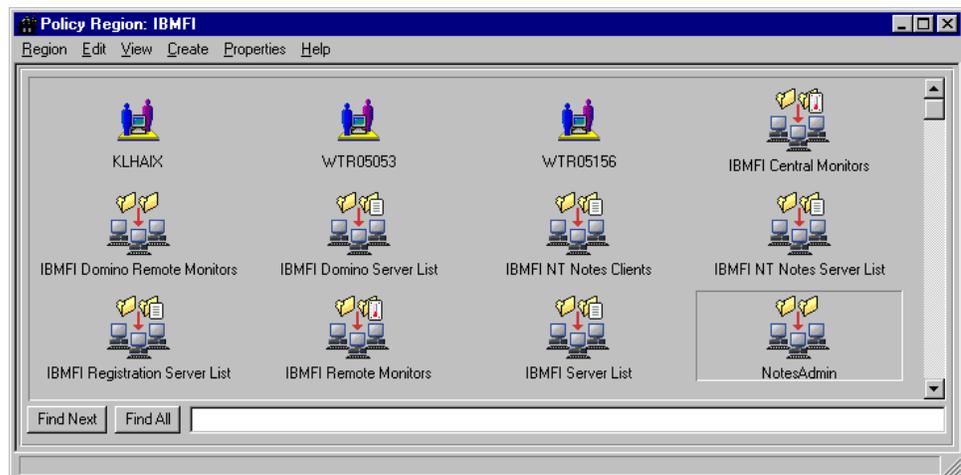


Figure 95. NotesAdmin View

We are now able to add profiles and subscribers that we would like to have the profiles distributed to.

5.1.3 Creating a User Profile

From the `NotesAdmin` Profile Manager window's action bar, select **Create** and then select **Profile....**

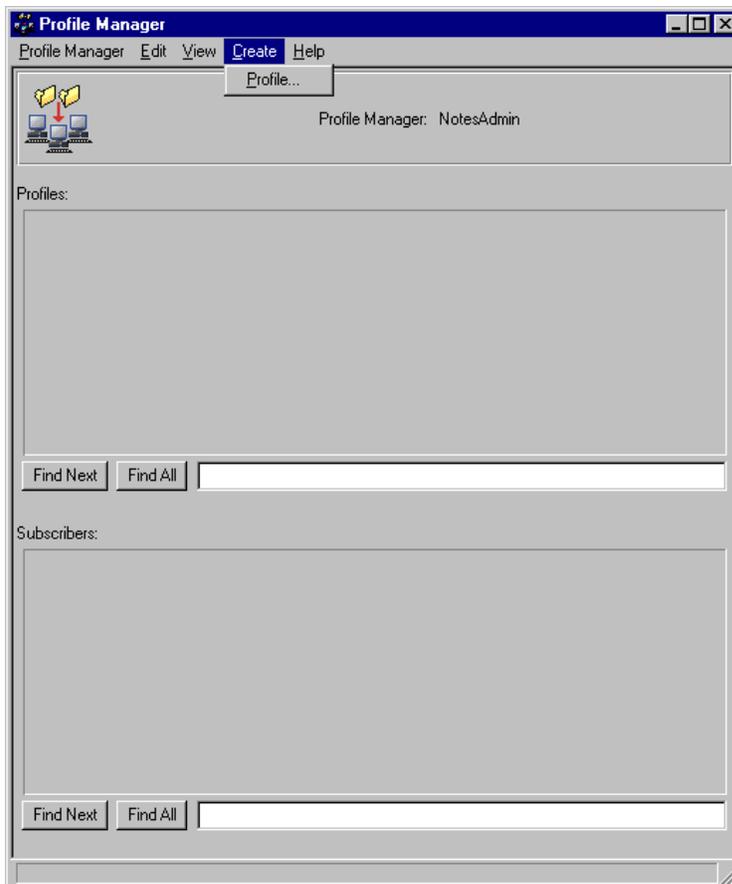


Figure 96. Profile Selection View

We are now presented with the Create Profile dialog.

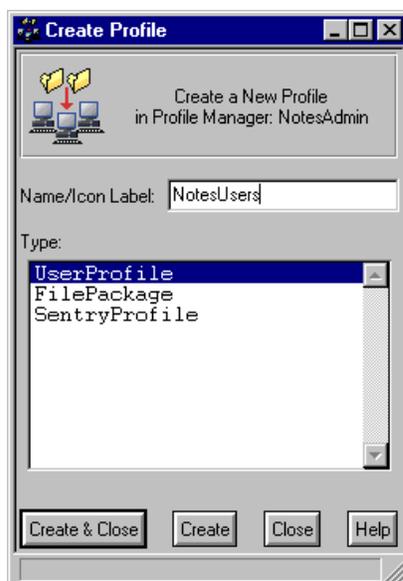


Figure 97. Create Profile Dialog

In the Name/Icon Label field, enter the name for the new profile. We entered **NotesUsers**. Select **UserProfile** as the resource type, and then click on the **Create & Close** push button. You will now see a profile icon with the name that was specified in the Name/Icon Label field in the Profile Manager window.

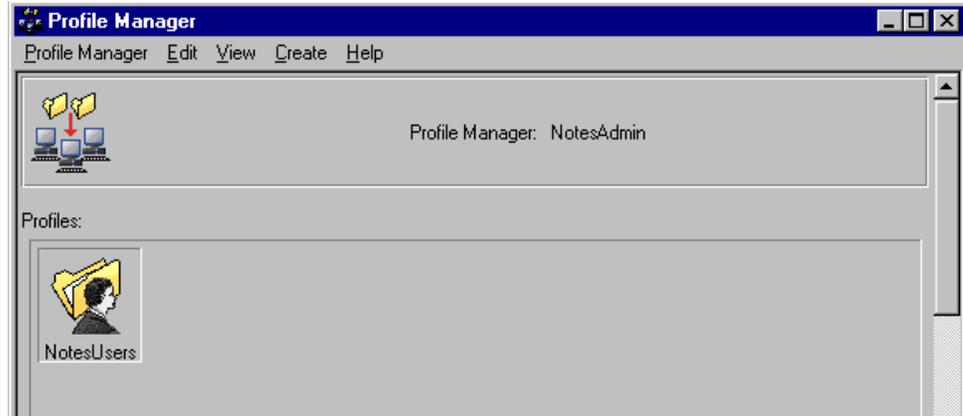


Figure 98. New Profile View

5.1.4 Adding Subscribers to a Profile Manager

Although the process of configuring the Notes Admin Extension and enabling user profiles for Notes does not require subscribers being added to a profile manager prior to the user profiles being configured and enabled, administrators may find it more convenient to add subscribers while they are working with the profile manager. Because of this, we have included this process here.

Use these steps to add subscribers to a profile manager:

1. From within the NotesAdmin Profile Manager window, select **Profile Manager** from the action bar and then select **Subscribers...** from the pull-down menu.

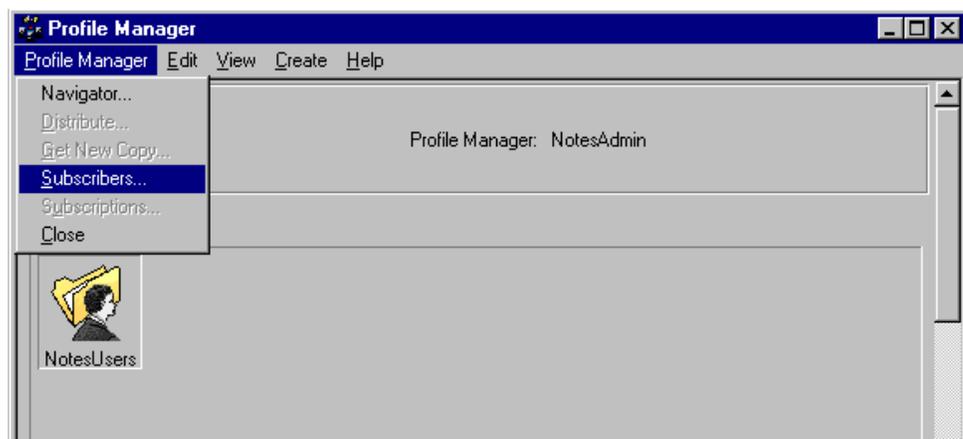


Figure 99. Subscriber Selection

We are now presented with the Subscribers selection dialog.

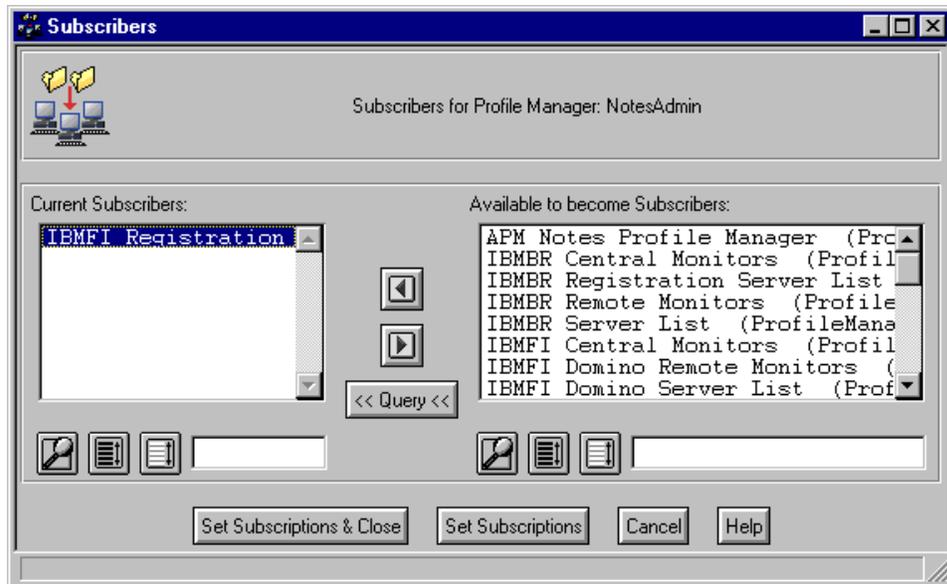


Figure 100. Subscribers Selection Dialog

- From the Available to become Subscribers list box, we select our subscribers and transfer them to the Current Subscribers list. We chose to select the **IBMFI Registration Server List**. The IBMFI Registration Server List was created during the execution of the Configure TME 10 for a Notes Domain task and Domino servers were subscribed to this server list during the execution of the Configure TME 10 for a DomainAlias Server task (see 2.4.8, “Configuring Tivoli for a Notes Domain Server” on page 29).

Subscribing this list to our Notes domain profile manager allows us to drag the user profile over this subscriber icon and distribute Notes-specific user profile information to all Domino servers in the list. We could optionally select specific NotesServer resources from the Available to become Subscribers: list box if we did not want to include all of the Domino servers that were subscribed to the Registration Server List. If we were planning to include additional information in this user profile which was not specific to Notes, we would add other subscribers, such as ManagedNode resources, as well.

- Click on **Set Subscriptions & Close** and you will see the selected subscriber icons in the Profile Manager's Subscribers list.

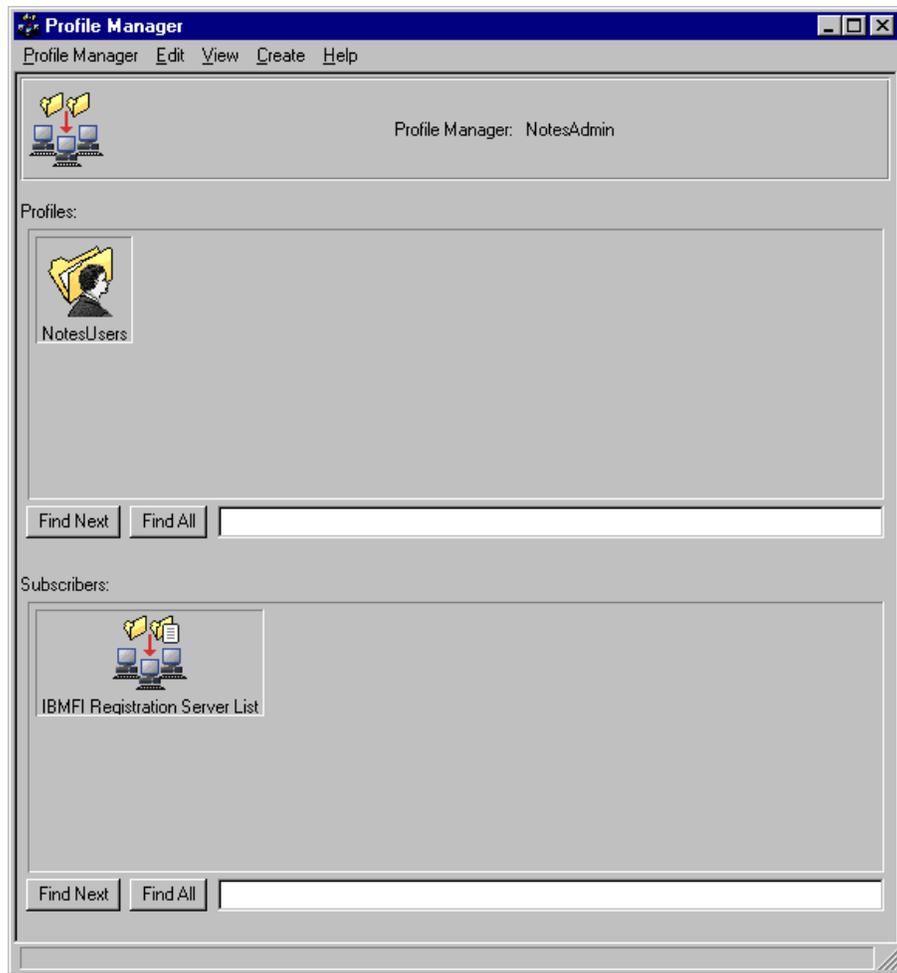


Figure 101. Available Subscribers View

5.1.5 Configuring the Notes Admin Extension

Our next step is to add the Notes information to our user profiles, which we do by running the Configure Notes Admin Extension job. This job will alter all existing user profiles and any other user profiles created in the future in our TMR server by adding Notes categories, dialogs, and properties to the profiles' User Properties dialogs.

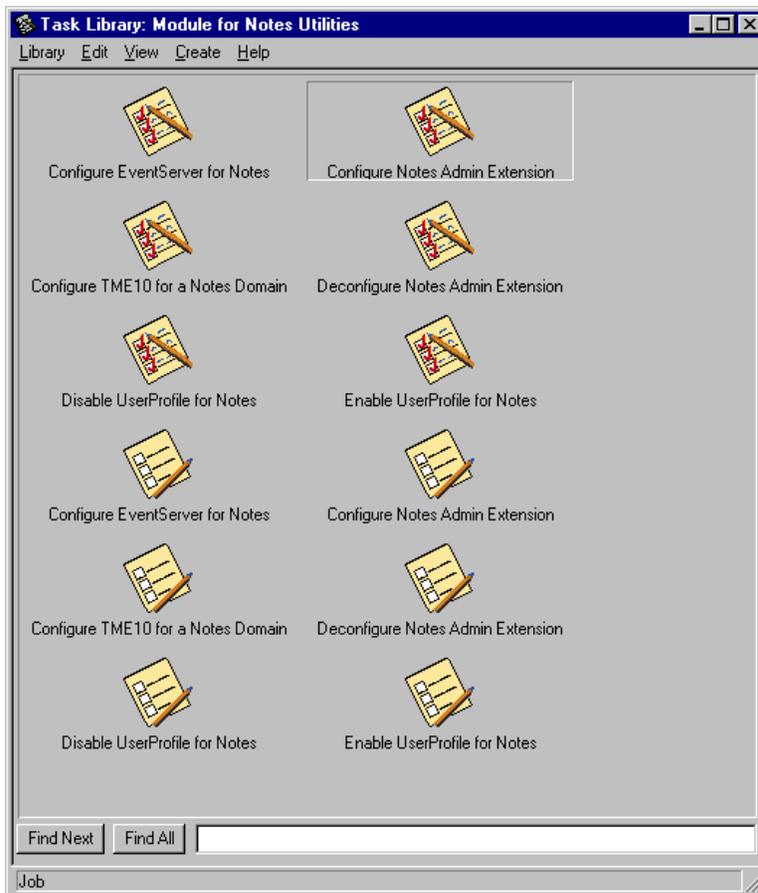


Figure 102. Module for Notes Utilities

From the Module for Notes Utilities task library window, double-click on the **Configure Notes Admin Extension** job icon to execute the task. The results are displayed in the output dialog shown in Figure 103, which also gives us the option to save the output to a file.

```
#####
Task Name:Configure Notes Admin Extension
Task Endpoint:klhaix (ManagedNode)
-----Standard Output-----
Adding categories to UserProfile: ...
Adding dialogs to UserProfile: ...
Adding properties to UserProfile: TivoliDefaultUserProfile#klhaix-region...
Enabling Notes Default Policies
Adding properties to UserProfile: NotesUsers#klhaix-region...
Enabling Notes Default Policies
Configure Notes Admin Extension Complete!

-----Standard Error Output-----
#####
```

Figure 103. Configure Notes Admin Extension Output

Once we have completed this task, we can see the Notes-specific categories that have been added to our user profiles. To see the Notes categories, open the

NotesUsers profile by double-clicking on its icon in the Profile Manager window. From the User Profile Properties window, select **Add User...** from the **Edit** pull-down menu.

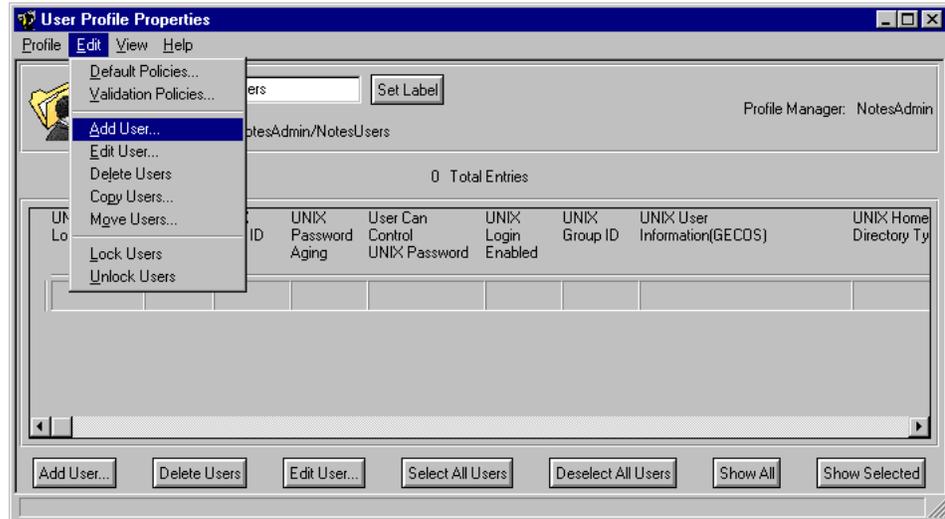


Figure 104. User Profile Properties

From the User Properties window, you can see the four Notes categories that have been added:

- Notes Configuration
- Notes Other Information
- Notes Login
- Notes Mail

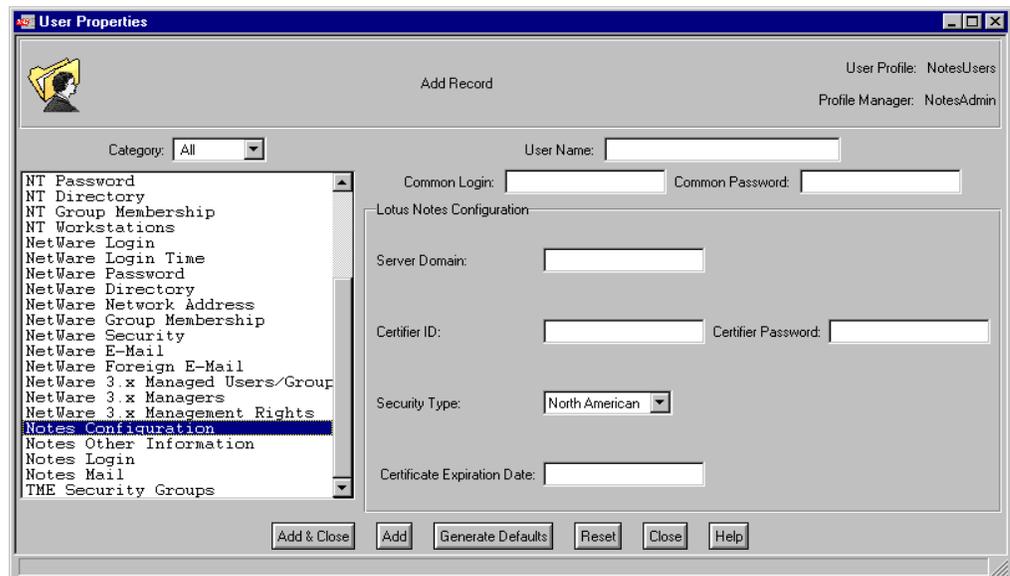


Figure 105. User Properties

Each Notes component contains various Notes user-related information fields that you can use to add, modify, or delete from the Public Name and Address

Book. Each of these component's fields and an explanation of these fields are shown below.

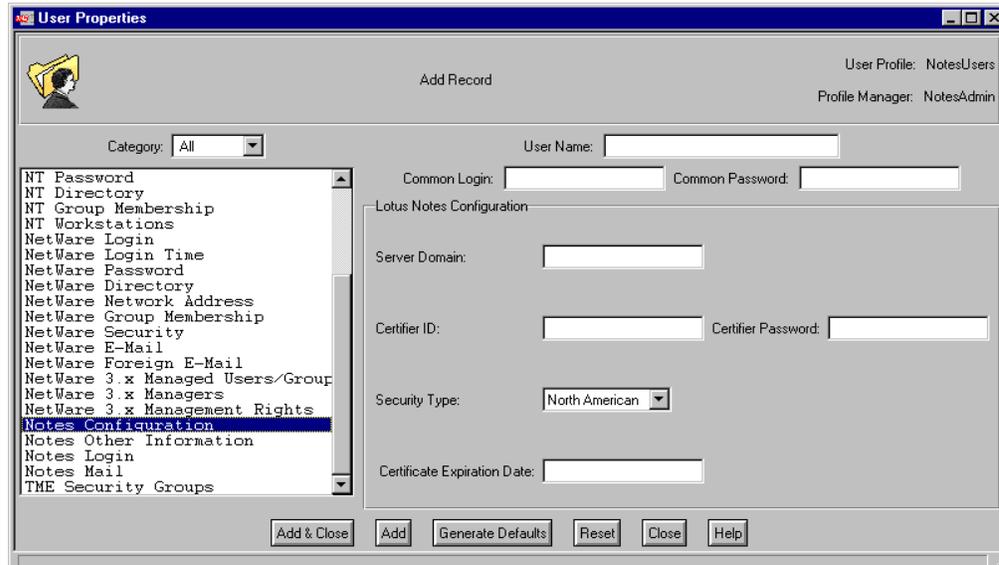


Figure 106. Notes Configuration Properties

User Name	Tivoli User Administration field, required for adding a user record.
Common Login	Optional Tivoli User Administration field, used to define a common login across user record categories.
Common Password	Optional Tivoli User Administration field, used to define a common password across user record categories.
Server Domain	Domino server domain of registration server. Note that this is the actual Notes Domain name, and not the Tivoli DomainAlias name.
Certifier ID	Certificate used to stamp user ID.
Certifier Password	Password of certifier ID.
Security Type	Security type of user ID file (North American or International) which determines the encryption key.
Certificate Expiration Date	(Optional) Certificate expiration date must be in the format of MM/DD/YY HH:mm:ss AM PM and spaces after YY and ss are required.

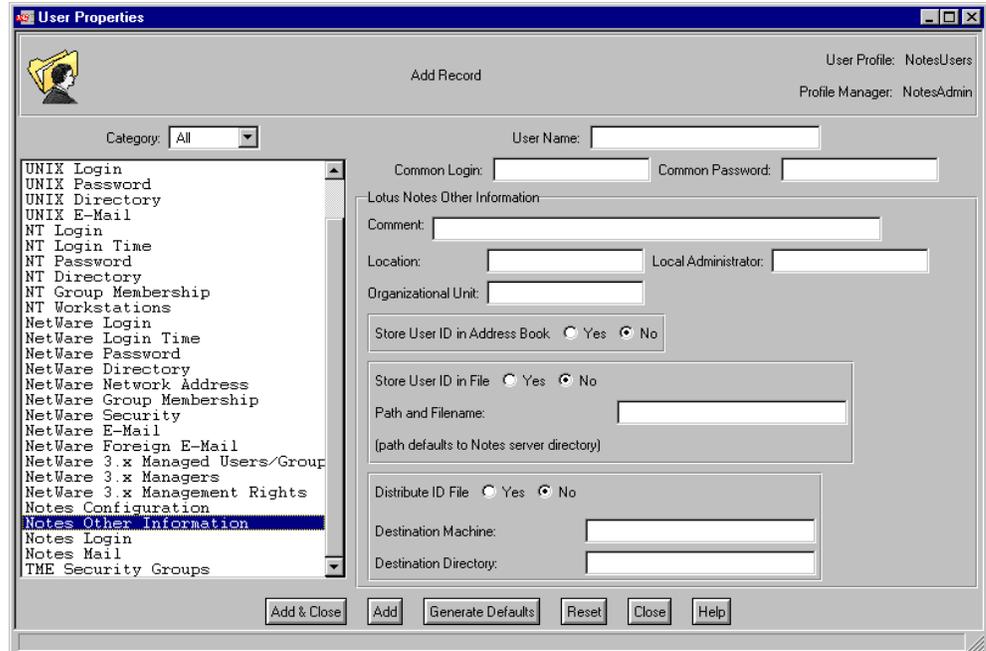


Figure 107. Notes Other Information Properties

Comment	(Optional) Miscellaneous comment about user.
Location	(Optional) Location of user, for example, office and building location.
Local Administrator	(Optional) This will allow a Notes administrator with Author access to the Public Address Book, but without UserModifier role, to modify the Person document for the user.
Organizational Unit	(Optional) This will allow a Notes administrator to distinguish between two users with the same name and certified by the same certifier ID by adding another level to the name in the User unique organizational unit box.
Store User ID in Address Book	If selected, the user ID will be stored in the Notes server's Public Address Book. The user ID may be stored in the Public Address Book and/or in a file.
Store User ID in File	If selected, the user ID will be stored in a file on the Notes server, as specified in the ID File Location field.
ID File Location	The user ID file name and directory location on the Notes server.
Distribute ID File To	If selected, the user ID will be distributed to a specified system when the profile is distributed to an applicable Notes registration server. Tivoli Software Distribution(Courier) performs this distribution.
Destination Machine	Client machine to distribute ID file to, when Distribute ID File To check box is selected.
Destination Directory	Directory on client machine to place user ID file.

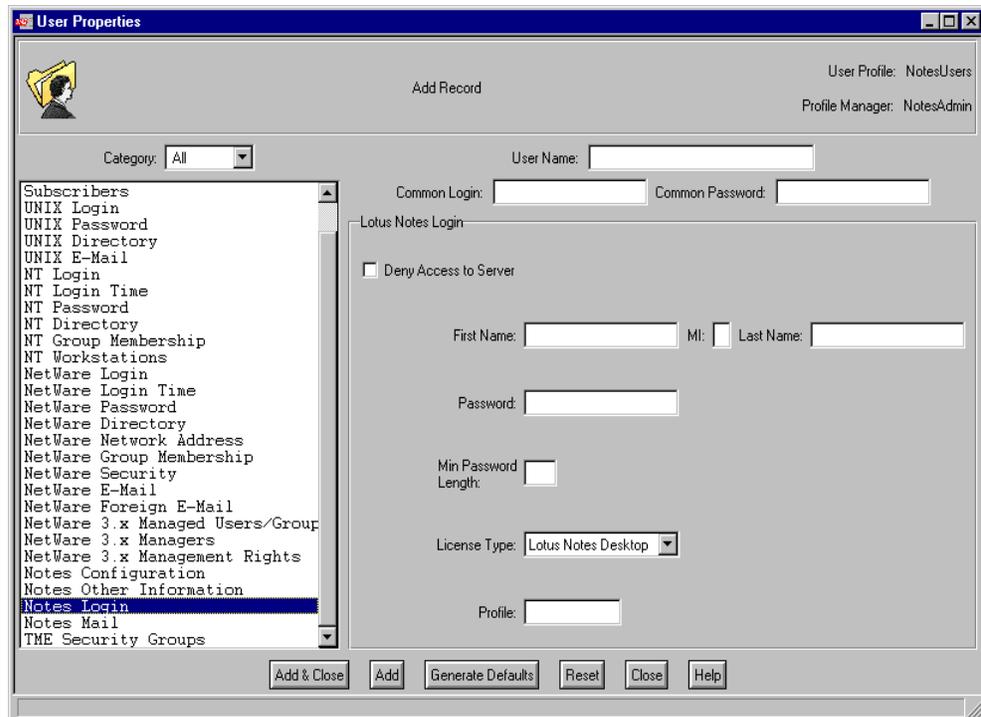


Figure 108. Notes Login Properties

- | | |
|------------------------------|---|
| Deny Access to Server | If selected, this user name is added to the Lock Users group. Users in this group are denied access to the Domino server. |
| First Name | First name of user. |
| MI | Middle initial of user. |
| Last Name | Last name of user. |
| Password | Initial password for user ID file. |
| Min Password Length | The minimum required length of the password. |
| License Type | The purchased license type for this user. Valid choices are Lotus Notes Desktop, Lotus Notes, or Lotus Notes Mail. |
| Profile | (Optional) The name of the user setup profile if you are using one. Used to set a variety of workstation defaults for users, such as default set of databases to appear on their workspaces or Internet settings. |

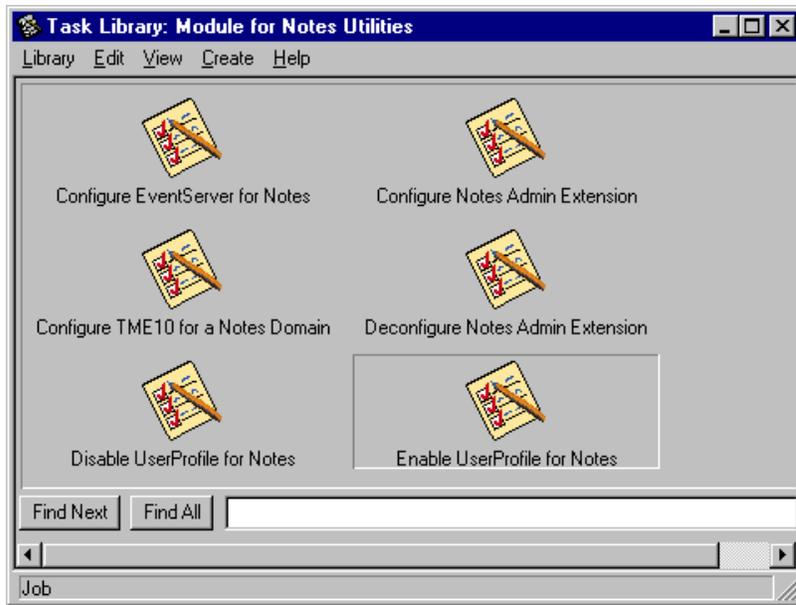


Figure 110. Module for Notes Utilities

To enable a user profile for Notes, from the Module for Notes Utilities task library window, double-click on the **Enable UserProfile for Notes** job. You will be presented with the Enable UserProfile for Notes dialog.



Figure 111. Enable UserProfile for Notes Dialog

In this dialog, we specify the name of the user profile we wish to enable for distribution of Notes information. We entered our user profile `NotesUsers` and clicked on **Set and Execute**. The results are displayed in the output dialog (Figure 112).

```
#####
Task Name:Enable UserProfile for Notes
Task Endpoint:klhaix (ManagedNode)
-----Standard Output-----
Adding actions to UserProfile: NotesUsers...
Enabling Notes Validation Policies
-----Standard Error Output-----
#####
```

Figure 112. Enable UserProfile for Notes Output

5.1.7 Managing Notes Users with a User Profile

Now that the Notes Admin Extension has been configured and a user profile has been enabled and has subscribers assigned to it, we are able to manage Notes users with the user profile. As stated earlier, we can add a user, modify a user, or delete a user from a Name and Address Book, as well as send a Notes user ID file.

To add a Notes user to the Name and Address Book, from the User Profile Properties window, select the **Add User...** push button. If you would like to generate default values for a user, from the User Properties window, *before* you select the Notes category, select the **Generate Defaults** push button. Then, you simply fill in all the appropriate fields under the Notes category and select the **Add & Close** or **Add** push button to add the user record. Required fields for adding a Notes user are:

- Certifier ID and password
- Storage location of user ID (Address Book or file)
- Name (Last name is required. Although the first name is not required, it is recommended to avoid duplicate names and user IDs.)
- Password if you are storing the user ID in Address Book or have specified a minimum password length
- Home server, if mail type is Lotus Notes

Notes: With this version of the Tivoli Manager for Domino, you must type in all of the passwords, or they will not get properly encrypted and distribution of the user information will fail.

Be aware that default values are generated for some of the Notes fields if a value has not been specified. Fields that you may want to pay particular attention to are:

- Server Domain

Default value of Tivoli Systems is generated if left blank.

- Certifier ID

Default value of cert.id is generated if left blank.

- Certificate Expiration Date

Default value of today's date and time, plus two years generated if left blank.

- Store User ID in File

Store User ID in File is default generated if a Store User ID option is not specified.

- ID File Location

This value is left blank, although Store User ID in File is the default value generated.

- Mail File Name

Default directory of mail and file name composed of first initial followed by last name generated if left blank and Mail Type is Lotus Notes.

- Create files now/Create files during setup

If no Notes fields are entered and a user record is added with all default values generated, the option to create files during setup is enabled; otherwise, the option enabled is to create files now.

- Home Server

Value left blank if not specified and Mail Type is Lotus Notes.

In order to add Notes users successfully, verify that the Domino server does not have a notes.dll file in the c:\winnt directory. Notes.dll must be in the notes directory. Also make sure you have the notes directory in the system path.

In our example, we have created a user record for Rami Alkula which contains Notes information.

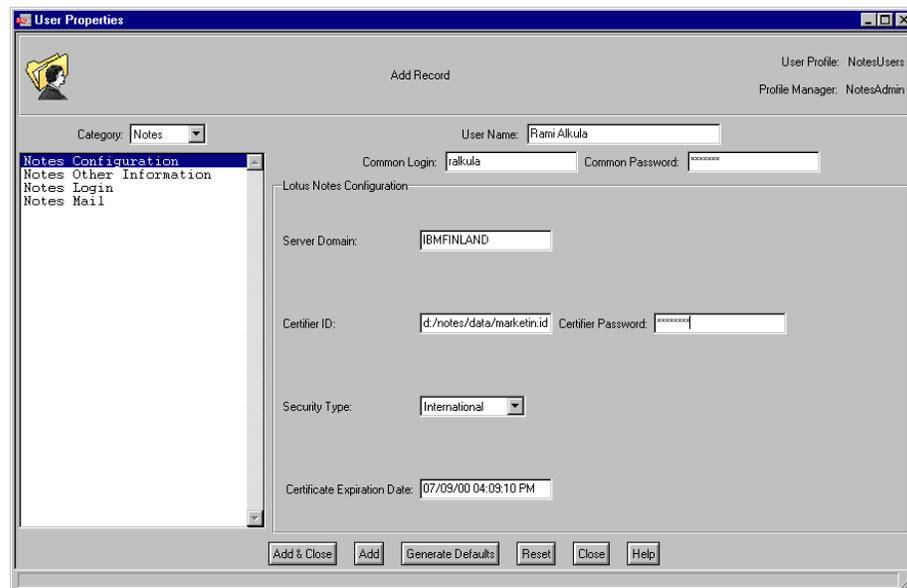


Figure 113. Notes Configuration Information for Rami Alkula

We first typed in the name Rami Alkula in the required Tivoli User Administration User Name: field. In the Notes Configuration component, we specified a value of `IBMFINLAND` in the Server Domain field, a certifier ID of `marketin.id` and the valid certifier password in the Certifier Password field. We changed the security type default of North American to International.

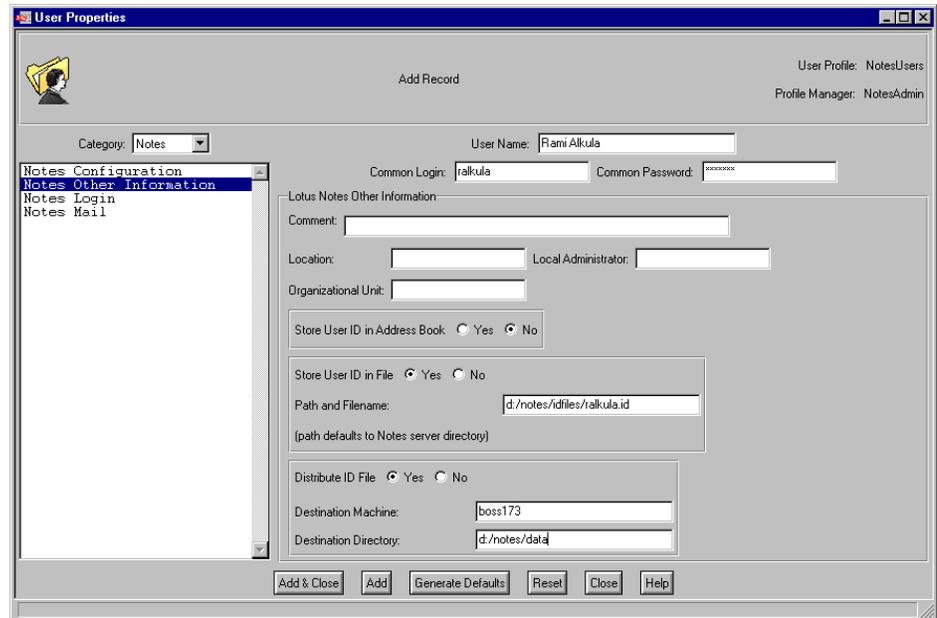


Figure 114. Notes Other Information for Rami Alkula

Moving to the Notes Other Information component, we chose to store the user ID in a file, and specified a location of `d:\notes\idfiles\ralkula.id`, since our Notes server, `wtr05156`, is an NT system. We have also selected to distribute the user ID file to a remote client when we add the user information to IBMFI's Name and Address Book. The destination machine is `boss173`, which is a Windows NT Notes client and PC managed node, and the directory is `d:\notes\data`.

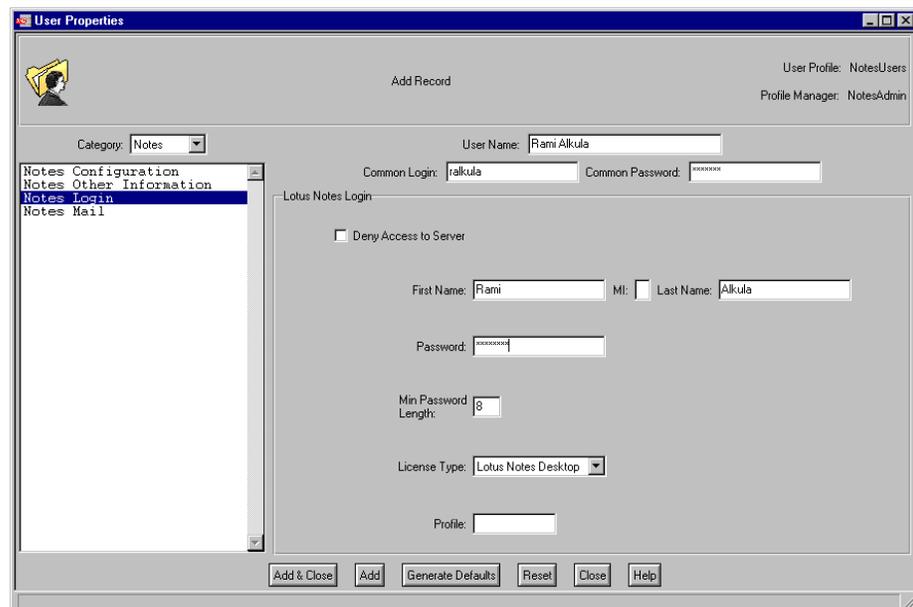


Figure 115. Notes Login Information for Rami Alkula

For the Notes Login component, we specified an initial password for the user. If we had provided a value in the Tivoli User Administration Common Password

field, that password would be pulled into the Notes Login Password field if a value was not specified. We provided a minimum password length of 8, and left the license type default of Lotus Notes Desktop.

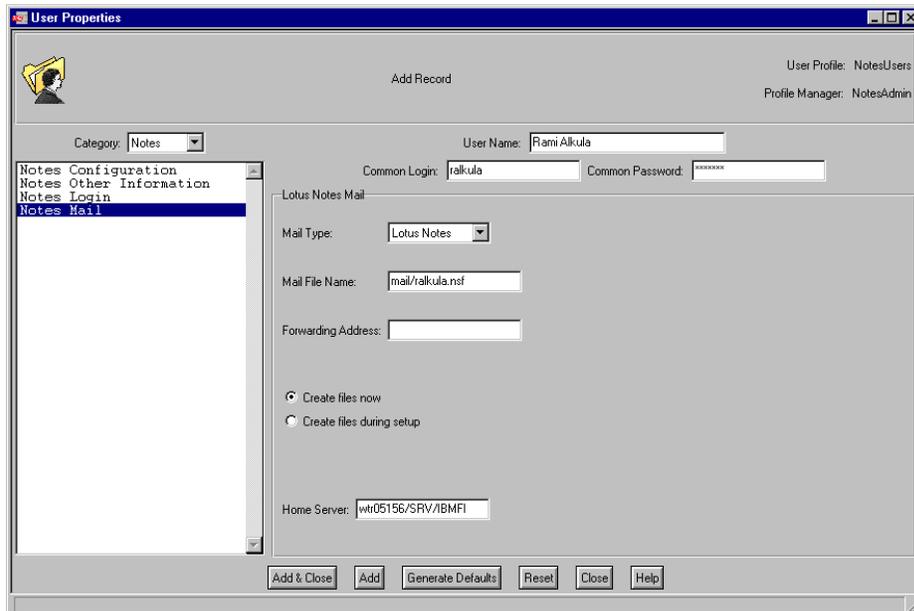


Figure 116. Notes Mail Information for Rami Alkula

In the Notes Mail component, we left the default mail type as Lotus Notes. We specified a mail file name of mail\ralkula.nsf and elected to create the mail file when the user was added to the Name and Address Book. In the Home Server field, you must specify the full name of the mail server as it was defined to Lotus Notes. In our case, it was wtr05156\SRV\IBMFI.

We then selected the **Add & Close** push button to add the user record to our user profile, NotesUsers, shown in Figure 117.

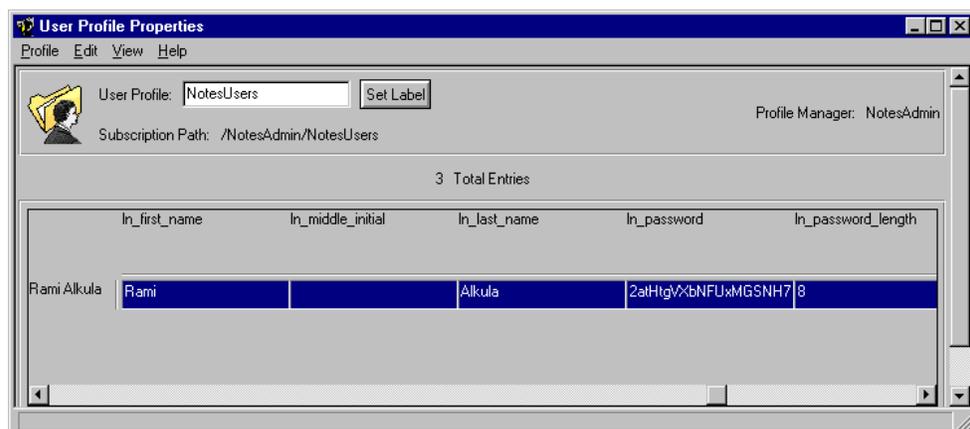


Figure 117. User Record for Rami Alkula

Once all the desired Notes users have been added as user records, you are ready to distribute the user profile to the desired Domino server(s). In order for

the Notes user information to get distributed to a NotesServer endpoint or a registration server list, you must change the user profile distribution defaults.

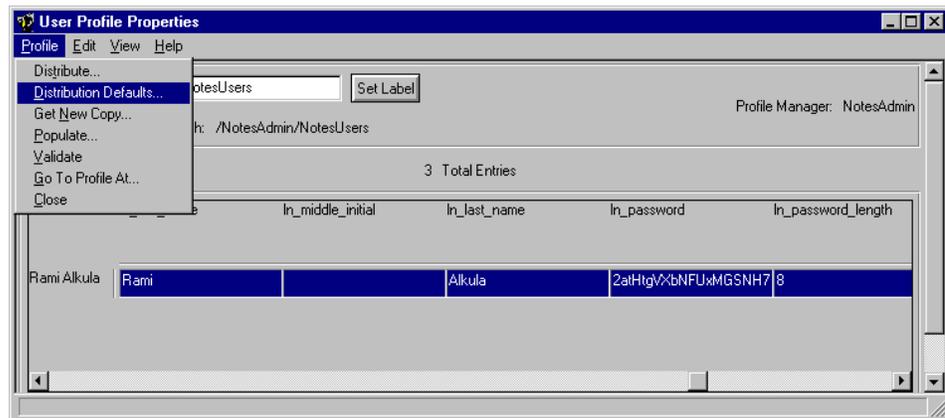


Figure 118. Editing Distribution Defaults for Notes User Profile

From the User Profile Properties window, select **Distribution Defaults...** from the **Profile** pull-down menu.

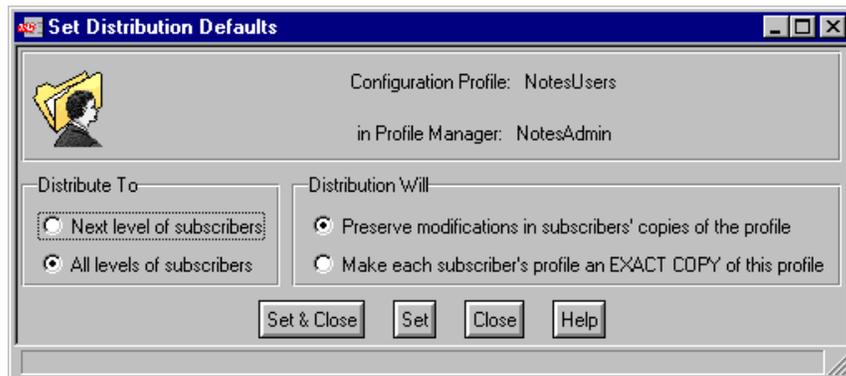


Figure 119. Distribute to All Levels of Subscribers Update

From the Set Distribution Defaults window, you will need to select the option to distribute to all levels of subscribers, as shown in Figure 119. This will allow NotesServer endpoints to receive Notes user information via a user profile distribution. Select **Set & Close** to return to the User Profile Properties window.

Now that the distribution defaults have been updated, we can distribute the user profile to the selected subscriber(s). From the Profile Manager window, this can be done by dragging the user profile down to the appropriate subscriber, or selecting the user profile and desired subscriber and selecting **Subscribe...** from the **Profile Manager** pull-down menu.



Figure 120. Distributing Notes User Profile

Note: If you will also be distributing UNIX user information from the same profile to UNIX users, you need to be sure that you change the UNIX Directory's Home Directory Type field from None to either Local to Host or Remotely Mounted, whichever is appropriate for your environment (see Figure 121). The Tivoli Manager for Domino defaults this value to none, because although a Domino server may be on a UNIX system, the Notes users may not need UNIX accounts.

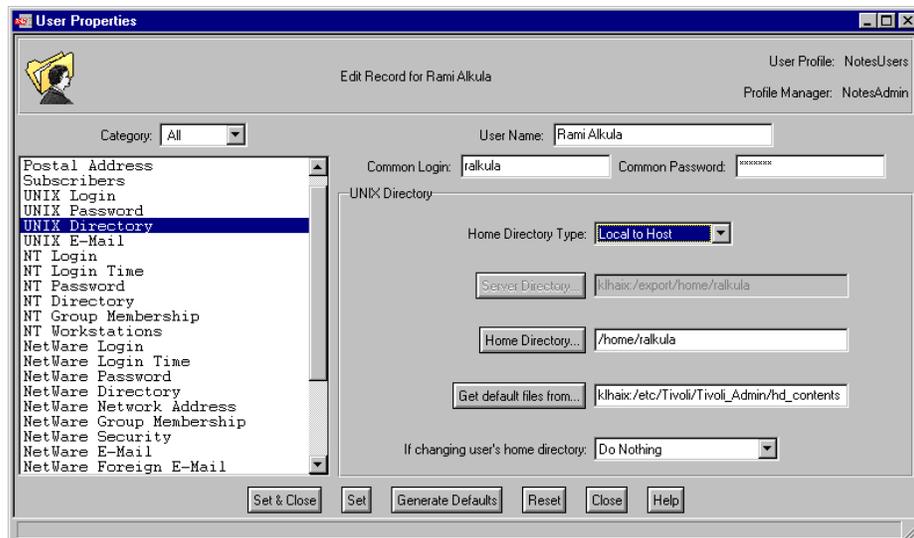


Figure 121. Distributing Notes User Profile and UNIX User Information

To modify Notes user information, you would simply edit the user record to make the desired changes by selecting the desired user record on the User Profile Properties window and selecting the **Edit Users...** push button. Once the changes are complete and the user record saved, redistribute the user profile to the desired NotesServer managed resource(s) whose Name and Address Book you wish to update.

Deleting a Notes user from a Name and Address Book requires that you delete the user record from the User Profile Properties window by selecting the user record you wish to remove and selecting the **Delete Users** push button. You must then redistribute the user profile to the NotesServer subscriber(s) that you wish to remove the user from. Tivoli User Administration records what user information in a user profile has been distributed to which subscribers. When that user profile is redistributed after a user record has been deleted from the user profile, Tivoli User Administration recognizes that the user record is no longer there and removes all the changes that occurred to the subscriber initially defined in that user record.

Notes

Be aware that a change or deletion of a user to a Name and Address Book may require a recertification of a user's ID file.

Also be aware that deleting a user from a Name and Address Book does not delete that user from any groups in the Name and Address Book or access control lists in Notes databases that the user may have been defined to, resulting in the user still having access to the server. You may want to consider using the Deny Access to Server option in the User Properties Notes Login window if you wish to deny a user from accessing a particular server.

5.1.8 Disabling a User Profile for Notes

If we no longer wish for a specific user profile to distribute Notes information, we can disable the Notes information for that profile by using the Disable UserProfile for Notes job. This task will not remove the Notes components from the user profile, it will simply deactivate those components.

Use these steps to disable a user profile for Notes:

1. From the Module for Notes Utilities task library window, double-click on the **Disable UserProfile for Notes** job to display the Disable UserProfile for Notes dialog.

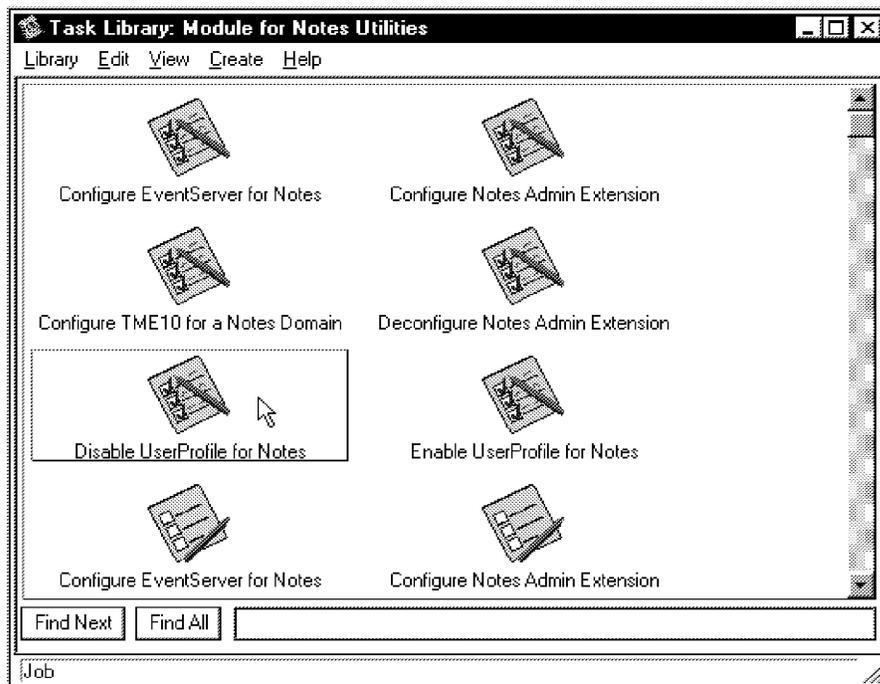


Figure 122. Module for Notes Utilities

2. Now we enter the name of the user profile we wish to disable. In our case we are going to disable the NotesUsers profile. Click on **Set and Execute**. When we click on Set and Execute, the results are displayed in the output dialog shown in Figure 124.

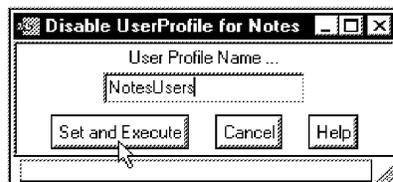


Figure 123. Disable UserProfile for Notes

3. Now we enter the name of the user profile we wish to disable. In our case we are going to disable the NotesUsers profile. Click on **Set and Execute**. When we click on Set and Execute, the results are displayed in the output dialog shown in Figure 124.

```

#####
Task Name: Disable UserProfile for Notes
Task Endpoint: klhaix(ManagedNode)
-----Standard Output-----
Removing actions from UserProfile: NotesUsers...
Removing Notes Validation Policies from UserProfile: NotesUsers...
-----Standard Error Output-----
#####

```

Figure 124. Disable UserProfile for Notes Output

5.1.9 Deconfiguring Notes Admin Extension

Deconfiguring the Notes Admin Extension will remove all the Notes actions, properties and dialogs from all of the user profiles, nor will they be present in any user profiles that are subsequently created until the task Configure Notes Admin Extension is run again.

Note: The removal of Notes properties, in particular, reduces the size of user records in a database, giving us a savings in space.

Use these steps to deconfigure the Notes Admin Extension:

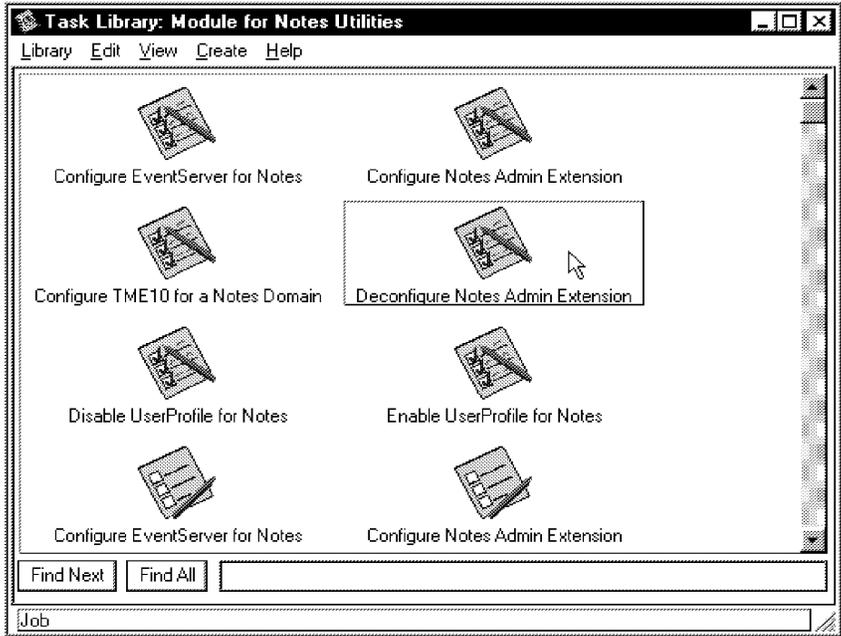


Figure 125. Module for Notes Utilities

To remove all Notes information from the Tivoli User Administration user profiles, from the Module for Notes Utilities task library window, double-click on the **Deconfigure Notes Admin Extension** job icon to execute the task. Our results from executing this job are displayed in the output dialog shown in Figure 126.

```

#####
Task Name: Deconfigure Notes Admin Extension
Task Endpoint: klhaix(ManagedNode)
-----Standard Output-----
Removing dialogs from UserProfile:...
Removing actions from UserProfile: TivoliDefaultUserProfile#klhaix-region...
Removing properties from UserProfile: TivoliDefaultUserProfile#klhaix-region...
Removing actions from UserProfile: NotesUsers#klhaix-region...
Removing properties from UserProfile: NotesUsers#klhaix-region...
Removing actions from UserProfile: NotesUsers@IBMFI Registration Server
List#klhaix-region...
Removing properties from UserProfile: NotesUsers@IBMFI Registration Server
List#klhaix-region...
Removing actions from UserProfile: NotesUsers@WIR05156#klhaix-region...
Removing properties from UserProfile: NotesUsers@WIR05156#klhaix-region...

Deconfigure Notes Admin Extension Complete!

-----Standard Error Output-----
#####

```

Figure 126. Deconfigure Notes Admin Extension Output

5.2 User Management Tasks

In this section, we discuss the user management tasks that are available as a part of the DomainAlias User Tasks task library. Each DomainAlias has its own DomainAlias User Tasks task library, and an administrator must have the DomainAlias_admin and DomainAlias_super resource roles to execute these tasks.

The following user tasks are available from the DomainAlias User Tasks task library:

- Adding DomainAlias users
- Deleting DomainAlias users
- Modifying DomainAlias users
- Getting DomainAlias user information
- Resending DomainAlias user ID files

As with the other task libraries that the Tivoli Manager for Domino created, the DomainAlias User Tasks task library contains both jobs and tasks. By default, the jobs will be executed against the DomainAlias Registration Server List. You can, of course, edit the job to alter the selected target endpoints. If we execute a task from this task library, we must specify the Domino server or servers on which we would like the task to run at execution time.

From the Module for Notes policy region, we double-click on the **IBMFI** policy region, and then double-click on **IBMFI User Tasks** to display the IBMFI User Tasks window, where we can perform all of the Tivoli Manager for Domino user tasks.



Figure 127. Task Library: IBMFI User Tasks

5.2.1 Notes Registration File

The tasks that add, modify, and delete Notes users update the Notes Name and Address Book on specified Domino registration servers. These three tasks will require input from a Notes registration file, that we must create, in order to update the Address Book. This Notes registration file is an ASCII text file containing user information, with *one* line for each user. Each line is composed of a number of fields. Valid Notes user information fields for the Notes registration file are listed below. Each of these fields must be separated by a semicolon (;) and are positional:

```

LastName; [FirstName]; [MiddleInitial]; [OrganizationalUnit]; [Password];
[IDFileDir]; [IDFileName]; [HomeServerName]; [MailFileDir];
[MailFileName]; [Location]; [Comment]; [ForwardingAddress];
[DestinationHost]; [DestinationDir]

```

Figure 128. Registration File Field Positions

The descriptions for these fields are as follows:

LastName	Last name of user
FirstName	First name of user
MiddleInitial	Middle initial of user
OrgUnit	User unique organizational unit
Password	Case-sensitive password of user ID
IDFileDir	Directory location of user ID file

IDFileName	File name of user ID file to be stored
MailServer	Full name of Domino server that will store the user's mail file
MailFileDir	Directory location of user's mail file
MailFileName	Name of user's mail file
Location	Location of user (for example, building and office number)
Comment	Miscellaneous comment about user
MailAddress	Complete forwarding address for mail
DestinationHost	Client machine to distribute file to
DestinationDir	Directory on client machine to distribute file to

The last two fields, DestinationHost and DestinationDir, are only needed when we want to distribute user ID files to client machines.

Figure 129 shows an example of the Notes registration file that we used in this chapter. This file was named NEWUSERS.TXT.

```
Haapakoski;Essi;;;tivoli;;;wtr05156/SRV/IBMFI;mail;/ehaapak.nsf
Karikko;Sebastian;;;tivoli;;;wtr05156/SRV/IBMFI;mail;/skarikko.nsf
```

Figure 129. Sample Registration File:NEWUSERS.TXT

Note

While working with the Notes registration file, we noticed that we needed a carriage return at the end of file to enable the last user in the file to be read by the tasks.

5.2.2 Adding Users

This task will add users to a Notes Name and Address Book. The list of users that we wish to add must be defined in a Notes registration file. (See Figure 129 for a sample registration file.) This task requires the following fields in the Notes registration file:

- LastName
- MailServer (home server)
- MailFileName

The following default values are assumed when adding users, which you cannot change when executing this task:

- North American security type for North American version of Notes and International security type for International version of Notes
- Minimum password length is value you specified when configuring the server
- Notes Desktop license type
- Lotus Notes mail program
 - Create mail file now
- Storage of user ID as an attachment to Name and Address Book if IDFileDir and/or IDFileName is not specified

We followed these steps to add users to a Notes Name and Address Book:



Figure 130. Add IBMFI Users Selection

1. From the IBMFI User Tasks window, we double-clicked on the **Add IBMFI Users** job icon to display the Add IBMFI Users dialog.

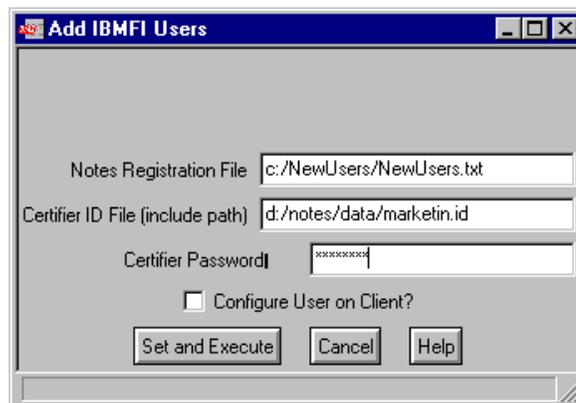


Figure 131. Add IBMFI Users Dialog

2. Next we enter the full path name to the Notes registration file. In our environment, it was `c:\NewUsers\NewUsers.txt`. We must also enter the path to the Certified ID file (`cert.id`). In our environment, it was `d:\notes\data\marketin.id`. The Certifier Password for the `marketin.id` file must also be specified. Click on **Set and Execute**.

We are also able to distribute user ID files from the server to client machines as the user is being added to the Name and Address Book by selecting the **Configure User on Client** option in this dialog. As mentioned in 5.2.1, “Notes

Registration File” on page 129, when selecting this option, we must have the DestinationHost and DestinationDir specified in the Notes registration file for each user we wish to distribute the user ID to.

Note: There is a separate task, Resend DomainAlias User Id File, which should be used when a user is already in the Name and Address Book and you only need to send a user ID file to a client (see 5.2.6, “Resending a User ID File” on page 137).

The results of executing the task in our environment are shown in Figure 132.

```
#####
Task Name:Add IBMFI Users
Task Endpoint:WIR05156 (NotesServer)
-----Standard Output-----

Status Msg: WIR05156 - Adding Users in File c:/NewUsers/NewUsers.txt ...

checking password ...

password ok
OK
OK

WIR05156: Adding Users Complete!
-----Standard Error Output-----
#####
```

Figure 132. Add New User Output

Figure 133 shows the end result of using this option to add our new users, Essi Haapakoski and Sebastian Karikko.

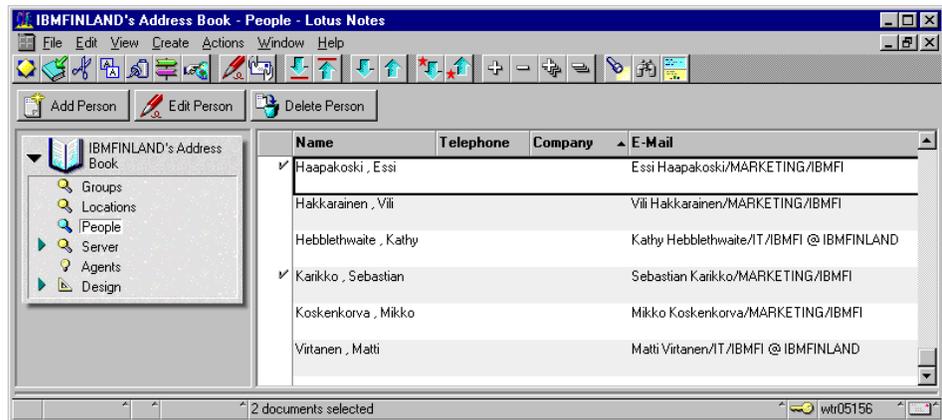


Figure 133. IBMFINLAND's Address Book

5.2.3 Deleting Users

This task will delete users from a Notes Name and Address Book. Just as with the Add IBMFI Users task, the list of users that we wish to delete must be defined in a Notes registration file. (See Figure 129 on page 130 for a sample registration file.) The only required field in the Notes registration file when deleting a user is

LastName; however, to avoid duplicate name errors, you may also want to specify the FirstName and MiddleInitial as well.

We used these steps to delete users from a Notes Name and Address Book.

1. From the IBMFI User Tasks window, double-click on the **Delete IBMFI Users** job icon to display the Delete IBMFI Users dialog.

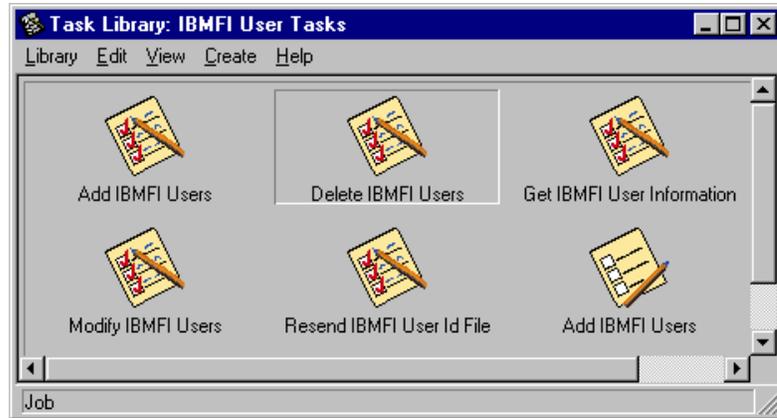


Figure 134. Delete IBMFI Users Selection

2. Here we must enter the full path name to the Notes registration file. In our case, this value was `c:\Users\DelUsers.txt`. Click on **Set and Execute**.

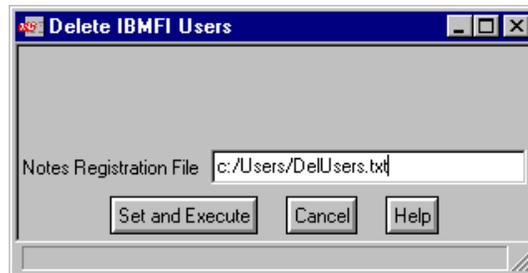


Figure 135. Delete IBMFI Users Dialog

The results are displayed in an output dialog, as shown in Figure 136.

```
#####  
Task Name:Delete IBMFI Users  
Task Endpoint:WIR05156 (NotesServer)  
-----Standard Output-----  
  
Status Msg: WIR05156 - Deleting Users in File c:/Users/DelUsers.txt ...  
  
WIR05156: Deleting Users Complete!  
-----Standard Error Output-----  
#####
```

Figure 136. Delete User Output

Note: If you delete users from the Notes Name and Address Book, remember that the name will still be in any Notes databases' Access Control lists and the Notes Name and Address Book's group documents that they have been added to.

5.2.4 Modifying User Information

This task modifies the information for users in a Notes Name and Address Book, using the Notes registration file once more as input. The only required field in the Notes registration file when modifying a user's information is LastName. However, you should note that modifying a user's information is, in this case, more like replacing the information. You must respecify all the fields you wish to store for the user in the Notes registration file, not just those you want to update.

We changed the Location field for Vili Hakkarainen from Vantaa to Helsinki (see Figure 137).

```
Hakkarainen;Vili;;;;;wtr05156/SRV/IBMFI;mail;jhakkara.nsf;Helsinki;
```

Figure 137. Sample Registration File: CHANGEUSERS.TXT

The following steps are followed to modify users in a Notes Name and Address Book:

1. From the IBMFI User Tasks window, double-click on the **Modify IBMFI Users** job icon to display the Modify IBMFI Users dialog.

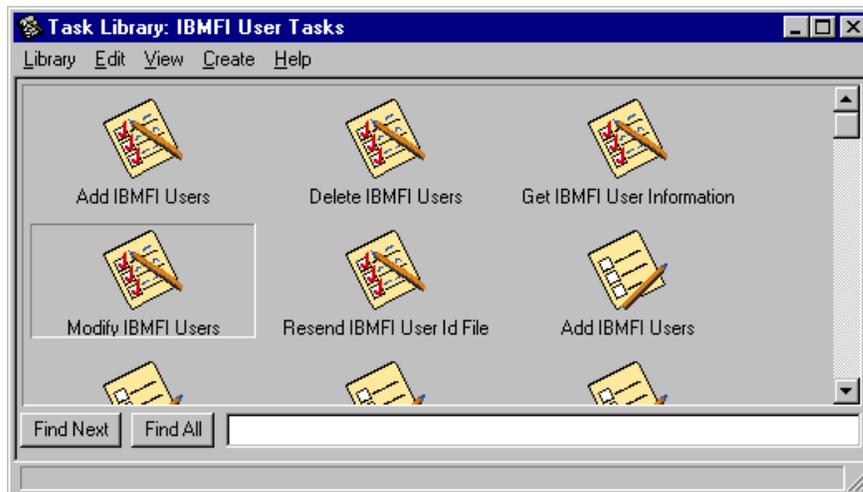


Figure 138. Modify IBMFI Users Selection

2. In the Notes registration file field, we specified a value of `c:\Users\ChangeUsers.txt` and Click on **Set and Execute**.

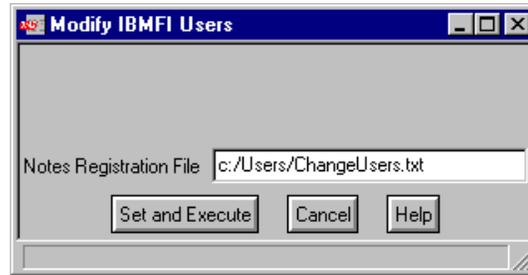


Figure 139. Modify IBMFI Users Dialog

Our results are displayed in the output dialog shown in Figure 140.

```
#####
Task Name:Modify IBMFI Users
Task Endpoint:WIR05156 (NotesServer)
-----Standard Output-----

Status Msg: WIR05156 - Modifying Users in File c:/Users/ChangeUsers.txt ...

OK

WIR05156: Modifying Users Complete!
-----Standard Error Output-----
#####
```

Figure 140. Modifying User Output

Note: Remember that some changes to a user in the Notes Name and Address Book might require recertifying the user ID file and changing Notes databases' Access Control lists and the Name and Address Book's group documents.

5.2.5 Getting User Information

This task retrieves user information from a Notes Name and Address Book and displays it in an output dialog on your Tivoli desktop. With this task we have the option of specifying a specific user to retrieve information about, or we can retrieve information for all users in a Notes Name and Address Book.

This task will retrieve the information in the following fields and list them in the same order, with each field separated by a semi-colon (;):

- LastName
- FirstName
- MiddleInitial
- OrgUnit
- IDFileDir
- IDFileName
- MailServer
- MailFileDir and MailFileName
- Location
- Comment
- MailAddress

See 5.2.1, “Notes Registration File” on page 129 for a description of the fields.

Use these steps to retrieve user information from a Notes Name and Address Book:

1. From the IBMFI User Tasks window, double-click on the **Get IBMFI User Information** job icon to display the Get IBMFI User Information dialog.

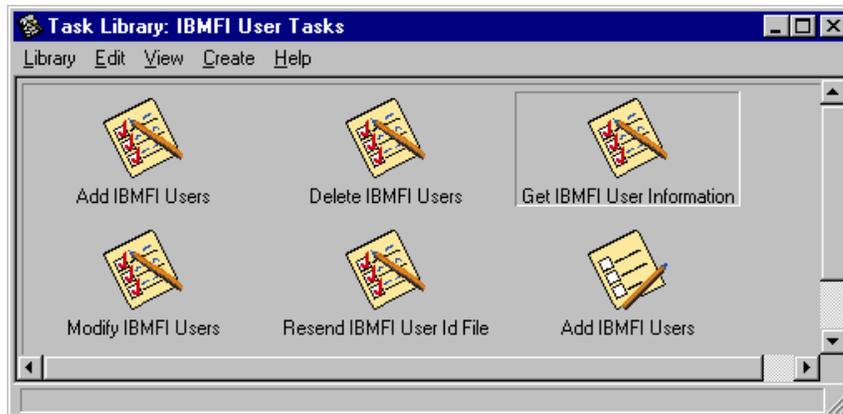


Figure 141. Get IBMFI User Information Selection

2. Now we enter the last name of the user we would like to get the information for, or we could leave this field blank to get the information about all users.
In this first example, we entered `Haapakoski` then clicked on **Set and Execute**.

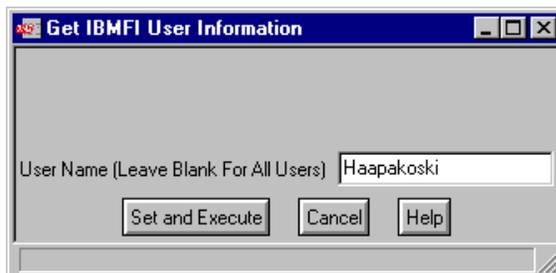


Figure 142. Get IBMFI User Information Dialog

Our results are displayed in the output dialog shown in Figure 143.

```
#####
Task Name: Get IBMFI User Information
Task Endpoint: WTR05156 (NotesServer)
-----Standard Output-----

Status Msg: Getting Information on Haapakoski from WTR05156 ...
Haapakoski;Essi;;;wtr05156/SRV/IBMFI;mail\ehaapak.nsf;;

WTR05156: Getting User Information Complete!
-----Standard Error Output-----
#####
```

Figure 143. Getting User Information Output

In the next example, we have left the User Name field blank to return information for all users in the Name and Address Book, and click on **Set and Execute**. Our output is shown in Figure 144.

```
#####
Task Name: Get IBMFI User Information
Task Endpoint: WTR05156 (NotesServer)
-----Standard Output-----

Status Msg: Getting all User Information from WTR05156 ...
Administrator;Aino;;;CN=wtr05156/OU=SRV/O=IBMFI;mail\aaadminis;;;
Haapakoski;Essi;;;CN=wtr05156/OU=SRV/O=IBMFI;mail\ehaapak.nsf;;;
Hebblethwaite;Kathy;;;CN=wtr05156/OU=SRV/O=IBMFI;wtr05156;khebblet.nsf;;;
Hakkarainen;Vili;;;wtr05156/SRV/IBMFI;mail/jhakara.nsf;Helsinki;;
Karikko;Sebastian;;;wtr05156/SRV/IBMFI;mail\skarikko.nsf;;

WTR05156: Getting User Information Complete!
-----Standard Error Output-----
#####
```

Figure 144. Getting User Information Output

5.2.6 Resending a User ID File

This task will distribute a user ID file from a Domino server to a specified client machine.

Use these steps to resend a user ID file to a client machine:

1. From the IBMFI User Tasks window, double-click on the **Resend IBMFI User Id File** job icon to display the Resend IBMFI User ID File dialog.

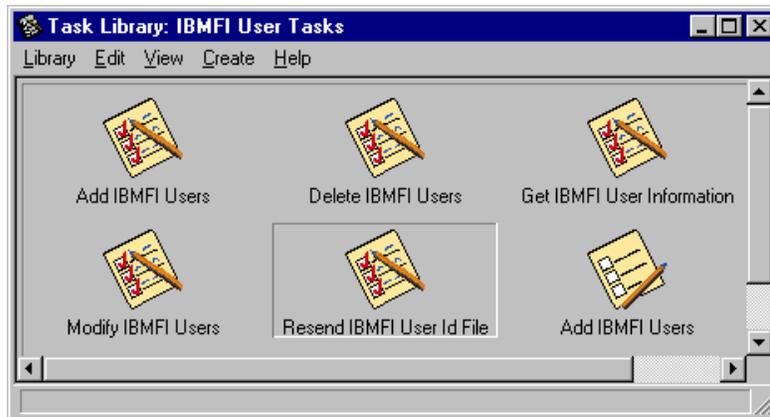


Figure 145. Resend IBMFI User Id File Selection

2. In the User Name field, we specify the user whose user ID file we would like to send, with the first and last name matching as it appears in the Name and Address Book. We specified `Essi Haapakoski`. We also must enter the name of the client machine that we are sending the user ID file to in the Destination Host field. Our client name is `boss173`. Next we enter the full path name of the directory on the client machine where we would like to store the user ID file. We have specified a value of `d:\notes\data`. Click on **Set and Execute**.

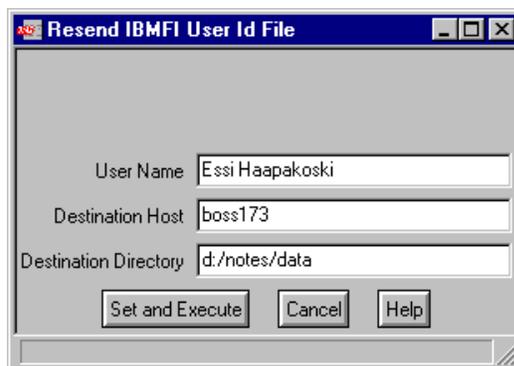


Figure 146. Resend IBMFI User Id File Dialog

Our results are displayed in the output dialog shown in Figure 147.

```

#####
Task Name:Resend IBMFI User Id File
Task Endpoint:WIR05156 (NotesServer)
-----Standard Output-----

Status Msg: Resending User Id File for Essi Haapakoski to\n d:/notes/data on boss173

WIR05156: Resending Essi Haapakoski User Id File Complete!
-----Standard Error Output-----
#####

```

Figure 147. Resending User ID File Output

5.3 User Management Tivoli Commands

The Tivoli Manager for Domino w commands allow for the management of users without the use of a GUI. These commands are commonly used when someone is remotely logged in to the server and unable to bring up the graphical Tivolidesktop or when an administrator wishes to write shell scripts to contain these commands for automation. The w commands map closely to the user tasks that are available, as the user tasks call these commands during their execution. The w commands that are available with the Tivoli Manager for Domino are described in the following sections.

5.3.1 wcrtnotesusrs

The wcrtnotesusrs command adds Notes users to a Name and Address Book and requires a Notes registration file as input, just as the Adding DomainAlias Users task does (see 5.2.1, “Notes Registration File” on page 129 and 5.2.2, “Adding Users” on page 130). The same fields are required in the Notes registration file and the same default values are applied as those in the Adding DomainAlias Users task. The syntax for executing the command is:

```

wcrtnotesusrs -s NotesServer -f File -k CertId [-K CertIdPassword]
[-i][-S FieldSeparator][-F Fields]

```

where:

- s NotesServer** Specifies the Notes server name (Tivolimanaged resource name).
- f File** Specifies name of the Notes registration file.
- k CertId** Specifies the certifier ID file location (directory) and name for the Notes server.
- K CertIdPassword** Specifies the certifier ID password.
- i** Specifies to distribute user ID files specified in Notes registration file to client hosts.
- S FieldSeparator** Defines a new character you wish to use as a field separator in the Notes registration file.
- F Fields** Defines new format for Notes registration file. Fields must be enclosed in double quotes (").

5.3.2 wdelnotesusrs

The `wdelnotesusrs` command deletes users from the Name and Address Book and requires a Notes registration file as input, just as the Deleting DomainAlias Users task does (see 5.2.1, “Notes Registration File” on page 129 and 5.2.3, “Deleting Users” on page 132). The same fields are required in the Notes registration file that are required in it when executing the Deleting DomainAlias Users task. The syntax for executing the command is:

```
wdelnotesusrs -s NotesServer -f File [-S FieldSeparator][-F Fields]
```

where:

- s NotesServer** Specifies the Notes server name (Tivoli managed resource name).
- f File** Specifies name of the Notes registration file.
- S FieldSeparator** Defines a new character you wish to use as a field separator in the Notes registration file.
- F Fields** Defines new format for Notes registration file. Fields must be enclosed in double quotes (“”).

Note that this command only removes the user information from the Name and Address Book. Any mail files or user ID files that were created and stored in a directory when the user was added are *not* removed.

5.3.3 wgetnotesusrs

The `wgetnotesusrs` command retrieves user information from the Name and Address Book, and behaves similarly to the Get DomainAlias User Information task (see 5.2.5, “Getting User Information” on page 135), with one exception. With the `wgetnotesusrs` command, you can specify what fields you wish to retrieve. The task retrieves all information. The syntax for executing the command is:

```
wgetnotesusrs -s NotesServer [-u UserName][-F Fields]
```

where:

- s NotesServer** Specifies the Notes server name (Tivoli managed resource name).
- u UserName** Specifies name of the user to retrieve information for. If not specified, information for all users in the Name and Address Book will be retrieved. When using this parameter, a minimum of a last name is required, but if first name and middle initial are included, the name must be in the format `firstname MI lastname`.
- F Fields** Defines which fields to retrieve from the Name and Address Book. Fields must be separated by semi-colons (;) and enclosed in double quotes (“”).

5.3.4 wsetnotesusrs

The `wsetnotesusrs` command modifies user information for users already defined in a Name and Address Book and requires a Notes registration file as input, just as the Modifying DomainAlias Users task does (see 5.2.1, “Notes Registration File” on page 129 and 5.2.4, “Modifying User Information” on page 134). The

wsetnotesusrs command replaces the user information with the new information that is specified in the Notes registration file, so pay special attention to define all fields that you wish to be stored for that user in the Address Book, not just the fields that you wish to change. Fields that are not specified in the registration file when executing this command will be removed from the Address Book if they were defined when the user was added. The syntax for executing the command is:

```
wsetnotesusrs -s NotesServer -f File [-i] [-S FieldSeparator]
[-F Fields]
```

where:

- s NotesServer** Specifies the Notes server name (Tivolimanaged resource name).
- f File** Specifies name of the Notes registration file.
- i** Specifies to distribute user ID files specified in Notes registration file to client hosts.
- S FieldSeparator** Defines a new character you wish to use as a field separator in the Notes registration file.
- F Fields** Defines new format for Notes registration file. Fields must be enclosed in double quotes (").

5.3.5 wconfigclient

The wconfigclient command retrieves and sends a Notes user ID file from a Domino server to a Notes client, just as the Resend DomainAlias User ID File job does (see “Resending a User ID File” on page 137). This command also distributes an INI file to the Notes client that is used as a part of the configuration process for a Notes client installation. (See “Notes Client Installation, Configuration, and Upgrade” on page 145 for more information on installing and configuring a Notes client.) This INI file will not be used if you are not configuring a Notes client, and this INI file does not affect a user's current NOTES.INI file. Optionally, you can use the wgetidfile (see 5.3.6, “wgetidfile” on page 142) and wputnotesfile (see 5.3.7, “wputnotesfile” on page 142) commands to resend a Notes user ID file. The syntax for executing the command is:

```
wconfigclient -s NotesServer -u UserName -h Remote Host -o RemoteDir
```

where:

- s NotesServer** Specifies the name of the Domino server managed resource to retrieve the user ID file from.
- u UserName** Identifies the user whose user ID file will be retrieved. A minimum of a last name is required, but if first name and middle initial are included, the name must be in the format firstname MI lastname.
- h RemoteHost** Specifies the client to distribute the user ID and INI files to.
- o RemoteDir** Specifies the directory that the user ID and INI files will be stored in on the client. The directory must be fully qualified and enclosed in double quotes ("). Otherwise, it will be placed in a path relative to \$DBDIR.

5.3.6 wgetidfile

The wgetidfile command retrieves a user ID file from a Domino server and stores it locally. This command can be used in conjunction with the wputnotesfile command (see 5.3.7, “wputnotesfile” on page 142) to resend user ID files from a Notes server to a remote host. The wconfigclient command (see 5.3.5, “wconfigclient” on page 141) calls both of these commands, condensing this operation to one command. The syntax for executing the command is:

```
wgetidfile -s NotesServer -u UserName -o File
```

where:

- s NotesServer** Specifies the name of the Domino server managed resource to retrieve the user ID file from.
- u UserName** Identifies the user whose user ID file will be retrieved. A minimum of a last name is required, but if first name and middle initial are included, the name must be in the format firstname MI lastname.
- o File** Specifies the directory and file name to store the file that is being retrieved.

5.3.7 wputnotesfile

The wputnotesfile command distributes a local file to a remote client, using Tivoli Software Distribution. This command can be used in conjunction with the wgetidfile command (see 5.3.6, “wgetidfile” on page 142) to resend user ID files from a Notes server to a remote host. The wconfigclient command (see 5.3.5, “wconfigclient” on page 141) calls both of these commands, condensing this operation into one command. The syntax for executing the command is:

```
wputnotesfile -i LocalFile -h RemoteHost -o RemoteDir
```

where:

- i LocalFile** Specifies the local file name you wish to distribute.
- h RemoteHost** Specifies the name of the client you wish to distribute the file to. The client must be a managed or PC managed node.
- o RemoteDir** Specifies the directory of the client where you wish the file to be stored in. If the specified directory is not fully qualified, then the directory is created relative to the \$DBDIR directory.

5.4 User Task and Profile Management Comparison

Now that we have stepped through the methods of managing Notes users that are available with the Tivoli Manager for Domino, the following table generally maps the differences between the management of Notes users using the Tivoli Manager for Domino Admin Extension and the user tasks:

Table 12. Tivoli Manager for Domino User Management Comparison

User Profile Management	User Task Management
Requires Tivoli User Administration	Only requires Tivoli Framework

User Profile Management	User Task Management
Extensive options available when adding Notes users	Fewer options available when adding Notes users
Retrieval of Notes user information not supported	Get User Information task available
Centralized user management with Tivoli User Administration	Decentralized user management without Tivoli User Administration
w commands available for some user profile management, but cannot add notes user information to user profile	w commands available for execution of user task functionality

Chapter 6. Notes Client Installation, Configuration, and Upgrade

The Tivoli Manager for Domino provides two configuration tasks (Configure DomainAlias Client Install and Configure DomainAlias Client Upgrade) to build software distribution file packages for the installation and upgrade of Notes clients. These tasks can build a file package for the following platforms:

- AIX 4.1 and 4.2
- HP-UX 10
- Solaris
- NetWare
- OS/2
- Windows
- Windows 95
- Windows NT

See the *Lotus Notes Install Guide* to determine what platforms and versions the various Notes client versions (4.1, 4.5, and 4.6) support.

Here is a roadmap for configuring the Notes client install. You need to repeat it for each platform you want to distribute to.

1. Use the Lotus Notes installation procedure to install (and optionally configure) a reference copy of the Notes client.
2. Copy the installed files to a directory on a managed node.
3. Run the task Configure DomainAlias client install.

To install the Notes client remotely you need to:

1. Subscribe the desired clients or client lists to the new profile manager.
2. Distribute the file package profile.
3. Configure the Notes client desktop.

Please see the *TME 10 Module for Domino Release Notes* for a list of the known defects, limitations, and workarounds related to Notes client installations. In this chapter OS/2 , Windows 95 and Windows NT (for the Notes client platform) are used as examples.

6.1 Building the Notes Reference Copy

For each platform, you need to use the normal Notes client installation procedures to build a reference image. There are two types of reference images that you can create:

- You can set up an unconfigured Notes client as a reference image. This means that after the client code is distributed with Tivoli Software Distribution, the user will need to supply all the configuration information, such as user name, mail server, and add any desired databases to the Notes client desktop, after the Notes client is started.

- Another option is to set up a preconfigured client as a reference image. With this option, after the client code is distributed, the user will be able to configure their Notes client desktop automatically by launching a Tivoli Manager for Domino-supplied Notes database after the Notes client is started. Note that if you choose to use this method, you must have defined the user to the Public Name and Address Book using the Tivoli Manager for Domino Add User task or the Admin Extension functionality.

We built both types of reference images and have documented the procedures for each in the next two sections.

6.1.1 Creating an Unconfigured Reference Copy

In this section, we build an unconfigured Notes 4.5 reference copy for OS/2. To install the Lotus Notes workstation on OS/2, do the following:

1. Go to the directory OS2\INSTALL on your Notes 4.5 CD-ROM and run INSTPM.EXE.
2. In the Installation Method window (Figure 148) select **Standard installation** and click on **OK**.

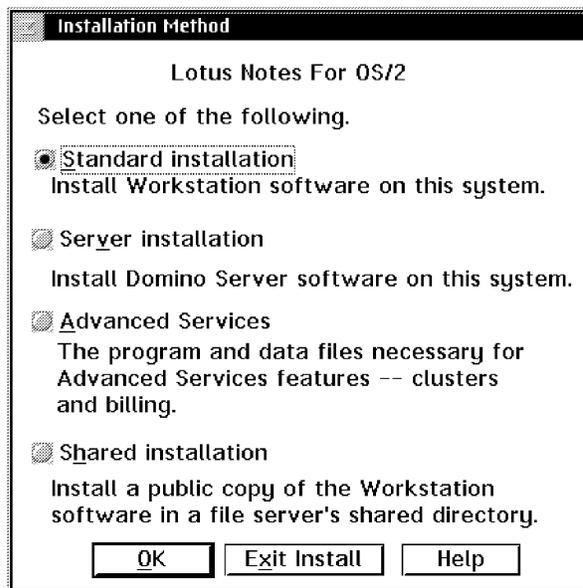


Figure 148. Installation Method

3. Click on **Continue** in the Lotus Notes Installation Instructions window (Figure 149).

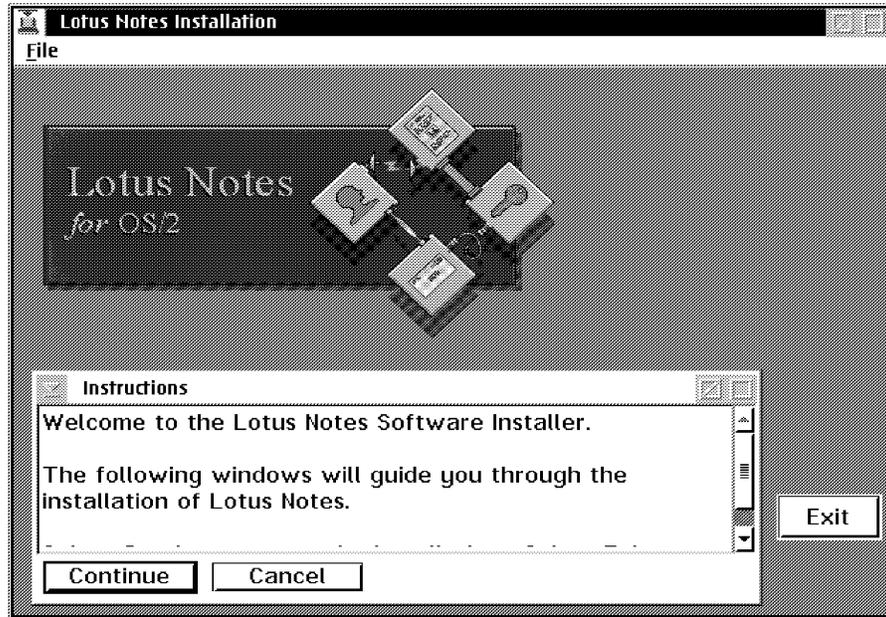


Figure 149. Lotus Notes Installation Instructions

4. Click on **OK** in the Install window (Figure 150).

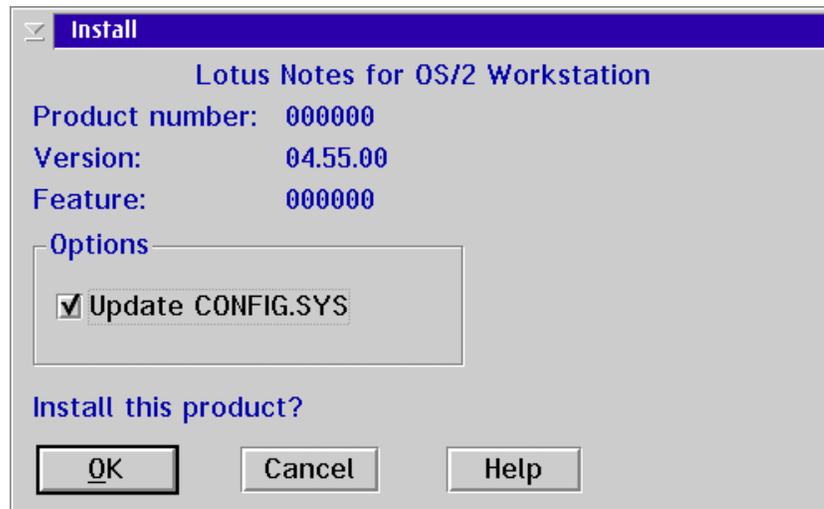


Figure 150. Install

5. In the Install - directories window (Figure 151):
 1. Select the components you want to install. (We selected Notes Workstation, Notes Viewers, Notes Data and Notes 4 Help Lite.)
 2. Enter the Notes and the Notes Data directories (in our example, C:\NOTES and C:\NOTES\DATA).
 3. Click on **Install....**

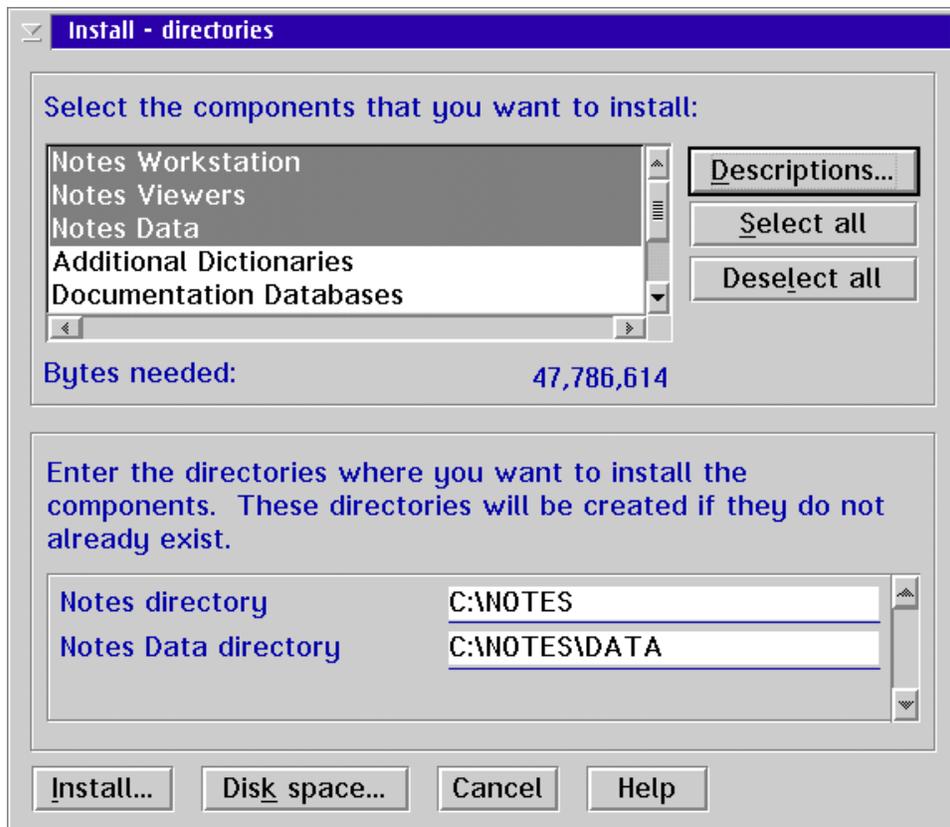


Figure 151. Install - Directories

6. Follow the instructions until the installation is finished.

Once the installation is completed, copy the \NOTES directory and all its subdirectories and files to a directory in a managed node that will be acting as the source for the distribution (for example, /Notes_Clients/os2/notes). You should ensure that for all PC platforms, you place the Notes client reference image in a subdirectory of NOTES on the managed node. During the Configure DomainAlias Client Install job (see 6.2, “Configuring a DomainAlias Client Install” on page 151), the target directory that is created appends this last directory to the end of the target directory specified. For PC platforms, we want the directory to end up in a /NOTES directory.

You must also copy the notes.ini file to the source machine. In our case we copied it to /Notes_clients/os2/notes/notes.ini on the source. This file is used to customize the Notes desktop (see 6.4, “Configuring the Notes Client Desktop” on page 165).

6.1.2 Creating a Preconfigured Reference Copy

In this section, we created a reference copy with the Tivoli Manager for Domino-supplied Notes database that will allow for automatic client configuration and user-specific customization. Tivoli supplies two versions of this Notes database for configuration: NUReadme.nsf for use with configuring Notes 4.1 clients, and NUReadme45.nsf for use with configuring Notes 4.5 and 4.6 clients. Unfortunately, the NUReadme45.nsf shipped with the Tivoli Manager for Domino

Version 1.5 CD-ROM was corrupt, so it can not be used. You should check to see if a Tivoli Manager for Domino patch is available that fixes this NURedme45.nsf problem if you would like to use this option for Notes 4.5 or 4.6 clients. We step through this process with a Notes 4.1 Windows 95 client.

Using this method, install the Notes 4.1 client as usual:

1. Go to the install directory of the Lotus Domino 4.1 CD-ROM (\W32intel\Install) and start the install.exe program.
2. Go within the installation program and choose from the Install Options window the **Standard Install** option (see Figure on page 149).

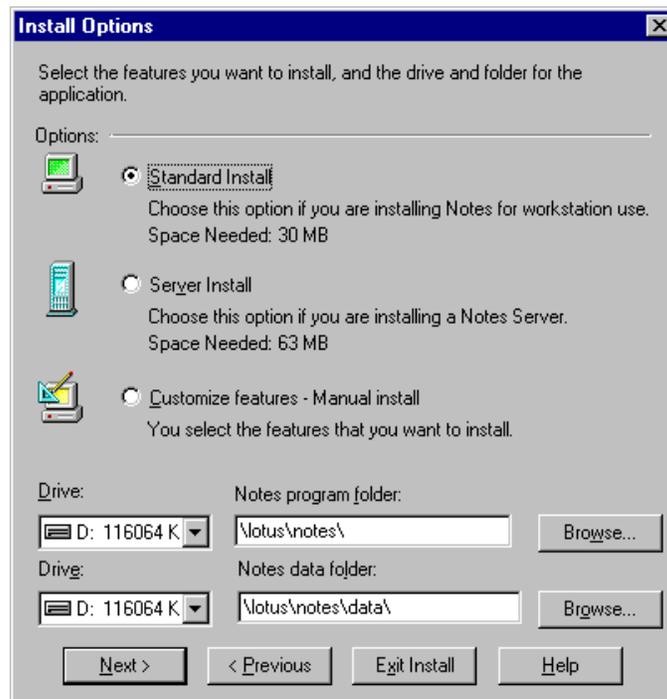


Figure 152. Install Options

3. Choose the Drive and Notes program and data folders as in Figure on page 149. Click on **Next >** to continue installation.
4. Follow the instructions until the installation is finished.

The installation procedure is the same for Windows NT.

Our next step is to start defining the client configuration. Using a temporaryID that has been defined in the domain's Name and Address Book, start the client and do the user-specific configuration. We started the client and configured it for user Aino Administrator. We entered the Username to be Aino Administrator and Homeserver to be wtr05156/SRV/IBMFI.

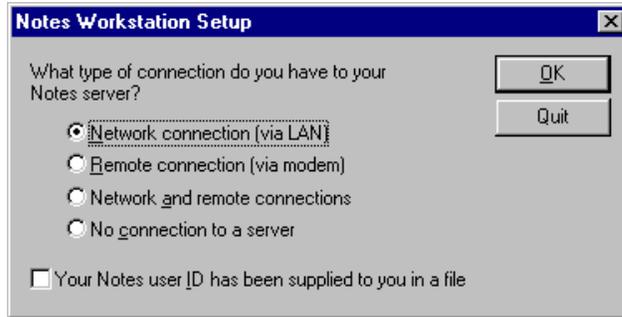


Figure 153. Notes Workstation Setup - Connection Type

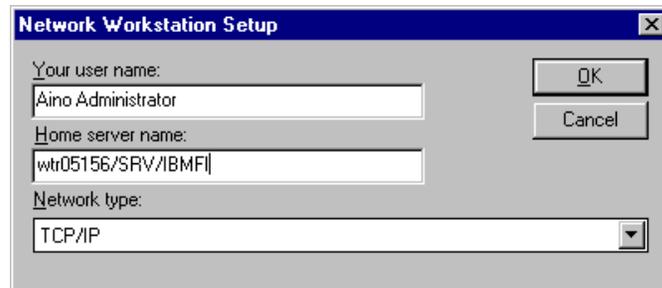


Figure 154. Notes Workstation Setup

After the client is configured, delete all the existing databases from the desktop and add the NURadme.nsf database to the desktop. The NURadme.nsf can be found in \$BINDIR/./generic_unix/TME/Notes/<DomainAlias>/nsf on your TMR server. Copy it to the system you are creating the reference copy on, in the client's data directory (typically \notes\data). From the Notes client desktop, from the **File** pull-down menu, select **Database -> Open**. Locate the NURadme.nsf file machine using the Browse push button. Once located, select the **Add Icon** push button.

After you have the client configured, stop the client and edit the notes.ini file, removing the values from the following fields:

```
KeyFilename=
CertificateExpChecked=
MailServer=
MailFile=
Location=Office (Network),2106,CN=
```

You may also want to update values for the fields in the notes.ini file that reference drives and directories (for example, NOTESPROGRAM, Directory, FileDlgDirectory) so that they represent the drives and directory locations on the target systems.

Additionally, you can also define databases and replicated databases to be added to a user's desktop in the notes.ini file, in the form DesktopDatabaseX and DesktopReplicaX, where X starts at 1 for the first definition of each, and is incremented by one for each subsequent definition. In our example, we added the

Public Name and Address Book, Personal Address Book, Favorites and Journal databases. We also created one replica of the Public Names and Address Book.

```
DesktopDatabase1=wtr05156!names.nsf
DesktopDatabase2=names.nsf
DesktopDatabase3=favorite.nsf
DesktopDatabase4=journal.nsf
DesktopReplica1=wtr05156!names.nsf,d:\notes\data\ibmfi.nsf
```

All database locations default to the data directory. Otherwise, a fully qualified file location must be specified. If the database is located on the client, only the database location and file name should be specified. If the database is located on the server, then the value should be in the form <servername>!!<file_location>. For replicated databases, the value should be in the form <original_location>,<new_location>, separated by a comma, where the syntax of the locations is the same as what we just previously described.

Once the modifications of the notes.ini file are completed, copy the \NOTES directory and all its subdirectories and files to a directory in a managed node that will be acting as the source for your distribution (for example, /Notes_Clients/win95/notes). You should ensure that for all PC platforms, you place the Notes client reference image in a directory of NOTES on the managed node. During the Configure DomainAlias Client Install job (see 6.2, “Configuring a DomainAlias Client Install” on page 151), the target directory that is created appends this last directory to the end of the target directory specified. For PC platforms we want the directory to end up in a /NOTES directory. Don’t forget to copy the notes.ini file to the managed node, as well. In our case, we copied it to /Notes_clients/win95/notes/notes.ini.

6.2 Configuring a DomainAlias Client Install

Our next step is to configure the DomainAlias client install by creating Tivoli Software Distribution file packages. We set up three file packages for OS/2, Windows 95, and Windows NT platforms in this section as examples. Use the following steps to configure the client installation from the Tivoli Desktop:

1. From the Module for Notes policy region, open the DomainAlias policy region.
2. Open the DomainAlias Utilities task library (Figure 155).

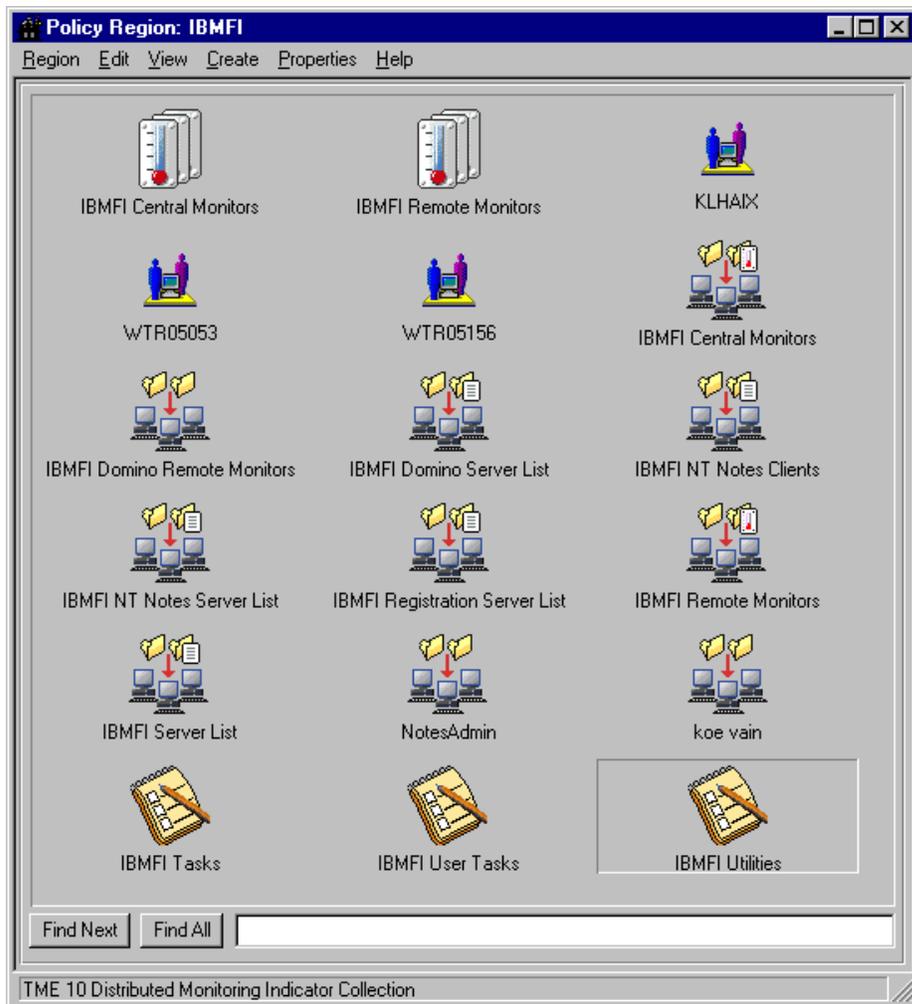


Figure 155. Policy Region: IBMFI

3. Run the Configure DomainAlias Client Install job (Figure 156).

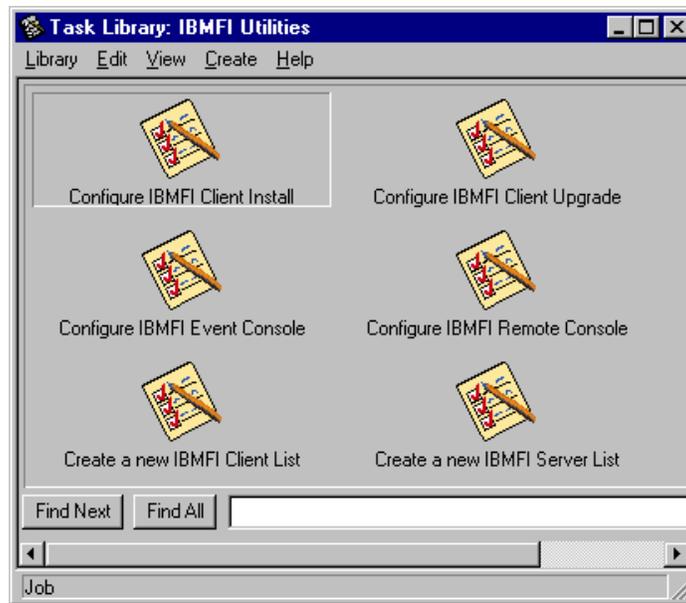


Figure 156. Task Library: IBMFI Utilities

4. In the Configure IBMFI Client Install dialog, enter the following information (see Figure 157, Figure 158, and Figure 159 for an OS/2, Windows 95, and Windows NT example, respectively):

1. Enter a new or existing configuration name. This name will be a part of the profile manager name that is created as a result of this task. This configuration name enables the creation of additional Tivoli Software Distribution file packages with differing options and configurations within the same profile manager. It should be a short name that identifies the organization, installation options, etc. In our example, we specified Helsinki OS2 for the OS/2 platform, Helsinki Win95 for Windows 95, and Helsinki NT for Windows NT.

Notes:

The configuration name does not need to identify the platform type, as the file packages created within the profile manager with this name will have the platform type automatically incorporated into its name, but you may find that you want to specify a different configuration name (profile manager) for each platform type to help you to better organize the profiles.

In the case of UNIX platforms, each configuration (profile manager) can contain file packages for only one UNIX type, because Tivoli Software Distribution supports only one set of installation scripts for all UNIX platforms. As a result, the module configures each script to work only on one specific platform.

2. Select the Destination Platform. Figure 157 reflects the OS/2 platform options; Figure 158 reflects the Windows 95 platform options; and Figure 159 reflects the Windows NT platform options.
3. Enter the following Source Information:

Managed Node Name

Enter the name of the managed node you copied the Notes client code to that is acting as the distribution server. In our example, hebble was used to store the client code for all of the platforms.

Source Directory

Enter the directory you copied the Notes client code to. In our example the directories were: /Notes_Clients/os2/notes for OS/2, /Notes_clients/win95/Notes for Windows 95, and /Notes_clients/winnt/notes for Windows NT.

Source Notes.ini File (Full Path)

Enter the complete path to the notes.ini file. In our example the paths were: /Notes_clients/os2/notes/notes.ini for OS/2, /Notes_clients/win95/notes/notes.ini for Windows 95, and /Notes_clients/aix/notes/notes.ini for Windows NT.

Notes:

For UNIX platforms, a notes.ini file does not get created until you configure the Notes client for a user, but this task requires that you specify a notes.ini file name here. If you are distributing an unconfigured Notes client to UNIX systems, you can copy the file /opt/lotus/notes/4500/common/data/nls/C/notesini/client.ini to your distribution directory as the notes.ini file to satisfy this requirement.

For the PC platforms, a notes.ini file gets created during the Notes client installation process, so you have a notes.ini file regardless of whether or not you configured the client for a preconfigured reference copy.

4. Enter the following destination information:

Target Directory

Enter the directory path for Notes. The default is C:\. Tivoli Software Distribution creates a directory of NOTES for PC platforms or lotus for UNIX platforms under the path you specify here. For example, if the source directory is /Notes_clients/os2/notes and the target directory you specified here is C:\NOTES, it distributes the files to C:\NOTES\NOTES, which probably isn't what you want. The target directory must be C:\ if you want the files installed in C:\NOTES. Another example is if the source directory is /Notes_clients/aix/lotus and the Target Directory is /usr/lpp, it distributes the files to /usr/lpp/lotus. You must put the source files in a source directory ending in NOTES for the PC platforms and ending in lotus for the UNIX platforms. In our example we chose C:\ for OS/2 and D:\ for Windows 95 and Windows NT.

Notes.ini Target Directory

Enter only the target directory path for the notes.ini file. The default is C:\WINDOWS. For OS/2 systems, enter C:\NOTES\DATA. (Change the C to your corresponding drive letter.) With UNIX systems you'll recall that the notes.ini file does not get created until the workstation is customized. As a result, the information entered here for a UNIX system will not be used, although an entry is required to continue with our task.

In our example, we selected C:\NOTES\DATA for OS/2, C:\WINDOWS for Windows 95 and C:\WINNT for Windows NT.

Free Space (Mbytes)

Enter the number of megabytes required for the client installation. It is 55 MB for our OS/2 installation, 60 MB for our Windows 95 and Windows NT and 80 MB for our AIX 4 installation (after removing the help databases). The safest way to find the size information is to look at the size of the directory that the installed files reside in on the system that you used to create the reference image.

Userid (UNIX Only)

Enter the user ID that should own the Notes binaries. Usually the user ID is notes.

Groupid (UNIX Only)

Enter the group ID for the Notes binaries. Usually the group ID is notes.

5. Click on **Set and Execute**.

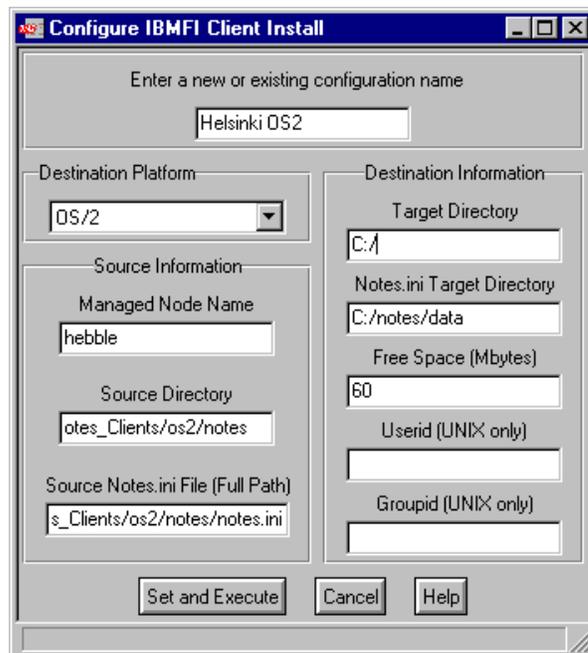


Figure 157. Configure IBMFI Client Install (OS/2)

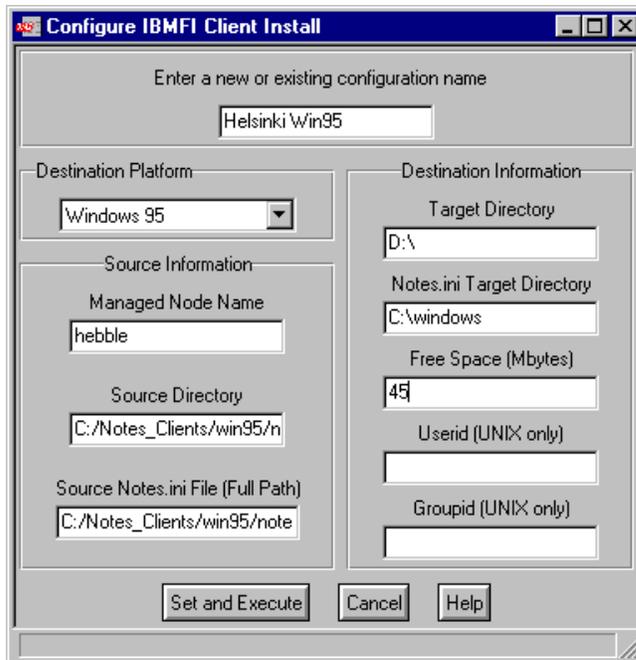


Figure 158. Configure IBMFI Client Install (Win95)

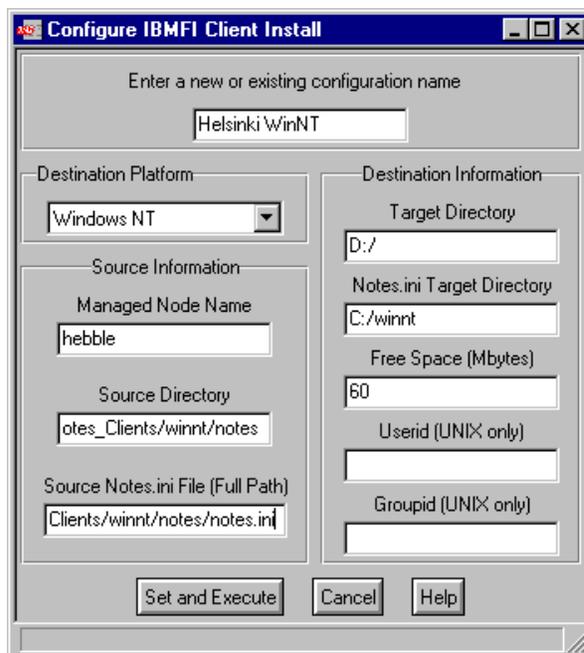


Figure 159. Configure IBMFI Client Install (Winnt)

6.2.1 Configure DomainAlias Client Install Job Results

The Configure DomainAlias Client Install job creates:

- One profile manager named Install DomainAlias (<configuration name>). In Figure 160 the three profile managers we created for our environment are

shown. (We ran the Configure DomainAlias Client Install three times, once for each profile manager created.)

- Install IBMFI (Helsinki OS2)
- Install IBMFI (Helsinki Win95)
- Install IBMFI (Helsinki WinNT)

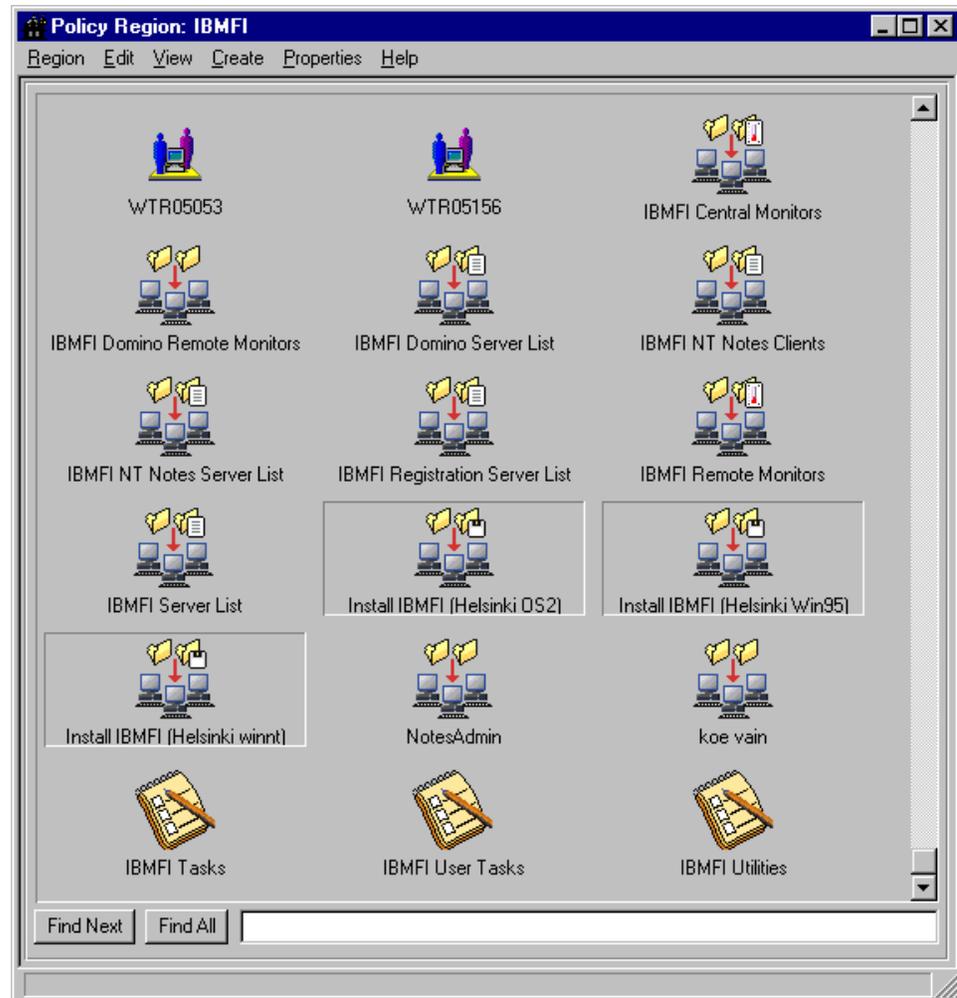


Figure 160. Policy Region IBMFI with the Install IBMFI Profile Managers

- Two profiles (Figure 161) in each new profile manager:
 - DomainAlias <platform> Client Nested Image (<configuration name>). In our OS/2 example, it is IBMFI OS2 Client Nested Image (Helsinki OS2).
 - Install DomainAlias <platform> Client (<configuration name>). In our OS/2 example, it is Install IBMFI OS2 Client (Helsinki OS2).

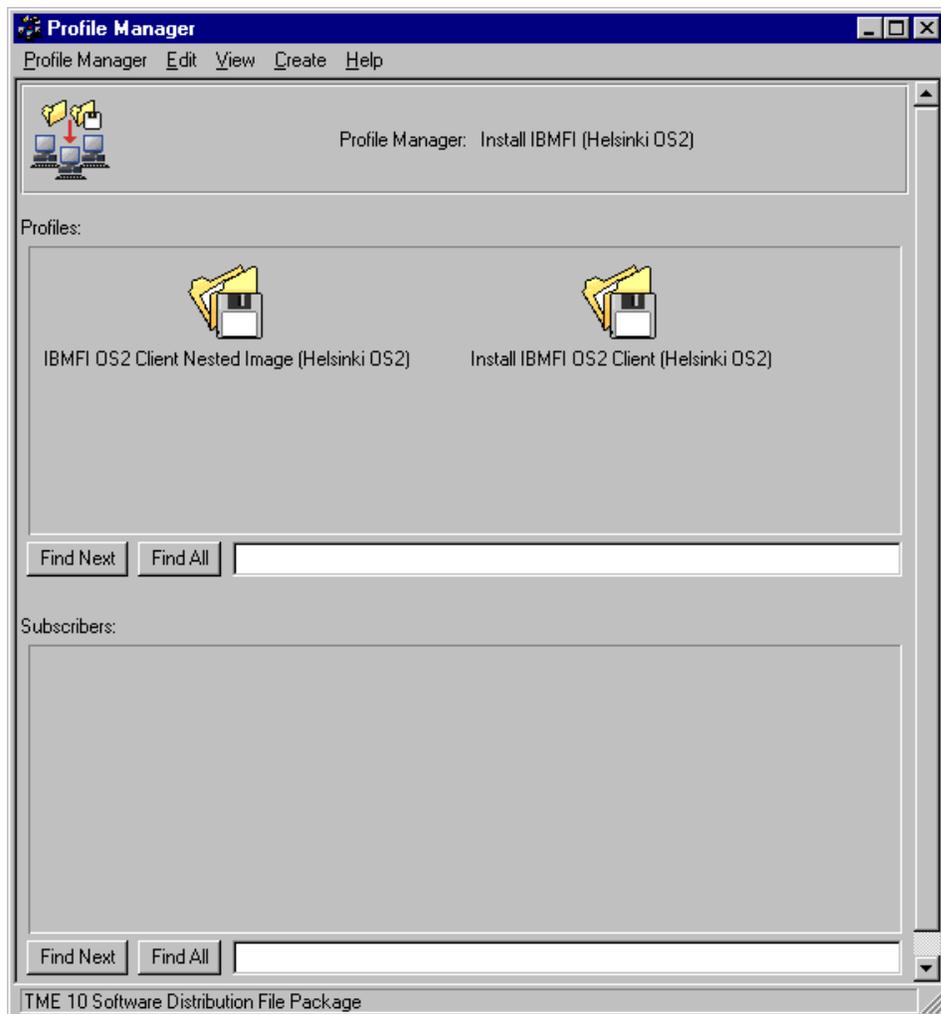


Figure 161. Install IBMFI(Helsinki OS2) Profile Manager

The Nested Image profile contains the Notes source code directory and the notes.ini file full path. It also defines an after installation script to be run. The Install profile contains the after installation scripts' code to be distributed to the endpoints (these after installation scripts are stored in the TMR server) and the Nested Image profile. It also defines the before installation script to be run.

With this configuration, the Notes source code directory and the notes.ini file can be stored on any managed node.

The before installation script in the Install profile checks to see if there is enough disk space for the installation.

The after installation script in the Nested Image profile:

- For PC platforms, moves the notes.ini file to the correct directory and adds the Notes Program Group and Icon to the operating system's desktop.
- For UNIX platforms, moves the notes.ini file to the correct directory and changes the owner and the group of the Notes files to the values you specified in the Configure DomainAlias Client Install dialog in the previous section.

Notes:

At the time of writing of this redbook, the before installation script, PREC.CMD, calls the wdskspace command, which checks for free disk space. This command currently is not supported on the OS/2 platform. If a Tivoli Software Distribution fix is not available for the command, you can either edit the PREC.CMD file and remove the call, or remove the PREC.CMD file from the file package altogether.

With the exception of the OS/2 client installations, the after install script that is defined in the Nested Image profile calls another program to be run. The Install File package distributes these two files to the clients. The OS/2 Install File packages distribute two files as well (POSTC.CMD and POST.BAT), even though the second file (POST.BAT) does not get called by the after install script (POSTC.CMD). If you wish to remove POST.BAT from the Source Directories & Files list box in the Install File Package, so that it does not get distributed to the clients (see 6.2.2, "Customizing the File Packages and Installation Scripts" on page 159).

The order of the steps that are executed when distributing the Notes client profiles with this configuration is:

1. The Install profile before script is run. This script checks for disk space.
2. The Install profile files are distributed to the target system(s). In our case it is the files needed to run the after script programs.
3. The Install profile after script is run. There is no default Install profile after script defined, but you may customize the file package and add one if you wish.
4. The Nested Image profile before script is run. There is no default Nested Image profile before script defined, but you may customize the file package and add one if you wish.
5. The Nested Image profile files are distributed to the target system(s). These files are the Notes client code and the notes.ini file.
6. The Nested Image profile after script is run. This is the script that was distributed to the subscribers by the Install profile and performs the needed Notes client configuration.

The installation scripts and file package definition can be found under the directory \$BINDIR/./generic_unix/TME/Notes/DomainAlias/fp.

6.2.2 Customizing the File Packages and Installation Scripts

Depending on your organization's needs, you may wish to customize the file packages and/or installation scripts that the Tivoli Manager for Domino created for you. For example, you may wish to store a backup copy of the original notes.ini file that is distributed on the client, or you may wish to add your own installation program in addition to the default before and after installation scripts to perform additional customization on the clients. The default before and after install programs are commented well, and making minor changes to them is quite easy. The file packages are standard Tivoli Software Distribution file packages, so you may make changes to these file packages just as you can with any other Tivoli Software Distribution file package.

Note: Make sure that any installation scripts that you add to the file packages are set as executables if you are using a UNIX machine as source for the distribution, using the chmod command shown below.

```
$ chmod +rx newos2.cmd
```

We provide an example of adding another after install program, newos2.cmd, to our OS/2 Notes client installation procedure. We distribute the source program to our endpoints in the Install profile and call the execution of the after install program in the Nested Image profile, just as the default after install program that the Tivoli Manager for Domino provides is handled.

To change the file packages do the following:

1. From the DomainAlias policy region open the OS/2 Install profile manager (see Figure 160). In our case it is Install IBMFI (Helsinki OS2).

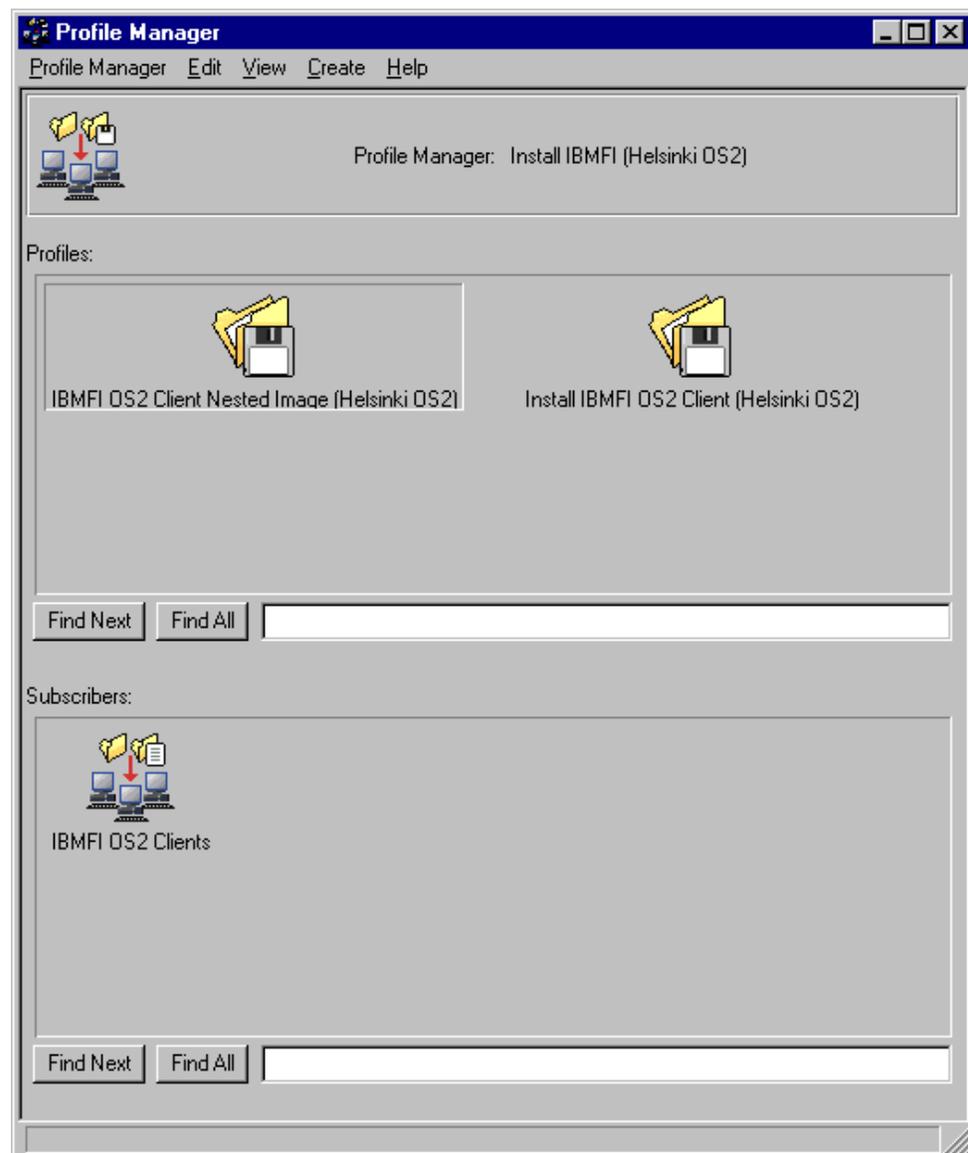


Figure 162. Install IBMFI (Helsinki OS2) Profile Manager

2. Open the Install file package (see Figure 162).

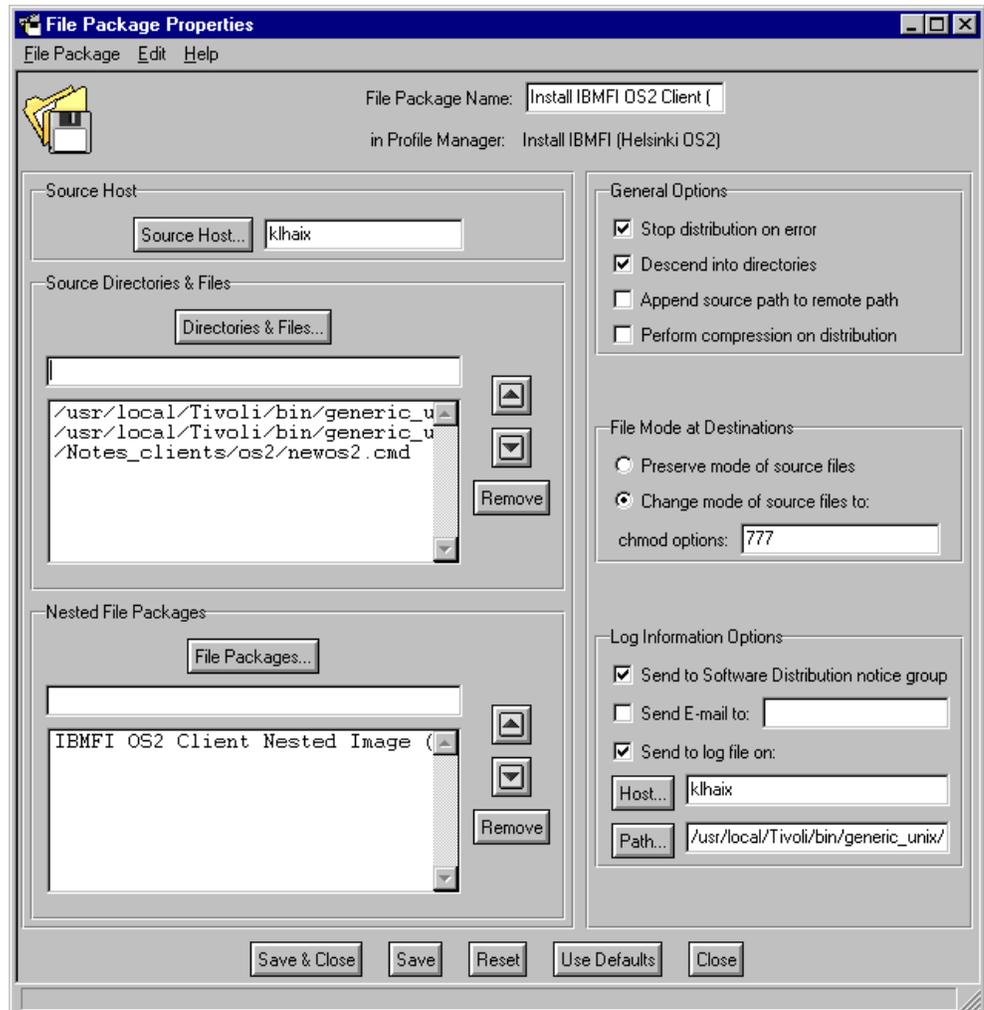


Figure 163. File Package Properties

3. From the File Package Properties window (Figure 163), in the Source Directories and Files section add the news2.cmd file. You need to have a copy of this file in the TMR server and type the full path to it in the Directory and Files input line. Do not forget to press Enter in order to add the news2.cmd path to the list of files. In our example we copied it to /Notes_clients/os2/news2.cmd.

You can also remove the unneeded POST.BAT file here (see the note on page 159) so that it does not get distributed to the OS/2 targets. Unfortunately, since there is no horizontal scroll bar to allow you to see the full directory and file name of the files in the Source Directories & Files list box, you may want to export the file package so that you can see the full file names by selecting **Export...** from the **File Package** pull-down menu.

Click on **Save & Close**.

4. Now you must edit the Nested Image profile. From the Profile Manager window (Figure 162), open the Nested Image profile. In our example it is IBMFI OS2 Nested Image (Helsinki OS2).

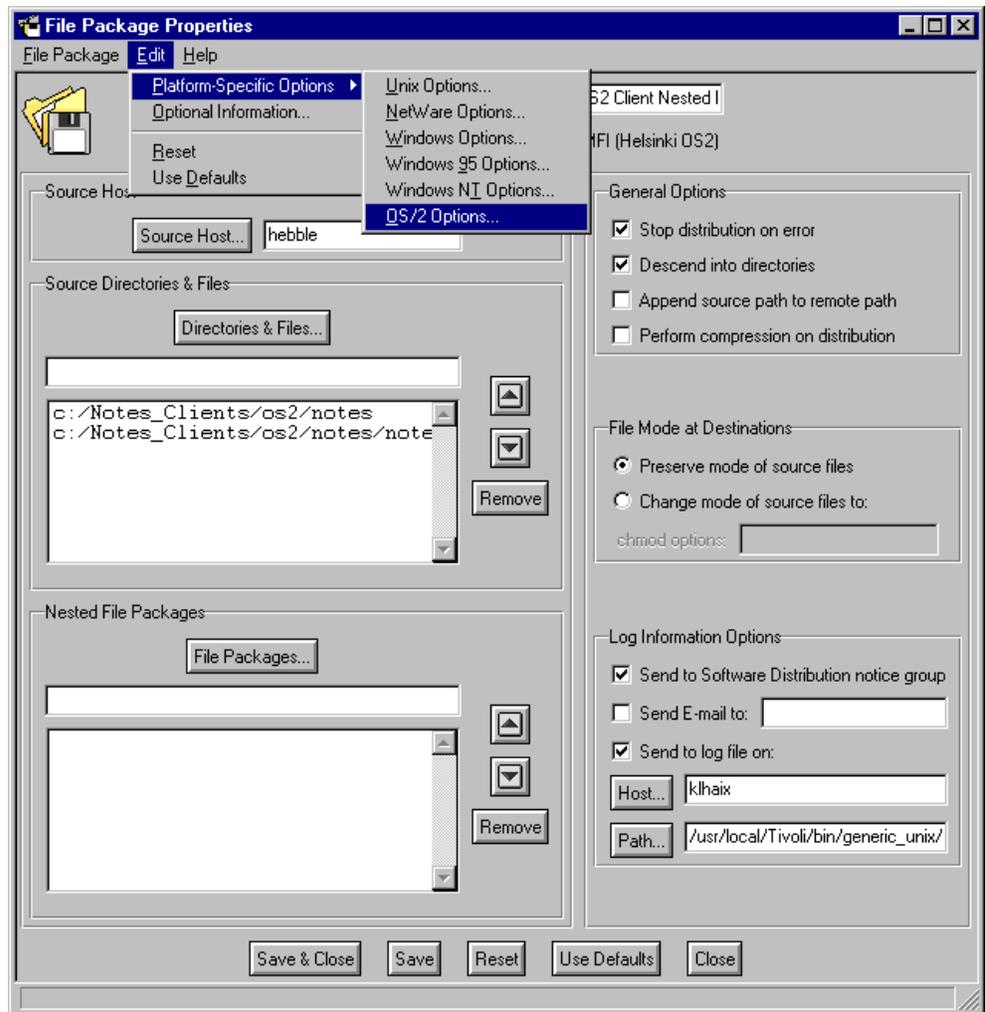


Figure 164. File Package Properties

5. From the File Package Properties window menu (Figure 164), select **Edit -> Platform-Specific Options -> OS/2 Options....**
6. In the File Package Windows OS/2 Options window, click on **After Distribution** to show the after distribution scripts.
7. From the File Package Windows OS/2 Options dialog (Figure 165), in the After Distribution CMD/BAT/EXE/COM File Options section, add `c:\NEWOS2.COM` to the Enter CMD/BAT/EXE/COM file name field, separating it from the existing CMD file name by a comma (,). Make sure that the Get CMD/BAT/EXE/COM file from Subscribers is selected.

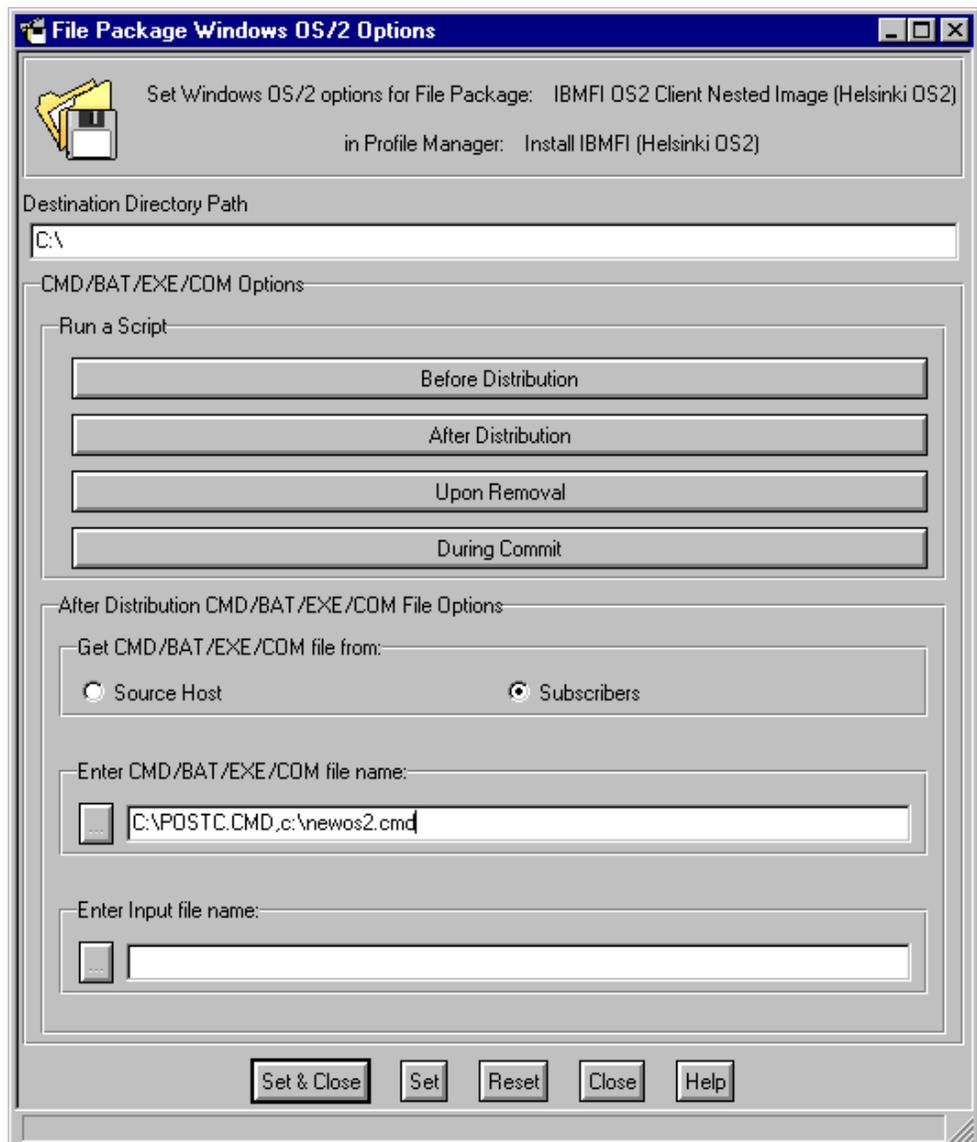


Figure 165. File Package Windows OS/2 Options - After Distribution

8. Click on **Set & Close**.
9. Back at the File Package Properties window (Figure 164), click on **Save & Close**.

6.3 Distributing the Notes Client

To distribute the Tivoli Software Distribution file package profiles, you need to subscribe the targets to the profile manager that contain the profiles. You can create client lists and subscribe them to the profile manager or subscribe single targets. Refer to 3.1, “Creating Lists” on page 43 for more information about lists.

We created a client list named IBMFI OS2 Clients and we subscribed it to the Install IBMFI (Helsinki OS2) profile manager. We also created a client list for

Windows 95 and Windows NT clients and subscribed them to their respective profile managers.

In Figure 166 we have illustrated a representation of the configuration for the OS/2 profiles. (The representation for other platform configurations is the same.)

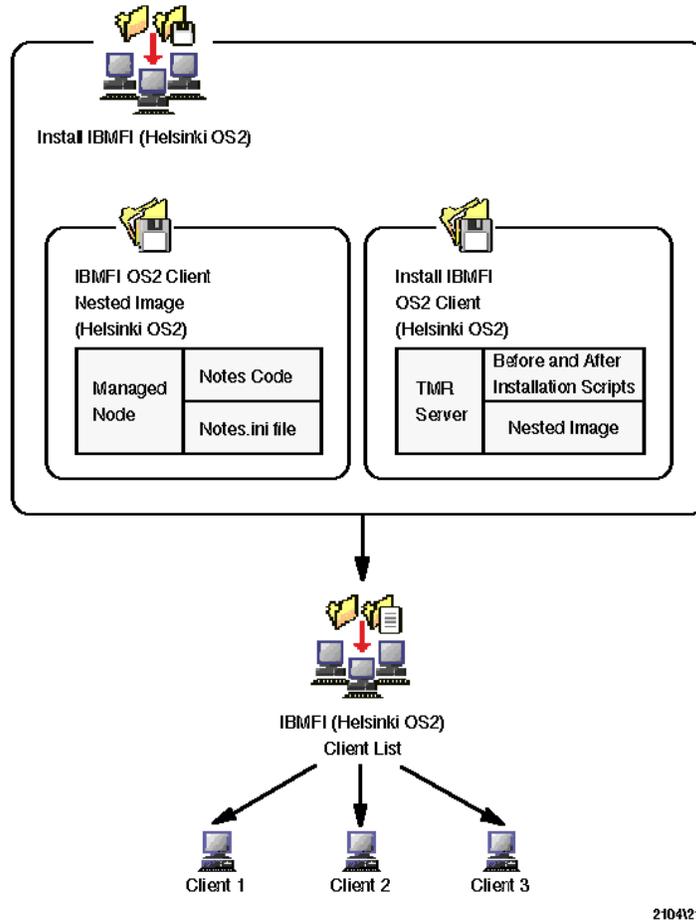


Figure 166. Software Distribution Configuration

The subscription of the targets and client list is a regular Tivoli subscription to a profile manager. There are several ways you can add subscribers. For example, you can drag the target computer icon or the client list icon you want and drop them in the Subscribers panel of the profile manager window.

After you have subscribed your targets, or client lists, you can distribute the Install DomainAlias profile to install the Notes workstations. This is a regular Tivoli profile distribution, so you can use any valid method to distribute the profile. For example, you can drag the profile you want to distribute and drop it on the appropriate subscribers.

The Install DomainAlias (<configuration name>) file package log file name is notes_ci.log and is located in \$BINDIR/./generic_unix/TME/Notes/DomainAlias/fp/<configuration_name>. Refer to this file if you encounter any distribution errors.

The final step in distributing the Notes client is to distribute the user's user ID file to the target system. Using the Tivoli Manager for Domino, you can either accomplish this using the Admin Extension functionality (see 5.1.7, "Managing Notes Users with a User Profile" on page 119) or by executing the Add Users or Resend User ID File tasks (see 5.2.2, "Adding Users" on page 130 or 5.2.6, "Resending a User ID File" on page 137).

If you are *not* distributing a preconfigured Notes client reference image (see "Building the Notes Reference Copy" on page 145), then you can distribute the user ID file using any method you wish (using Tivoli Manager for Domino functionality as referenced above, or any other method). If you *are* distributing a preconfigured Notes client reference image, then you must distribute the user ID file using Tivoli Manager for Domino functionality. The reason for this is that the NURadme.nsf database that will be launched by the end user for configuration uses a <userid>.ini file to pick up the user's default password, domain name, and mail server. This <userid>.ini file is created automatically and distributed along with the user ID file with any of the previously described Tivoli Manager for Domino methods.

Note

The *TME 10 Module for Domino User's Guide* states that you must create the <userid>.ini file manually. This is incorrect.

6.4 Configuring the Notes Client Desktop

After the distribution, the end user must configure the Notes client desktop. The procedure for configuration will vary, depending on what method was used to create the reference copy that was distributed.

If the reference image was unconfigured, the first time the Notes client is started, the end user must enter user-specific information (user name, server name, password) and then an initial desktop is created. If the reference image was configured and the end user is launching the NURadme.nsf database to configure his/her Notes desktop, the end user is initially prompted for the ID file location, which you can easily select from the file browser dialog. After the ID file is selected, the desktop opens with the NURadme.nsf (README First) database on it (Figure 167 on page 166).



Figure 167. Initial Client Desktop with Preconfigured Reference Image

When you open the README First database, your initial password, mail server, and Domain name are displayed. The database prompts you with the option to change your password, execute the predefined desktop configuration, and then to delete the README First database from the desktop.

NUReadme.NSF Limitations

With this current version of the NUReadme.nsf, user-specific information is not properly configured in the notes.ini file, location documents, access control lists, or on the client desktop. Check to see if a Tivoli Manager for Domino patch has been made available to address this problem.

On UNIX platforms, the user must add /opt/lotus/bin and \$HOME/notes4 to the PATH. The installation window is shown each time the Notes program does not find the notes.ini file in its PATH. The first time the Notes client is started, the data files for that specific user are created in its home directory. (A dialog window prompts for which data files should be installed.) The rest of the desktop configuration is the same as the configuration on the other platforms.

6.5 Upgrading the Notes Client

The Tivoli Manager for Domino provides functionality to upgrade Notes clients from an earlier client version (3.x or 4.x) to Version 4.6. This upgrade process is done using Tivoli Software Distribution file packages, and is very similar to the Notes client installation procedure, minus the installation configuration process with the NUReadme.nsf. The Configure DomainAlias Client Upgrade task creates the profile manager and file packages for the upgrade process.

To upgrade Notes clients, use the following steps:

1. Create a 4.6 reference copy using the regular Notes installation process.
2. Copy the installed files to a directory on a managed node.
3. Execute the Configure DomainAlias Client Upgrade task.

4. Define subscribers to the Upgrade DomainAlias profile manager.
5. Distribute the file package profile.
6. Start the Notes client to complete the configuration.

We used a Notes client 4.5 to 4.6 upgrade on the Windows NT platform in our example.

6.5.1 Building the Notes Reference Copy

To create the reference image, follow the regular installation process documented in “Creating an Unconfigured Reference Copy” on page 146. Use a new 4.6 installation (not an upgrade from an earlier version) as a reference image, and do not configure the client.

After the installation we copied the \NOTES directory and all its subdirectories into a directory on our managed node distribution machine. We chose to copy the files into C:\Notes_Upgrades\winNT\notes. Do *not* copy the notes.ini or desktop.dsk files onto the distribution machine, or delete them from the distribution machine if you created the reference copy directly on a managed node that will be acting as your distribution machine.

6.5.2 Configuring a DomainAlias Client Upgrade

After creating the reference image, configure the file packages by executing Configure DomainAlias Client Upgrade job. Note that you need to perform this job as many times as you have platforms. In the following example we configured a client upgrade for Windows NT. Launch the job by double-clicking on the **Configure IBMFI Client Upgrade** icon (Figure 168).

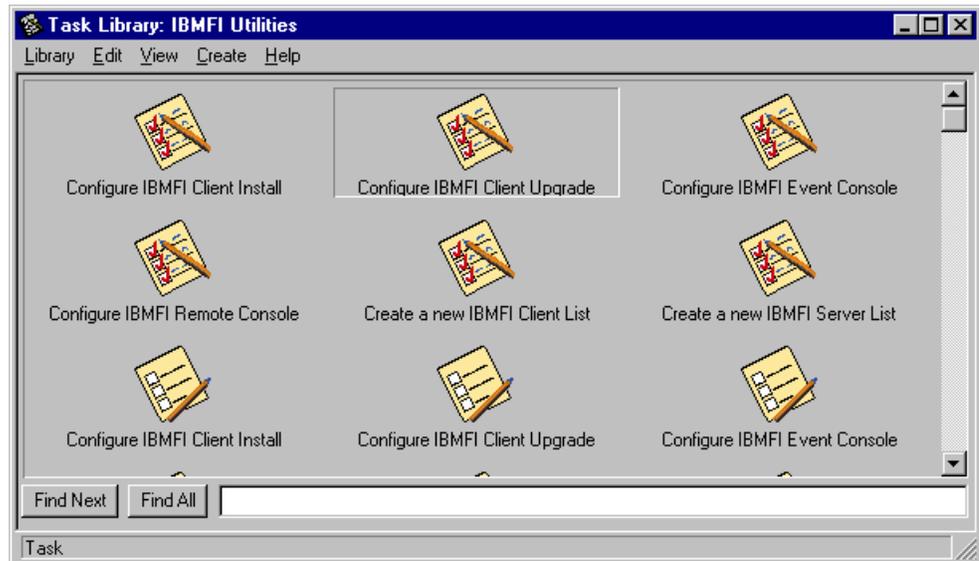


Figure 168. Configure Client Upgrade Job

Enter the proper values for the Configure IBMFI Client Upgrade job (Figure 169).

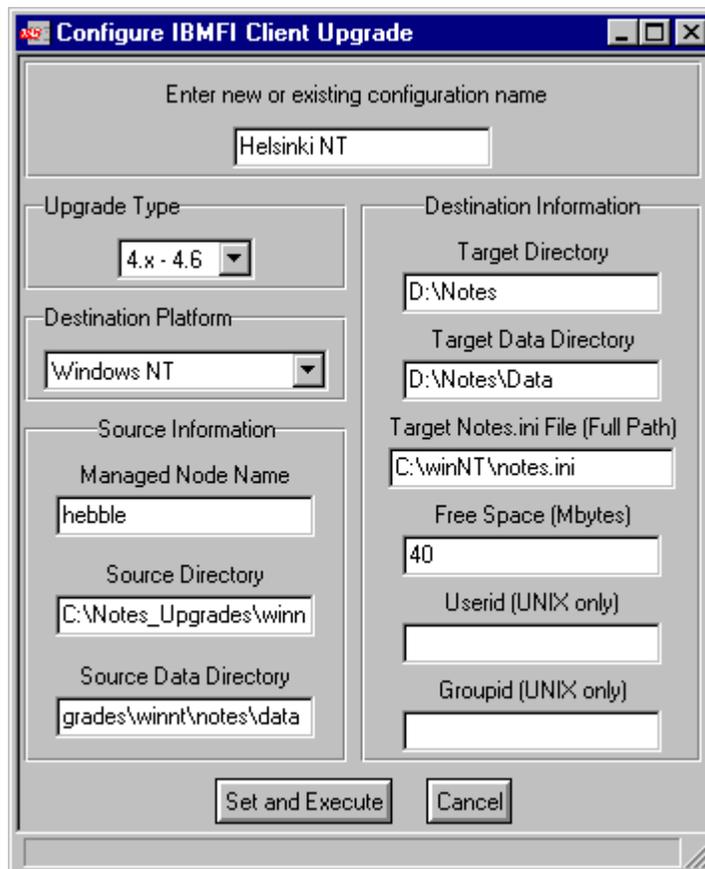


Figure 169. Configure IBMFI Client Upgrade

We used the following values for the fields:

Enter a new or existing configuration name

The configuration name enables the creation of additional Courier file packages with differing options and configurations. It should be a short name that identifies the organization, installation options, etc. In our example we specified Helsinki NT for the Windows NT platform.

The same note described in “Configuring a DomainAlias Client Install” on page 151 about the configuration name applies here as well.

Upgrade Type

Enter the type of upgrade here. We used 4.x - 4.6 since we were doing upgrades from 4.5 to 4.6.

Managed Node Name

Enter the name of the managed node you copied the Notes client code to that is acting as the distribution server. In our example hebble was used to store the client code for all of the platforms.

Source Directory

Enter the directory you copied the Notes client code to. In our example the directory was: C:\Notes_Upgrades\winNT\notes for Windows NT.

Source Data Directory

Enter the complete path to the Notes data directory. In our example the path was: C:\Notes_Upgrade\winNT\notes\data.

Target Directory

Enter the directory path for Notes. Default is C:\Notes. In our example we left it as C:\Notes.

Target Notes.ini file

Enter the notes.ini file location. In our example we entered c:\winnt\notes.ini.

Free Space (Mbytes)

Enter the number of megabytes required for the client installation. We specified 60 MB for our installation on Windows NT.

Userid (UNIX Only)

Enter the user ID that should own the Notes binaries. Usually the user ID is notes.

Groupid (UNIX Only)

Enter the group ID for the Notes binaries. Usually the group ID is notes.

After entering the values, click on **Set and Execute**. After the job is executed, we have a new profile manager, Upgrade IBMFI (Helsinki NT), in our IBMFI policy region (Figure 170).

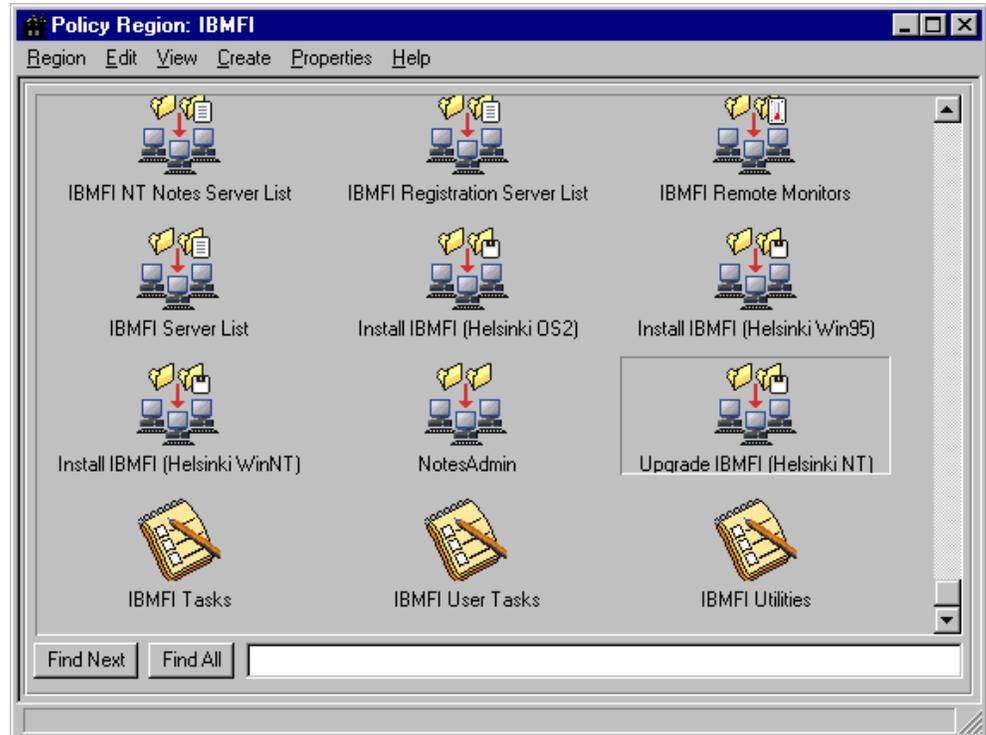


Figure 170. Upgrade IBMFI Helsinki NT

Within this profile manager, there are three profiles that are created:

- DomainAlias <platform> Client Nested Image (<configuration name>). In our example it is IBMFI NT Client Nested Image (Helsinki NT).
- DomainAlias <platform> Client Nested Image (Data - <configuration name>). In our example it is IBMFI NT Client Nested Image (Data - Helsinki NT).
- Upgrade DomainAlias <platform> Client (<configuration name>). In our example it is Upgrade IBMFI NT Client (Helsinki NT).

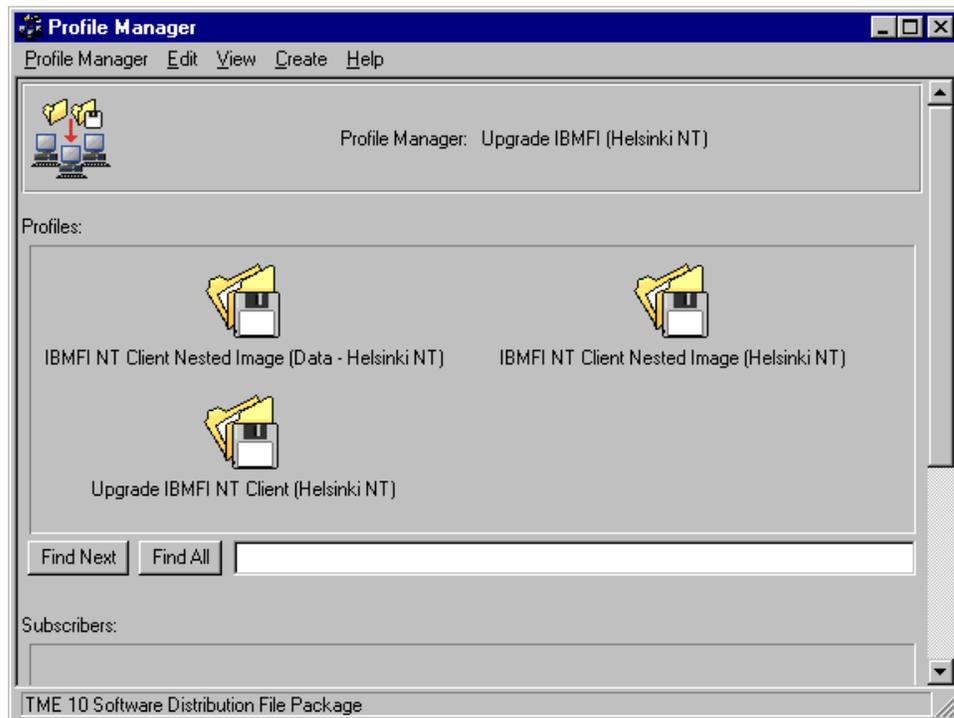


Figure 171. Upgrade IBMFI (Helsinki NT) File Packages

The Nested Image (<configuration name>) profile contains all the Notes client binaries and an after install program. The Nested Image (Data - <configuration name>) contains the Notes client data files. The Upgrade profile is the profile that should be distributed. It defines a before installation program, the after installation scripts' code to be distributed to the endpoints, and it calls the two Nested Image profiles.

The before installations program, PRECUPG.BAT, checks for adequate disk space and the existence of a notes.ini and notes.exe file on the endpoints.

The after installation program POSTCUPG.BAT passes arguments to and calls POSTUPG.BAT, which performs some final checking to verify that the installation was successful.

The upgrade installation scripts and file package definitions are located in the directory \$BINDIR/./generic_unix/TME/Notes/DomainAlias/fp.

6.5.3 Distributing the Notes Client Upgrade

Just as was the case with the Notes client installation, you must first subscribe endpoints (either single targets or client lists) in the profile manager. In our

example, we subscribed a PCManagedNode resource, boss173, to the ProfileManager (Figure 172 on page 171).

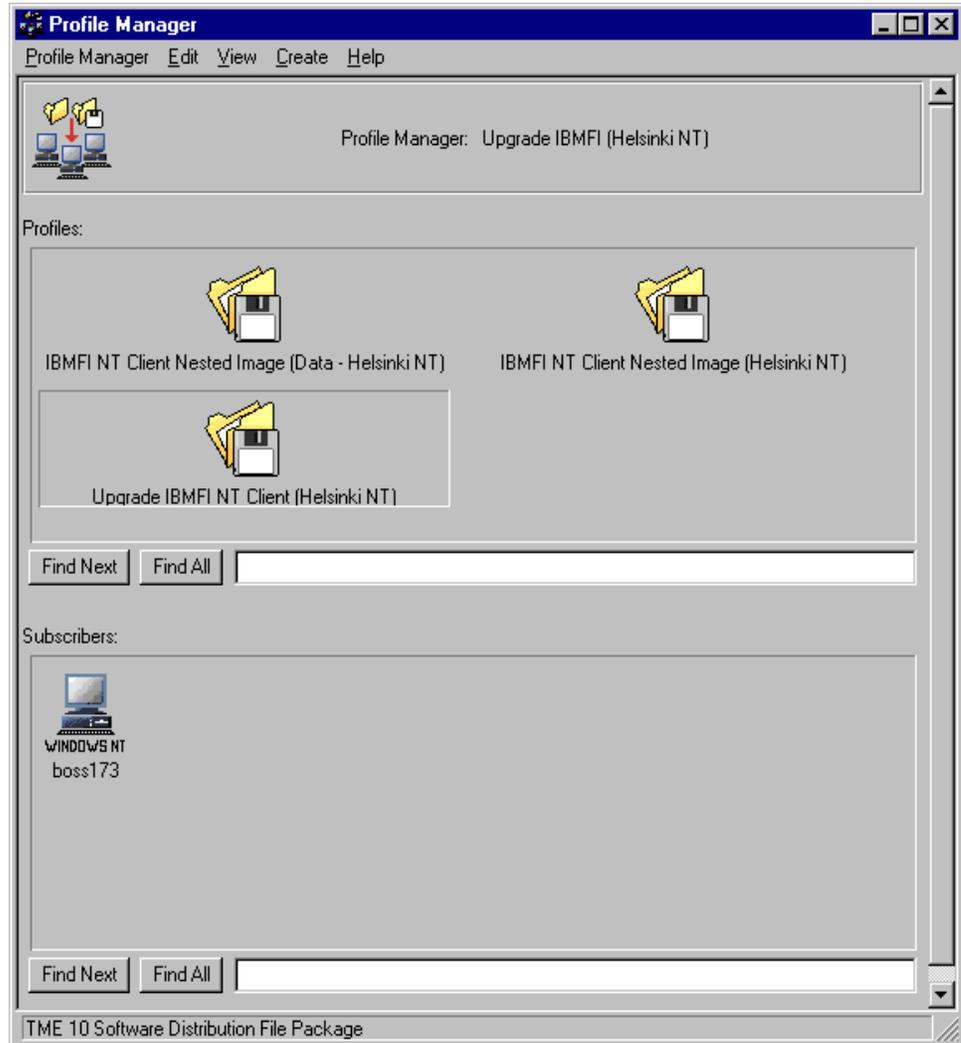


Figure 172. Client Upgrade Profiles and Subscribers

As we mentioned earlier, the upgrade distribution should be initiated by distributing the Upgrade profile to your subscribers. The Upgrade DomainAlias (<configuration name>) file package log file name is notes_upgrade.log and is located in \$BINDIR/./generic_unix/TME/Notes/DomainAlias/fp/<configuration name>. Refer to this file if you have any distribution errors.

Once the distribution of the upgrade is complete, the next time the Notes client is started by the end user, the upgrade will complete on the client. Update information can be viewed from the Notes client's status bar, and a pop-up message indicating that the update is complete will be displayed.

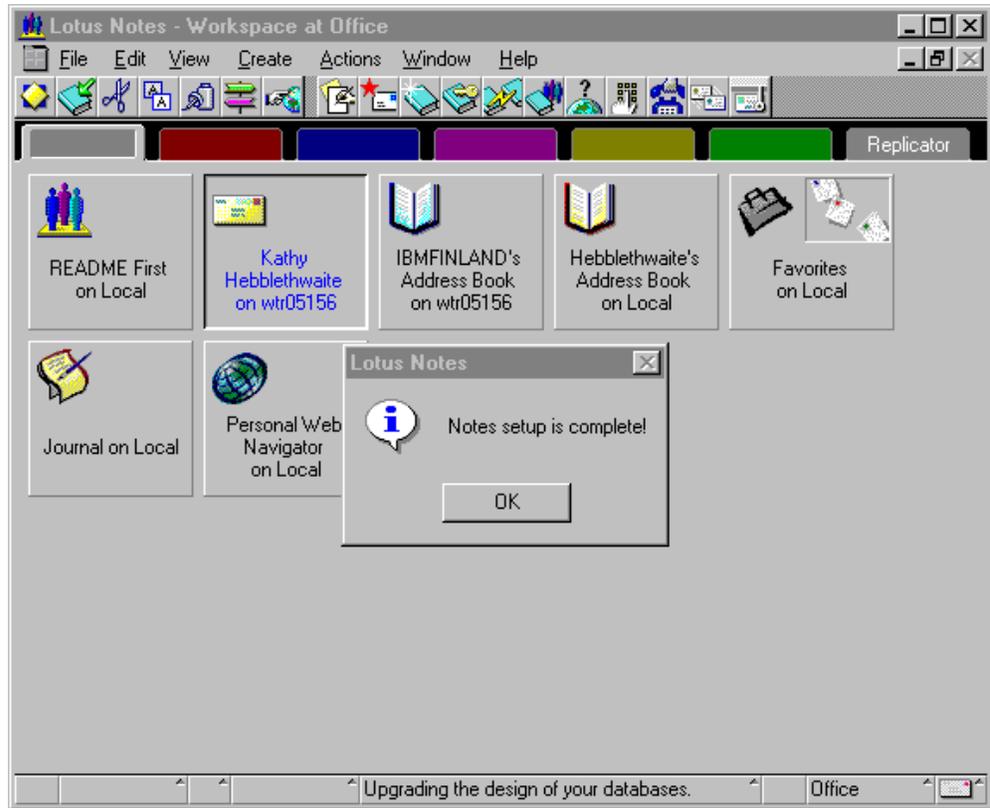


Figure 173. Notes Client Status Bar and Upgrade Complete Message

Chapter 7. Using GEM to Manage Your Domino Servers

The Tivoli GEM APM Extension shipped with the Tivoli Manager for Domino contains GEM instrumentation, which provides you with the capability of managing large Domino environments as a part of an electronic mail business system using Tivoli's Global Enterprise Manager (GEM). Using GEM's APM client/topology console, your Domino environment is displayed topologically, along with other business systems you are managing. In addition to this topological display, the Tivoli GEM APM Extension provides tasks and monitors to manage Domino servers from the APM client/topology console as well.

In this chapter, we focus on the installation and configuration of the Tivoli GEM APM Extension, and the management capabilities that it provides. Although we provide an overview of GEM in this chapter, we assume the reader is already familiar with and has already set up a GEM environment if they will be implementing this feature of the Tivoli Manager for Domino.

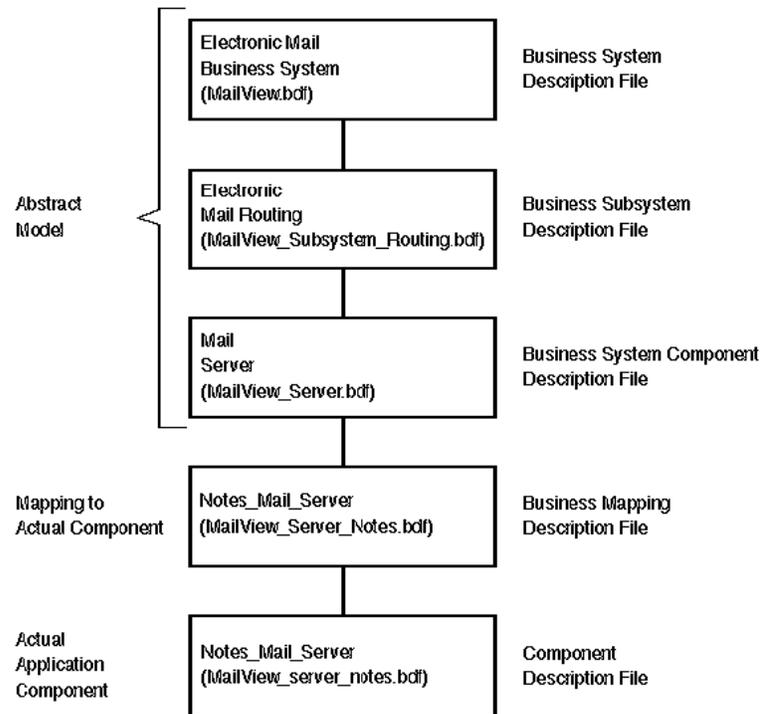
7.1 Overview of Tivoli GEM

A focus on managing at a business system level has evolved in today's I/T environment. A business system is a group of applications and their connections, which together perform a business function. Managing at this higher, business system level, allows an administrator to better understand the impact of a failing resource on a company's ability to perform a particular business function. GEM is Tivoli's business system management solution, and supports the management of both S/390 and distributed components of a business system in consolidated views.

7.1.1 Tivoli's Application Management Specification

GEM uses the Application Management Specification (AMS) to manage business systems. AMS is an open standard that defines a standard format, generically called description files, for describing software management information. These description files, together with monitor and task instrumentation, contain the necessary information needed by GEM, to manage an application or business system.

The AMS business system hierarchy of the Tivoli-supplied electronic mail business system shipped with the Tivoli Manager for Domino is shown in Figure 174 on page 174.



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Figure 174. Electronic Mail AMS Business System Hierarchy

Because the electronic mail business system was created using AMS, you have the capability of customizing the business system or portions thereof. See the *Tivoli Global Enterprise Manager Instrumentation Guide* for more information on creating business systems.

7.1.2 Tivoli GEM's Levels of Instrumentation

As it relates to GEM, instrumentation pertains to the monitors and tasks that provide information about the composition and status of a business system, as well as allow for administration of the business system. With GEM, Tivoli has introduced the term *levels of instrumentation*, which relates to the manageability of a business system. There are four levels of instrumentation. Each level, when instrumented, provides an increased level of manageability for the business system and is depicted in the following illustration:

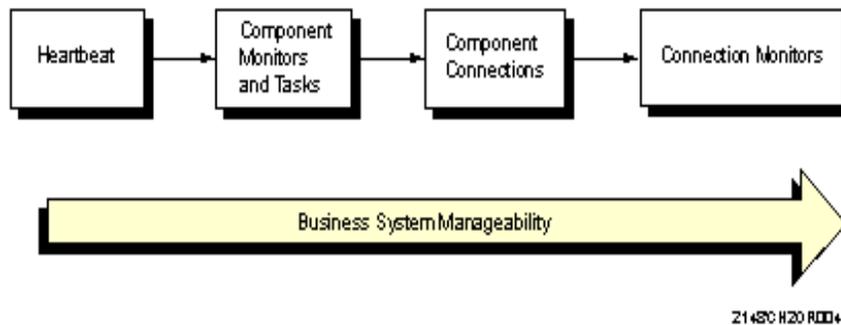


Figure 175. Four Levels of Instrumentation

A description of each of these levels of instrumentation is provided below.

- Heartbeat Monitor

This first level of instrumentation is the minimum requirement for GEM, which allows a component to be discovered and displayed by GEM. Once a component's heartbeat is received by the GEM server, the GEM server learns about the business system's structure through the information in the business system's hierarchical description files.

- Component Monitors and Tasks

The second level of instrumentation adds manageability to the discovered components through component monitors and operational tasks.

- Component Connections

The component connections, sometimes referred to as component relationships, provide the GEM user with information about how the components of a business system relate to each other. Defining a connection between two components signifies information is exchanged between them.

- Connection Monitors

Level four instrumentation, connection monitors, provide information pertaining to the data exchanged between two components.

The Domino server component of the Tivoli-supplied electronic mail business system shipped with the Tivoli Manager for Domino supports the first three levels of instrumentation.

7.1.3 Product History

Since its creation, there have been a number of releases of GEM, and the content of the releases has varied. To clear up any confusion, we have listed the GEM releases to date and briefly described the functional content of each.

- 12/96 - GEM 1.1 (2 Management Integration Services)

The objective of the Management Integration Services was to provide customers with the ability to integrate their distributed Tivoli environments with their S/390 systems management applications. The first two integration services shipped with this release were for job scheduling (OPC IP trackers for OPC) and storage (ADSM plus module).

- 3/97 - GEM 1.1 (2 Additional Management Integration Services)

This release of GEM provided two new integration services. The first service, Event/Automation Service, enabled event integration between Tivoli NetView V1R1 and Tivoli/Enterprise Console. The second integration service, User Administration service, enabled RACF profiles to be managed from Tivoli User Administration

- 9/97 - GEM 1.1 (APM plus 3 Management Integration Services)

This release provided you with the Topology Service which allowed management of Tivoli distributed environments from Tivoli NetView V1R1 using NGMF and RODM. The Command Service allowed a Tivoli NetView for OS/390 operator to issue commands against distributed Tivoli resources. Tivoli NetView for OS/390 commands could also be issued from the distributed Tivoli environment. The Problem Service consisted of an Info Management API that allowed other applications, for example helpdesk products, to store, search and retrieve problem records from Info Management. In this shipment Tivoli also shipped the first release of Application Policy Manager to manage business systems.

- 2/98 - GEM 2.0 (No Management Integration Services)

This release of GEM was primarily provided for customers who didn't require the integration of S/390 and distributed management applications, but wanted to create and manage business systems using APM. APM in this release was basically at the same functional level as APM 1.1.

- 5/98 - GEM 2.1

This level of GEM added the business system life cycle concept, enabling you to plan, model, and control business systems. The Plan function allows you to graphically design your business system and creates the resulting AMS business description files. The Model function allows you to display the content of the BDF and CDF files. The Control function is designed for the actual management of the business system you have created.

We installed a GEM 2.1 environment and use this version in our examples. Tivoli Manager for Domino Version 1.5 was generally available prior to Tivoli GEM 2.1; therefore this version of GEM was not tested with the Tivoli Manager for Domino prior to it becoming available. Since it is the latest version of GEM, we thought it would be beneficial to use this version and document any differences between the versions that are specific to incorporating this electronic mail business system into GEM.

7.2 Tivoli GEM APM Extension Installation and Configuration

Before you begin to use the GEM instrumentation for the electronic mail business system and the Domino server component, there are a few installation and configuration steps that you must perform. A roadmap for setting up the GEM instrumentation for Domino is outlined below.

- Verify prerequisite software
- Verify Domino connection documents
- Install Tivoli GEM APM Extension
- Configure the event server

- Activate the electronic mail business system
- Enable heartbeat monitoring
- Assign the appropriate authorization roles for administrators
- Start the GEM topology console (APM client)

The following sections describe these installation and configuration steps more closely. We've also noted a few pieces of information that we discovered while working with the GEM and Tivoli GEM APM Extension installation in our environment that you may want to be aware of.

7.2.1 Verifying Prerequisite Software

When installing the Tivoli GEM APM Extension, the installation procedure requires that you have GEM installed and configured. The installation is performed using Tivoli's product installation tools either from the command line (winstall) or using the Tivoli Desktop: Desktop -> Install -> Install Product... The GEM products needed for the Tivoli GEM APM Extension are:

- Tivoli GEM Topology Server 2.1 (or GEM APM Server 1.1 or 2.0)
- Tivoli GEM Event Enablement 2.1 (or GEM Event Automation Services 1.1 or GEM Event Enablement 2.0)
- Tivoli GEM Topology Console 2.1 (or GEM APM Client 1.1 or 2.0)

Note that the names above with GEM 2.1 have changed, and that APM is no longer referenced. Throughout the rest of this chapter, we use the GEM 2.1 names, since it is the level that we have installed.

For installing these products, refer to the *Tivoli Global Enterprise Manager Installation Guide Version 2.1*.

After the GEM installation, we needed to run one configuration script, `ihsttec.sh`, which imports the GEM event BAROC classes and rule set (`interapp.baroc` and `interapp.rls`) into a new event server rule base. `Interapp.baroc` defines three new event classes: `APM_HEARTBEAT`, `APM_THRESHOLD`, and `APM_CONNECTION_CHANGE` to the event server. `Interapp.rls` processes the GEM events and forwards the information to the GEM topology server.

`Ihsttec.sh` is shipped with Tivoli GEM as a sample script that can be customized for your specific environment needs. For example, as shipped, the default rule base will be cloned, and the new rule base name that is created is `GemEvent`. This shell script also creates a GEM topology server configuration file, `ihsttec.cfg`, which defines the topology server's host name to the Tivoli event server, allowing the events to be forwarded to and displayed from GEM. `Ihsttec.sh` can be found in `$BINDIR/TDS/EventService` in GEM 2.1, and in `$BINDIR/GEM/EventService` in earlier versions.

We also need a Java environment on the machine running the GEM topology console. We tested Java Versions 1.1.4 and 1.1.6 in AIX and 1.1.6 in Windows NT.

Tivoli Enterprise Console (TEC) is a pre-req for GEM, as GEM uses TEC as the vehicle for collecting events from managed resources and forwarding them to the

GEM topology server. In our environment we are using TEC 3.1 and AIX Sybase SQL Server 1.1 to store the TEC database.

Tivoli Distributed Monitoring is also a pre-requisite for GEM. It is used to schedule heartbeat monitoring and connection discovery. We are using Tivoli Distributed Monitoring 3.5.

Notice about TCP/IP Ports

Be aware that in this environment, there are a number of TCP/IP ports being allocated for communications. The Tivoli Manager for Domino uses port 3000 by default (see "Configuring Tivoli for a Notes Domain Server" on page 29). The default ports for GEM are 4000, 4010 and 4020. Sybase also uses TCP/IP ports for communications. You can see which ports Sybase is using in the \$SYBASE/interfaces file.

In our environment, Sybase was configured to use port 3000. We let the Tivoli Manager for Domino default to use port 3000 to communicate with the Domino servers, not realizing that Sybase was already using that port. Since Sybase, our event server, and our TMR server were on the same machine (klhaix), we had a port conflict that caused a large number of various error messages, such as TEC communication problems and connection reset by peer messages when executing Domino server tasks. We resolved this problem by changing the Sybase port number using the \$SYBASE/install/sybinit program.

7.2.2 Verifying Domino Connection Documents

The GEM topology server discovers and displays connections between Domino servers on the GEM topology console by reading the connection documents defined in a Domino server's copy of the domain's Public Address Book. Although connection documents are not required to route mail between two Domino servers in the same Domino named network (two servers in the same Domino domain that share the same LAN protocol and physically connect on the same LAN/WAN), the connection documents are what the GEM server uses to determine connections between Domino servers. If you would like to display connections on your GEM topology console, you should ensure that you have the appropriate connection documents defined. In our environment, we had the following connection documents defined for wtr05156/SRV/IBMF1.

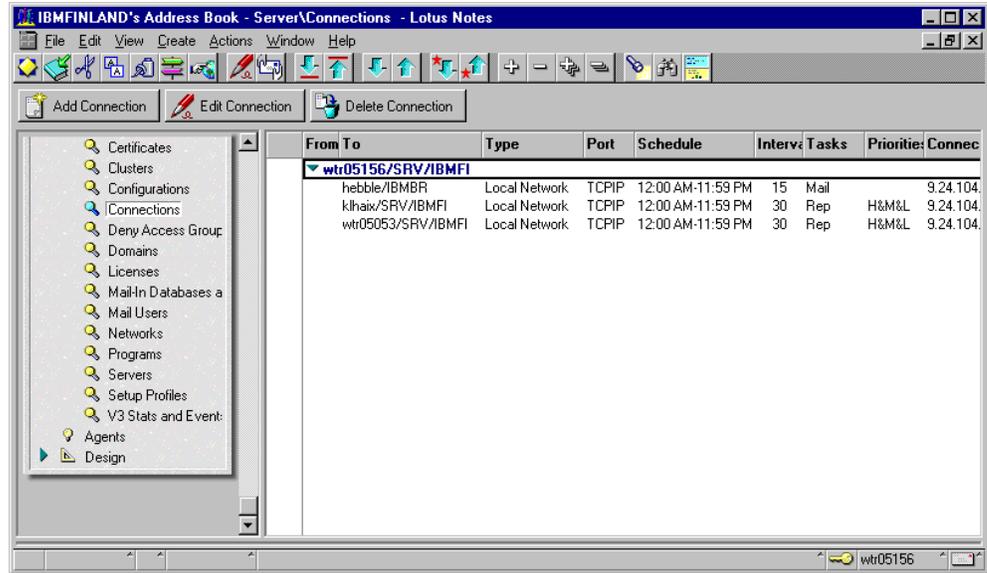


Figure 176. Public Address Book Connection Documents

7.2.3 Installing the Tivoli GEM APM Extension

The installation of the Tivoli GEM APM Extension must be installed after the base installation of the Tivoli Manager for Domino. It needs to be installed on all TMR servers and all ManagedNodes (Domino servers) that you wish to manage with GEM.

The installation is just like any other Tivoli product installation. When installing from the desktop, select **Desktop -> Install -> Install Product....** Select the ManagedNode and directory path where the Tivoli GEM APM Extension resides and select **Set Media & Close** to activate the path selection and return to the Installation Product dialog (Figure 177 on page 180).

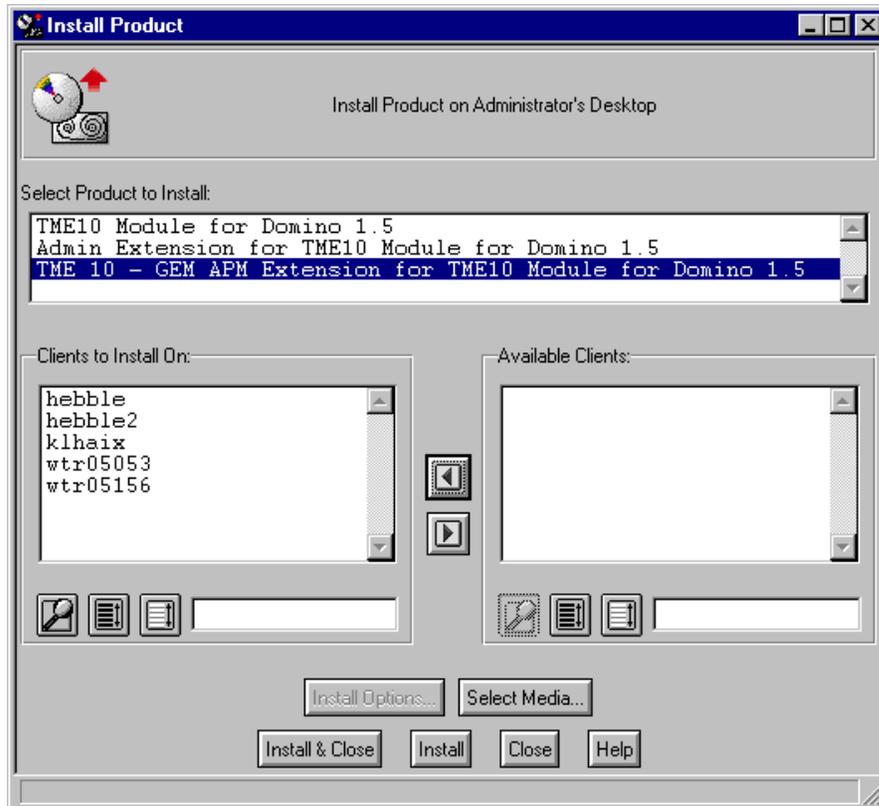


Figure 177. Install Product

Select the **TME 10 - GEM APM Extension for TME10 Module for Domino 1.5** product to install and also move your TMR server and all managed Domino servers in the Clients to Install On: list box. Select **Install** to start the installation.

After initiating the install, an inspection of all the target machines is performed and the actions that will be taken on those machines if you continue the installation are listed. Click **Continue Install** to complete the installation procedure.

The installation process creates two visible items on our Tivoli Desktop in the Module for Notes policy region. It creates one profile manager, APM_Notes_Profile_Manager, and one task library, APM_Lotus_Notes_Mail_Server_4.x, as shown in Figure 178 on page 181.

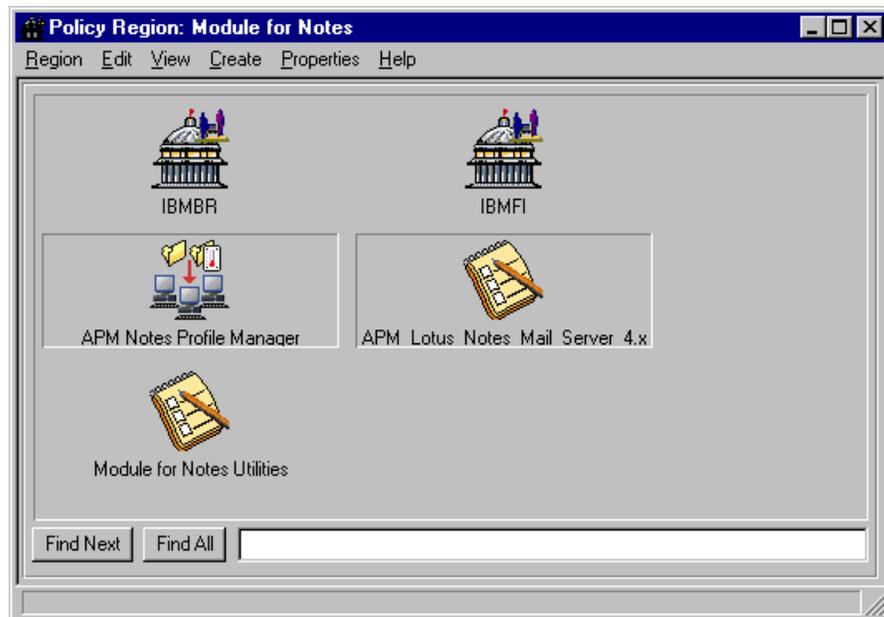


Figure 178. Module for Notes Policy Region

The profile manager, `APM_Notes_Profile_Manager`, contains a Sentry profile, `Lotus;Notes_Mail_Server;4.x`, which has GEM-specific monitors defined to it for Domino server and connection discovery and status polling. These GEM-specific monitors are a part of an `APMMonitors` monitoring collection, which is also created by the Tivoli GEM APM Extension installation. See “Enabling Heartbeat Monitoring” on page 185 for more information about this profile manager and the GEM-specific monitors.

The tasks in the task library `APM_Lotus_Notes_Mail_Server_4.x`, although placed on the Tivoli Desktop, are created for GEM and meant to be executed from the GEM topology console or by the GEM server. The tasks in this task library and their function are listed below.

Table 13. Tivoli GEM Tasks

Task Name	Task Function
Define_Domain_Roles_in_Remote_TMR	Defines TMR roles for Notes Domain in an interconnected TMR to an administrator. This task must be executed from the Tivoli Desktop.
Start_Notes_Server	Domino Server GEM Component Task
Stop_Notes_Server	Domino Server GEM Component Task
Set_Notes_Pulse	Domino Server GEM Component Task
Query_Notes_Server_State	Domino Server GEM Component Task
Start_Notes_Router	Domino Server GEM Component Task
Stop_Notes_Router	Domino Server GEM Component Task
Compact_Mailbox	Domino Server GEM Component Task
Show_Statistics	Domino Server GEM Component Task

Task Name	Task Function
Notes_Remote_Console_Command	Domino Server Component Task
Broadcast_Message	Domino Server Component Task
Monitor_Notes_Server_Values	GEM Component Monitor Task
Set_Notes_Server_Thresholds	GEM Component Monitor Task
Set_Notes_Polling_Interval	GEM Component Monitor Task
Query_Notes_Monitor_Level	GEM Component Monitor Task
Discover_Notes_Server_Connections	GEM Supporting Task
Query_Notes_Server_Contact_Info	GEM Supporting Task
Query_Notes_Threshold_Level	GEM Supporting Task
Query_Notes_Server_Contact_Info	GEM Supporting Task
Query_Mail_Sent	GEM Relationship Monitor Task (*)
Query_Notes_Relationship_Level	GEM Relationship Monitor Task (*)
* Relationship monitoring, and therefore the GEM relationship monitor tasks listed above, are not supported, although supplied, with the GEM instrumentation for this release of the Tivoli Manager for Domino.	

Although it is intended for the Domino server component tasks to be executed from the GEM topology console, they can be executed from the Tivoli Desktop as well. They must be executed against the GEM server (klhaix in our case), and one of the input parameters for the task is a sub-origin, which is the NotesServer object name. You do not need to supply the sub-origin when executing these tasks from the GEM topology console. The other tasks in this task library can not be executed directly from the Tivoli Desktop. The GEM supporting tasks are executed by the GEM server, and can not be executed by an administrator from the Tivoli Desktop or the GEM topology console. See “Working with GEM” on page 192 for more information on executing tasks from the GEM topology console.

7.2.4 Configuring the Event Server

After you have installed the Tivoli GEM APM Extension, you must configure your event server using the Configure Event Server task in the Module for Notes Utilities task library to generate a rule base that includes:

- The base Tivoli Manager for Domino BAROC classes and rule sets (notes_tecad.baroc, notes_server_monitor.baroc, notes_tecad.rls, notes_server_monitor.rls, and notes_default.rls)

See “Tivoli Manager for Domino Rule Base” on page 75 and Appendix A, “Tivoli Manager for Domino Rule Base” on page 201 for more details on the base Tivoli Manager for Domino rule base.

- The base Tivoli GEM BAROC class and rule set (interapp.baroc and interapp.rls)

See Appendix B, “GEM and GEM-APM Extension Rule Base Files” on page 221 for a listing of the actual interapp.baroc and interapp.rls files.

- The Tivoli GEM APM Extension rule set (apmnotes.rls)

The apmnotes.rls rule set converts the GEM-supported Notes server monitor events to APM_THRESHOLD events. See 7.3.2, “Monitors” on page 195 for a description of the supported Notes server monitor events and Appendix B, “GEM and GEM-APM Extension Rule Base Files” on page 221 for a listing of the actual apmnotes.rls.

Double-click on the **Configure EventServer for Notes** job from the Module for Notes Utilities task library.

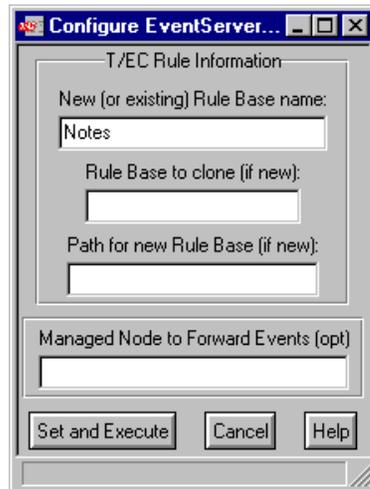


Figure 179. Configure EventServer for Notes Dialog

For a complete description of the fields, see “Configuring the Event Server” on page 21. You will want to ensure that the rule base that you are adding to, or the rule base that you are cloning if you are choosing to create a new rule base, which you are specifying here, already includes the Tivoli GEM BAROC class and rule set. Since we already had the Tivoli GEM environment installed and configured prior to installing and configuring the base Tivoli Manager for Domino, our Notes rule base that we created in the aforementioned section included the Tivoli GEM BAROC class and rule set, in addition to the base Tivoli Manager for Domino BAROC classes and rule sets.

We wish to keep our existing rule base name of Notes, so we only specify `Notes` in the **New (or existing) Rule Base name:** field, leave the other fields blank, and click on **Set and Execute**. While running, this task will check to see if the Tivoli GEM APM Extension has been installed. If it has, it will add the apmnotes.rls rule set to the specified rule base, as well as the base Tivoli Manager for Domino BAROC classes and rule sets if they have not already been imported.

7.2.5 Activating the Electronic Mail Business System

The Tivoli GEM topology server bases its business system views on AMS description files: BDF and CDF files. GEM 2.1, as well as previous versions of GEM/APM, ships description files for the electronic mail business system with the Domino server as a component of that business system. The Tivoli Manager for Domino also ships these description files. In GEM Version 2.1, the directory where the files are installed on the topology server is

`$BINDIR/TDS/server/db/default/appdefs`. In older versions of GEM, the files are stored on the server in `$BINDIR/GEM/Apmserver/db/default/appdefs`. A business system's description files must reside in this directory in order for it to be discovered and displayed with the GEM topology console. The files shipped with the Tivoli Manager for Domino are stored on the TMR server in `$BINDIR/../generic_unix/TME/Notes/APM/appdefs`.

We compared the two sets of description files shipped with GEM 2.1 and Tivoli Manager for Domino, and the set shipped with GEM 2.1 was slightly more complete. With the Tivoli Manager for Domino set, some of the operational tasks defined in the Notes server CDF were missing a help file definition. Aside from that, we saw no functional differences. As a result, we decided to use the description files shipped with GEM.

If you were going to use the description files shipped with the Tivoli Manager for Domino, you must copy these description files from the directory on the TMR server where they were installed to the appropriate directory on the GEM topology server. In our environment, our TMR server and GEM topology server are on the same system, so we would have issued the following command:

```
root@klhaix:/ #cp $BINDIR/../generic_unix/TME/Notes/APM/appdefs/* \  
> $BINDIR/TDS/server/db/default/appdefs  
root@klhaix:/ #
```

The GEM topology server must be restarted in order to pick up new description files that have been added to this directory. With GEM 2.1, we issued the following commands:

```
root@klhaix:/ # $BINDIR/TDS/server/bin/tserver stop  
root@klhaix:/ # $BINDIR/TDS/server/bin/tserverd.sh  
root@klhaix:/ #
```

If you are replacing or updating (as opposed to adding new) description files in the GEM topology server's `default/appdefs` directory, there are additional steps that you must take in order for the topology server to re-read these description files. Each time the topology server is restarted, it looks at the description files that are stored in this `default/appdefs` directory. It builds database files that store the business system information from the description files and are used to build the business systems' structure. The directory where these database files are stored in Tivoli GEM 2.1 is `$BINDIR/TDS/server/db/current/datab`. A backup copy of this information is also stored in `$BINDIR/TDS/server/db/backup/datab` when the topology server is stopped. In previous versions of GEM, the database files are stored in `$BINDIR/GEM/ApmServer/db/datab/datab` and the backups in `$BINDIR/GEM/ApmServer/db/backup/backup`.

After the GEM topology server has built these database files, it will only regenerate these files if there are new description files for a business system. If you are replacing or updating description files belonging to a business system the topology server already knows about, it will not reread them and pick up the new information they contain. In order to get these description files re-read, you must delete the database files in both the current and backup `datab` directories and

then restart the server. The operational problem with this is that you are starting with fresh business system views once more, so any customization that you have done with the currently defined business systems is lost.

7.2.6 Enabling Heartbeat Monitoring

The next step in our configuration process is to enable heartbeat monitoring so that the Domino servers can be discovered by GEM. As we mentioned earlier in “Verifying Domino Connection Documents” on page 178, the heartbeat monitor is predefined to the Lotus;Notes_Mail_Server;4.x Sentry profile in the APM_Notes_Profile_Manager.

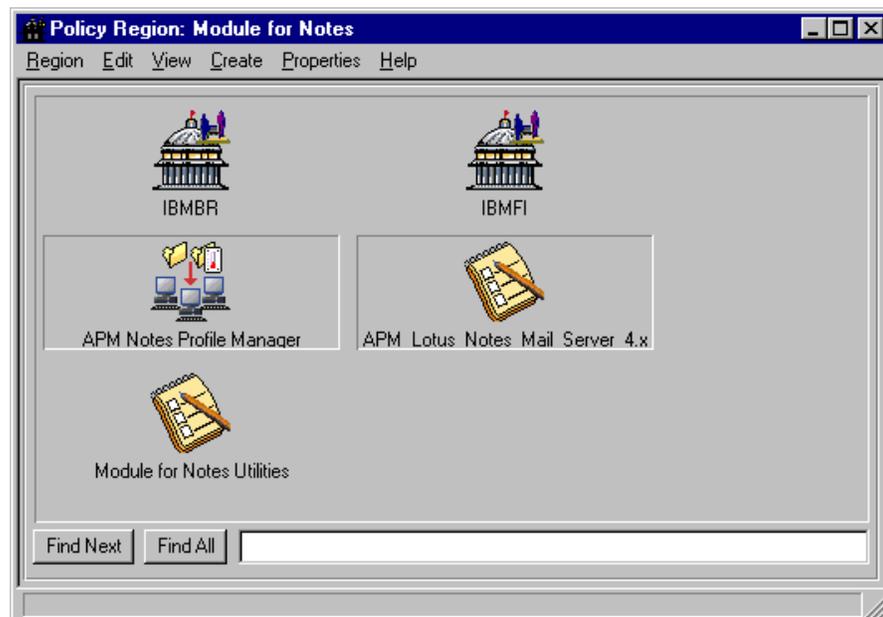


Figure 180. Module for Notes Policy Region

We opened the profile manager (Figure 181) and set the subscribers for the profile manager. Be sure to subscribe the ManagedNode objects and not the NotesServer objects to this profile (Figure 182).

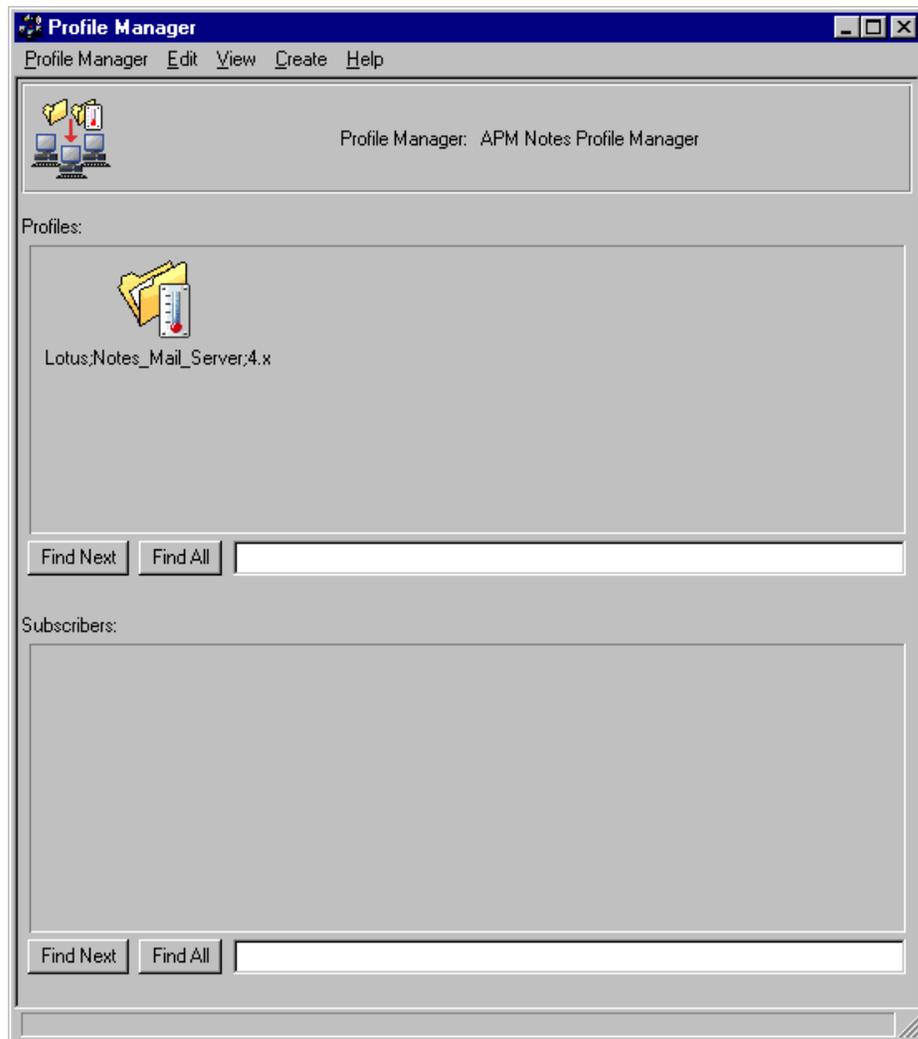


Figure 181. Profile Manager

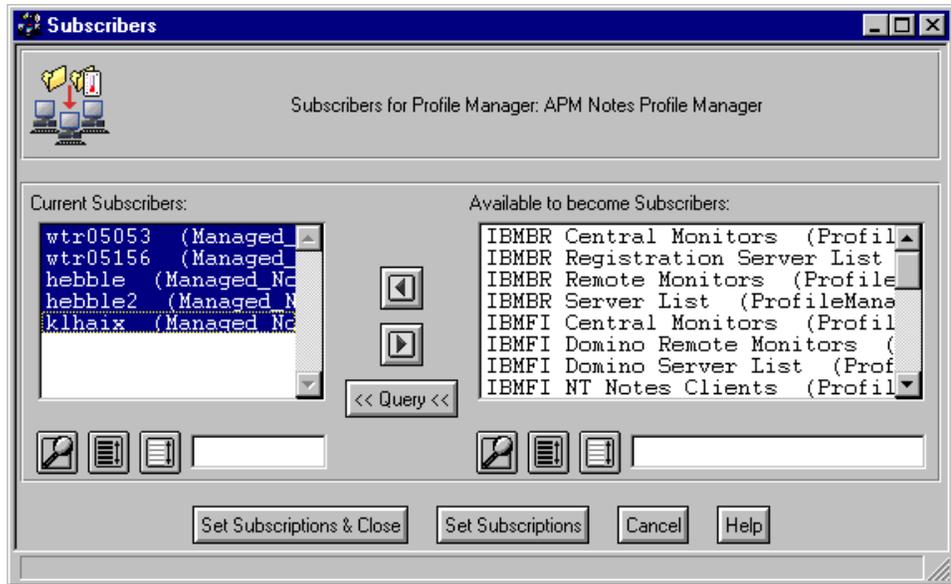


Figure 182. Setting Subscribers

When opening the Sentry profile Lotus;Notes_Mail_Server;4.x in the profile manager, there are three monitors configured by default: the APM HeartBeat Monitor, the APM Query Connection Change Monitor, and the APM Routing Relationship Monitor (see Figure 183), all of which belong to the APMMonitors monitoring collection. Notice that these monitors do not contain any thresholds or actions. Tivoli Distributed Monitoring is only used for polling purposes for these monitors. The monitor probe itself will query each subscriber locally and send the appropriate events to the event server. The only adjustable attribute with these monitors is the polling interval.

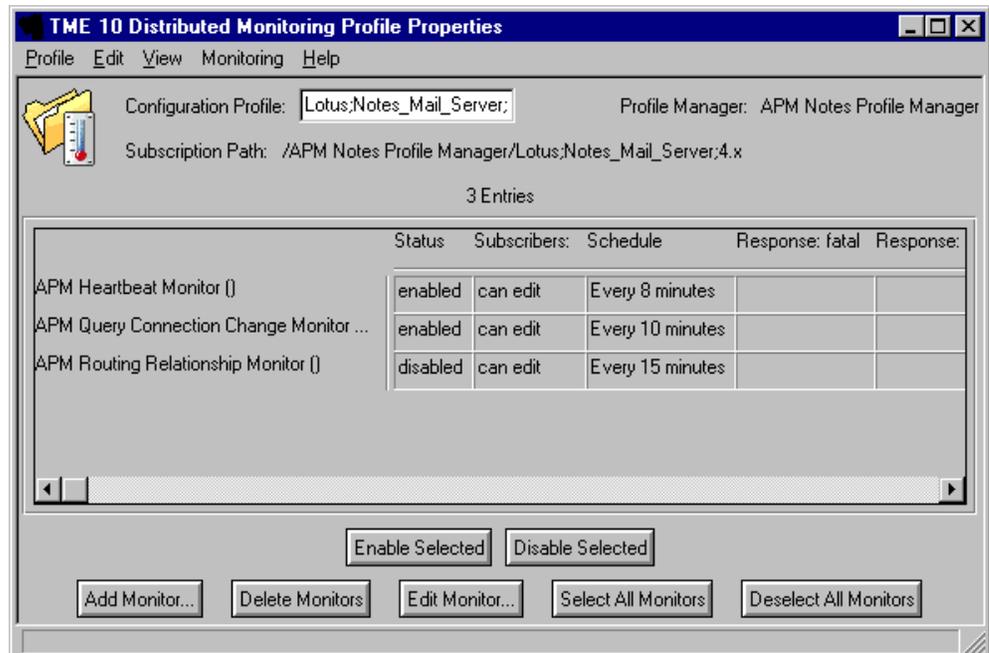


Figure 183. Lotus;Notes_Mail_Server;4.x Profile Properties

Attention

Three monitors are configured by default in Lotus;Notes_Mail_Server;4.x. The first two, APM Heartbeat Monitor and APM Query Connection Change Monitor, are enabled and the third, APM Routing Relationship Monitor, is disabled. Do *not* enable this last monitor, as it does not work (see *TME 10 Module for Domino Release Notes*). If you enable this monitor and distribute it, you will encounter a number of problems on the Domino server managed nodes it was distributed to, including process errors and processes not exiting properly that will exhaust your Domino server machines' virtual memory. We recommend that you delete the monitor from this profile altogether, so that it does not get enabled and distributed by an administrator who is not aware of the consequences.

To activate the discovery process by enabling heartbeat monitoring, you must distribute the profile to the subscribers. You can distribute the profile using your favorite method. We used the Profile Manager's Profile Manager -> Distribute... menu item (Figure 184).



Figure 184. Distributing Lotus:Notes_Mail_Server;4.x Profile

7.2.7 Assigning the Authorization Roles for Administrators

In order to operate your Domino environment through GEM, you must assign the proper roles for the administrators. The Tivoli GEM APM Extension adds two resource roles to your TMR:

- APM_Mailview_super
- APM_Mailview_admin

These roles allow a GEM administrator to manage Domino servers. The GEM administrator should also have super authority to execute tasks from the GEM topology console, as well as the root login for UNIX and administrator login for NT defined to ensure correct functioning of the GEM monitors.

7.2.8 Starting the GEM Topology Console

In order to start the GEM topology console, you need Java installed on the machine that will be running the topology console. We used managed node

wtr05156 for running the topology console in our environment. Before you start the GEM console, check its properties (Figure 185).

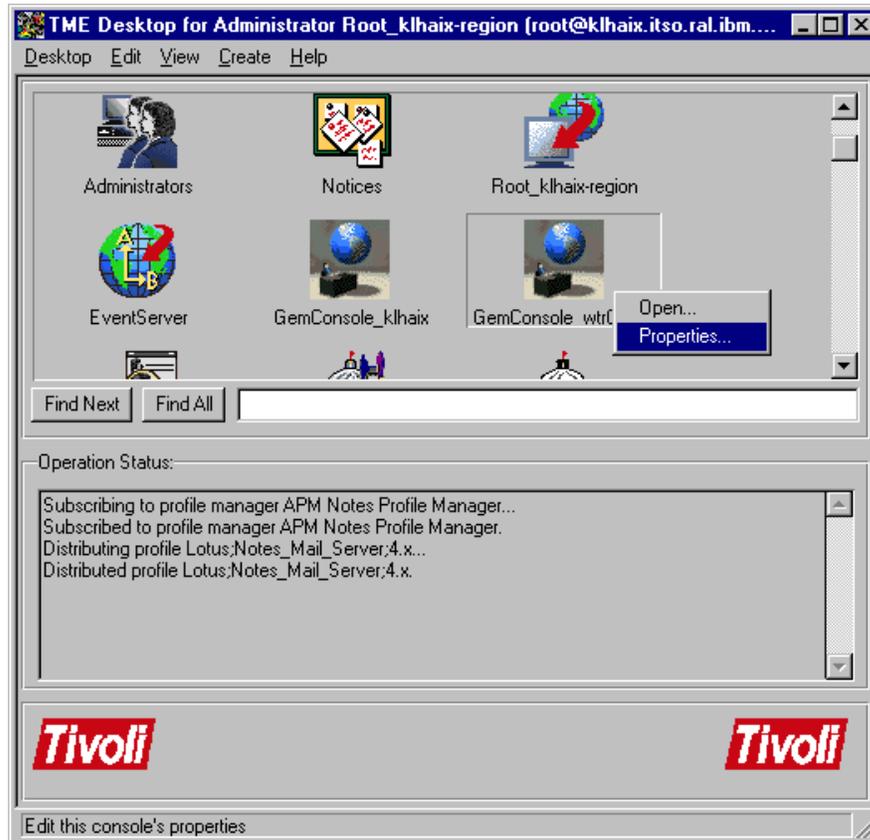


Figure 185. GEM Console Properties

Make sure the Java PATH field points to your Java executables and the Java CLASSPATH field points to your Java classes.zip file (Figure 186).

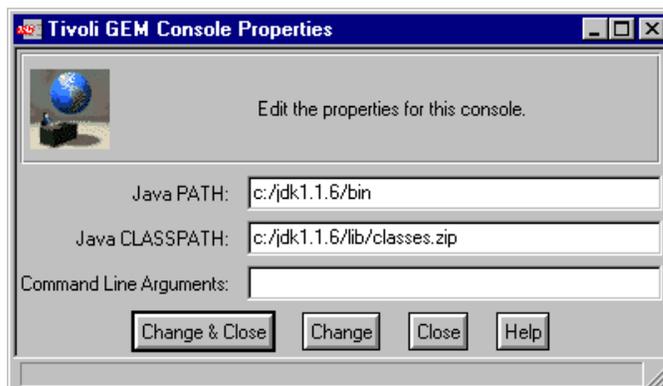


Figure 186. Modifying GEM Console Properties

After you have verified that the Java PATH and CLASSPATH variables are set correctly, you can start the GEM topology console by simply double-clicking on it.

Notes

In order to start the GEM topology console, the user ID and password you use must be defined on the machine running the GEM topology server and assigned to the proper user groups. Refer to the *GEM Installation Guide* for more details.

If your GEM topology console and GEM topology server are on the same UNIX system, you must invoke the `xhost +` command prior to starting the GEM topology console. Running `xhost` will allow the GEM server to accept login requests from a GEM console on the same system..

After double-clicking on the icon, you'll get prompted for the GEM administrator's user name, password, and GEM topology server host name (Figure 187).

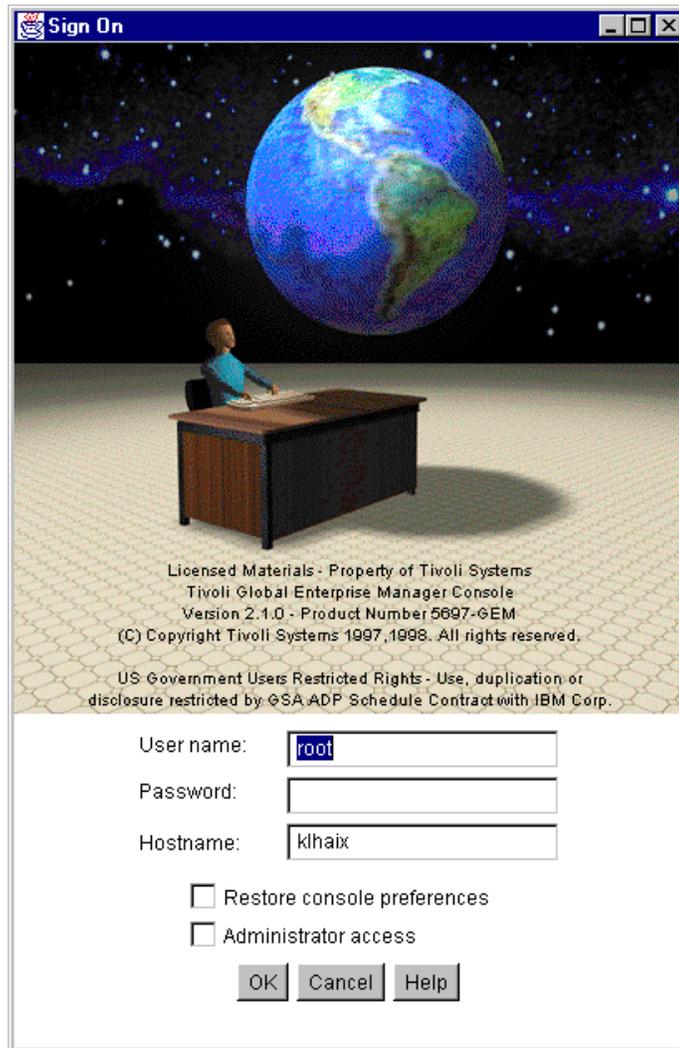


Figure 187. Starting GEM Topology Console

After entering the User Name, Password and Hostname and clicking on **OK**, the GEM topology console starts (Figure 188).

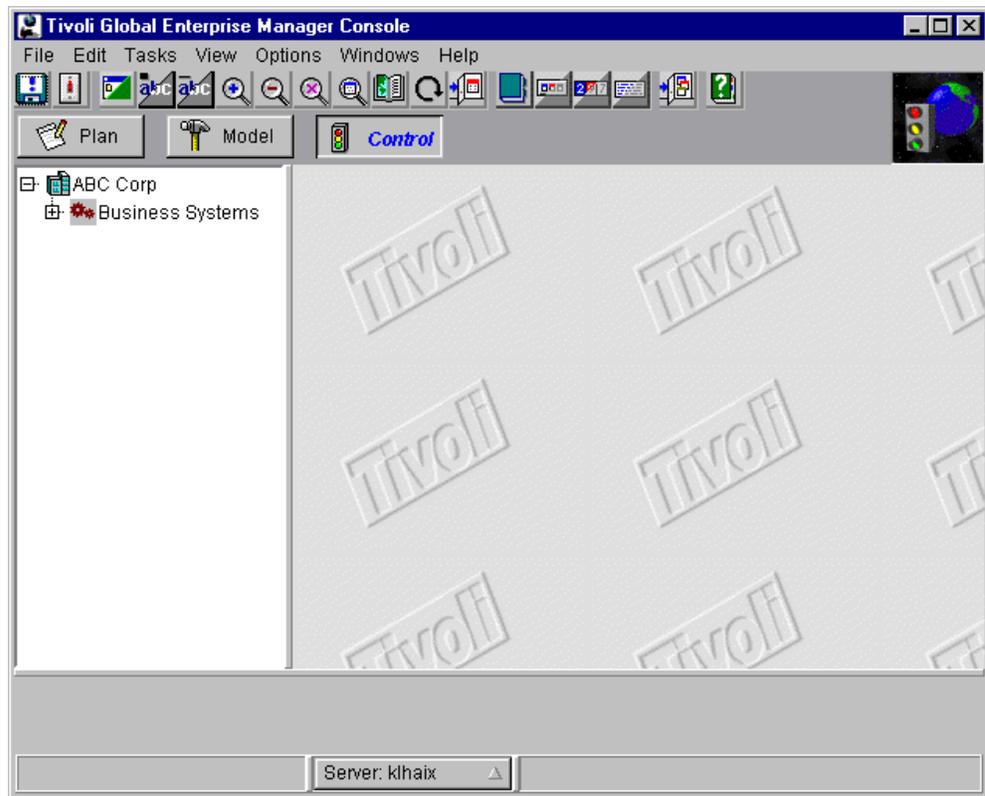


Figure 188. GEM Console

7.3 Working with GEM

If you have successfully completed the steps detailed in “Tivoli GEM APM Extension Installation and Configuration” on page 176, the Domino servers will be discovered via the heartbeat monitor and displayed on the GEM console as they are discovered. The GEM console will show all the Domino servers and logical connections between the servers. If you have Domino servers that are missing, ensure that you distributed the heartbeat monitor to that Domino server’s ManagedNode resource, and that the Domino server is running. If you have logical connections that are missing, ensure that the domain’s Public Address Book has a connection document in it for the two Domino server’s that should be displaying a connection.

In our environment, we managed to discover all of our Domino servers without any problems. However, when discovering connections, all inter-domain connections were discovered and displayed, but the intra-domain connection between the two Domino servers wtr05106/SRV/IBMFI and hebble/IBMBR were not being displayed on the GEM console. We managed to solve the missing connection by adding a server document for IBMBRAZIL’s hebble/IBMBR, in addition to its connection document, in IBMFINLAND’s Public Address Book (Figure 189 on page 193).

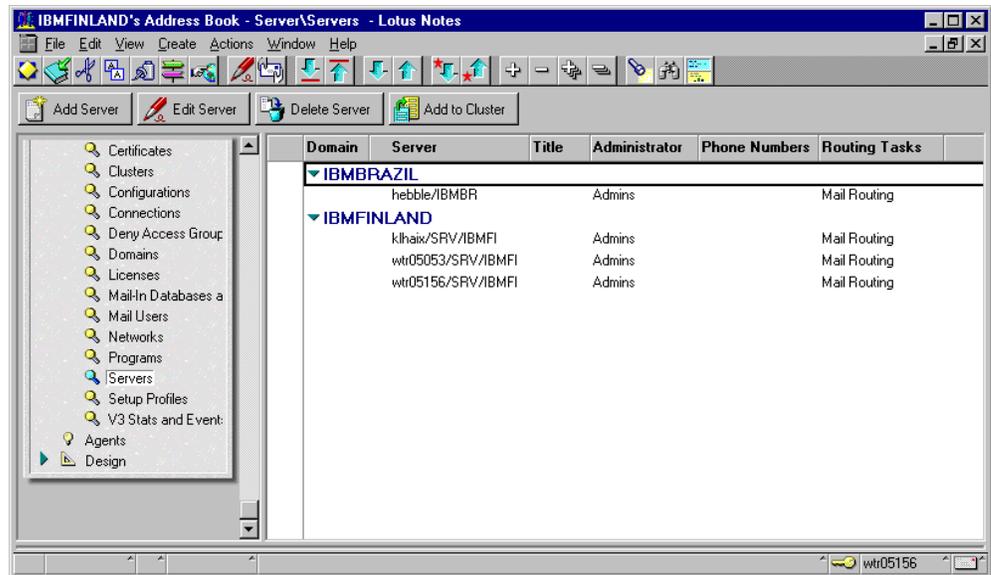


Figure 189. Server Documents in Public Address Book

After all of our Domino server's and connections were discovered, our GEM console had the following view (Figure 190):

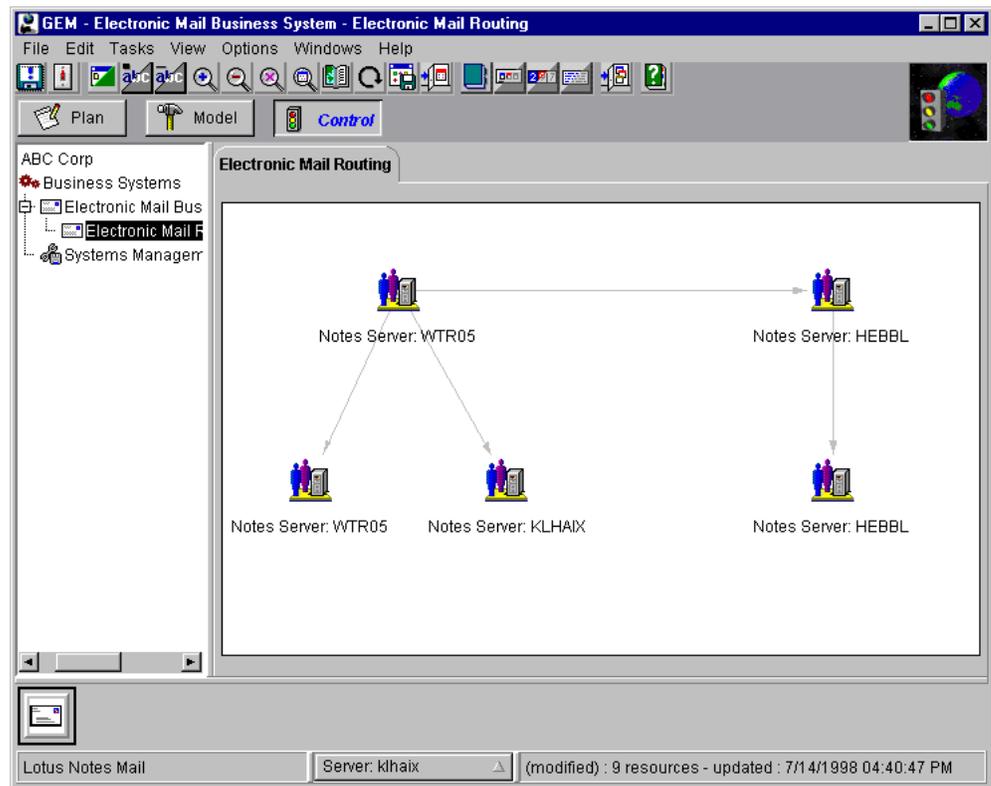


Figure 190. GEM Topology Console

7.3.1 Tasks

Each Domino server object displayed on the GEM topology console has a right mouse button menu item. In these menus are the Domino server component tasks we described in “Installing the Tivoli GEM APM Extension” on page 179, which you can execute against the associated managed resource. In our example, we executed the remote console command show schedule against Domino server WTR05156, by selecting **Notes_Remote_Console_Command** from the Domino server object’s active menu (Figure 191).

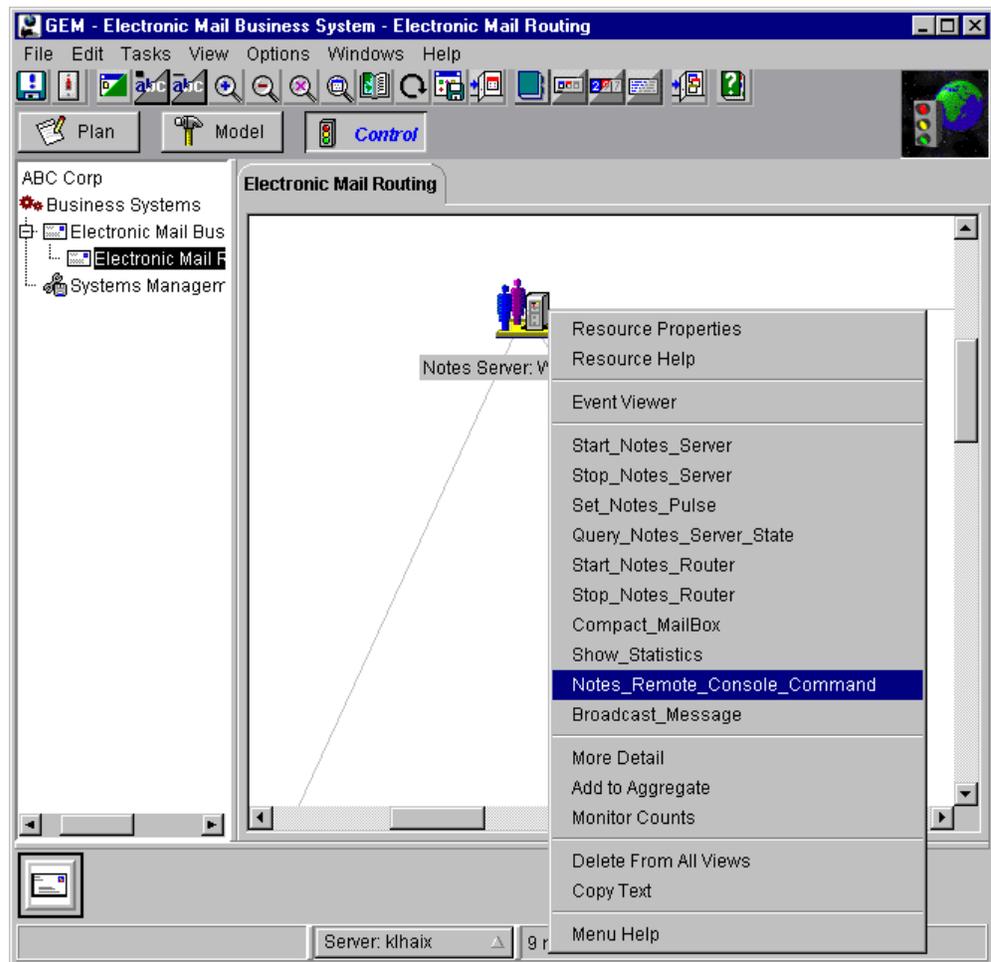


Figure 191. Selecting Menu Item from GEM Console Active Menu

When the menu item is selected, task execution starts and you are prompted for any task arguments (Figure 192).

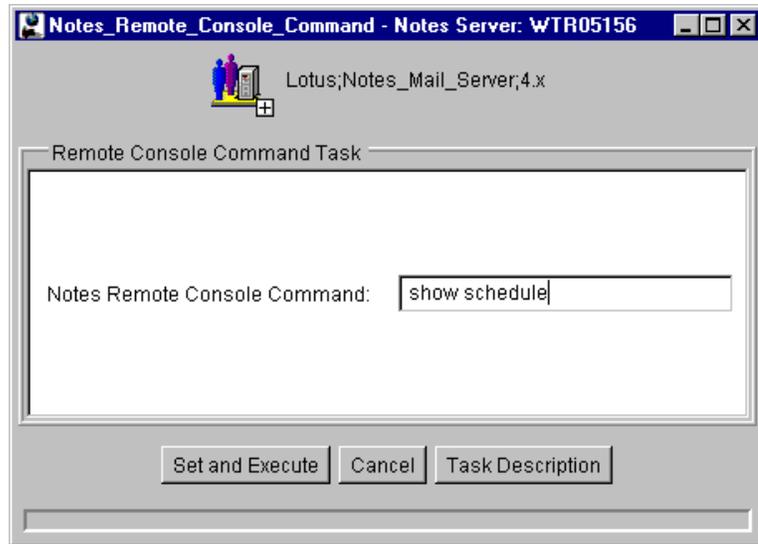


Figure 192. Task Execution Parameters

The task execution in the server machine continues when **Set and Execute** is clicked. The output from the task is shown in the GEM topology console log (Figure 193).

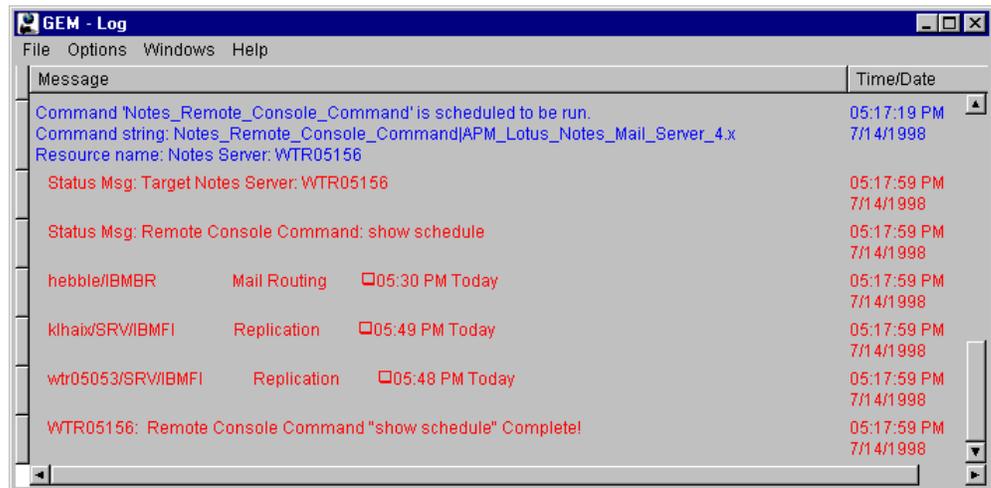


Figure 193. GEM Console Log

7.3.2 Monitors

You can view the monitors defined for the Domino servers by the Tivoli GEM APM Extension by selecting **More Detail** from your right mouse button menu or double-clicking on the server object (Figure 194).

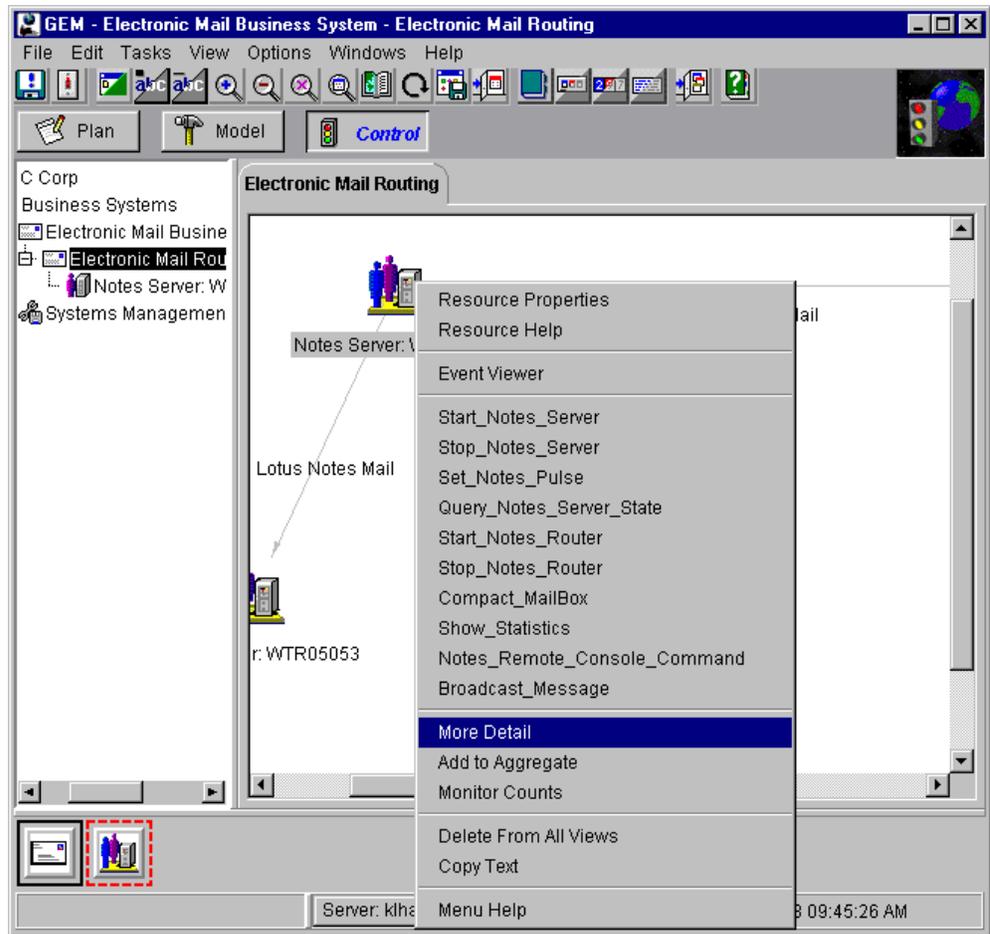


Figure 194. More Details

You can see the monitors in topology mode (Figure 195) or in details mode (Figure 196). You can toggle between these display modes by selecting **View -> Show as Details** and **View -> Show as Topology**.

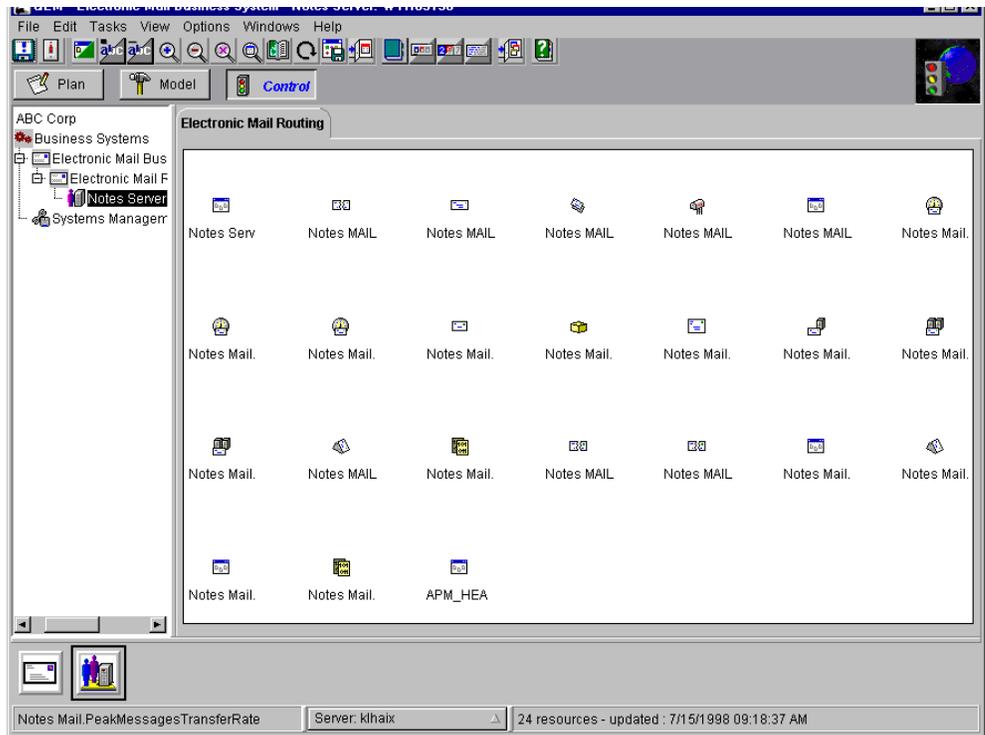


Figure 195. GEM Notes Server Monitors - Topology View

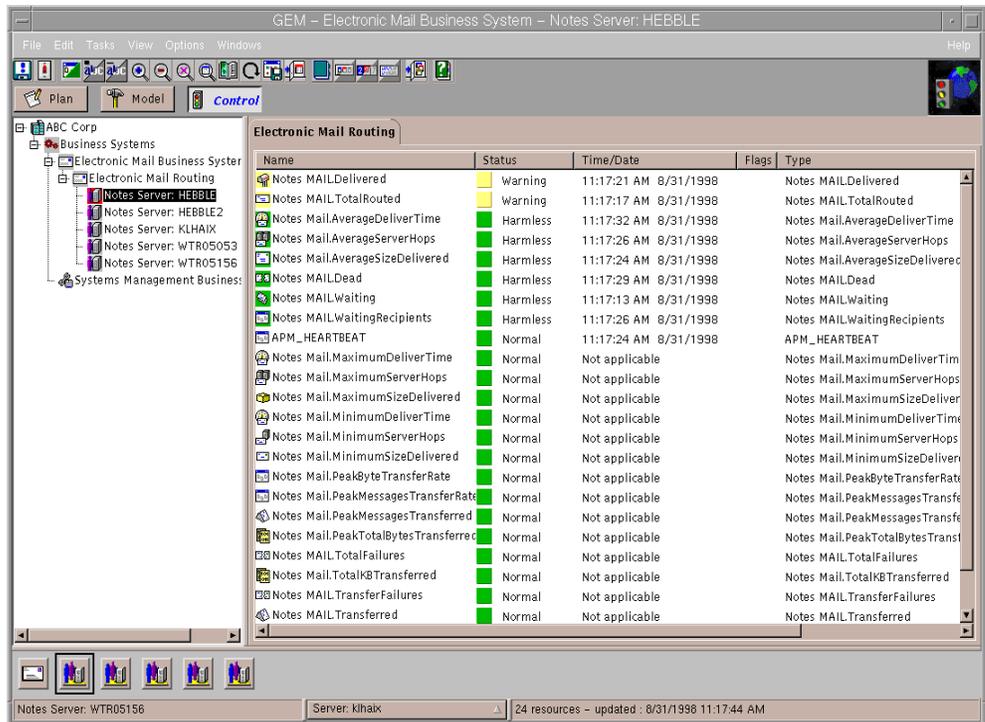


Figure 196. GEM Notes Server Monitors - Details View

As you can see, a subset of the Domino-supported monitors from the base Tivoli Manager for Domino have been pre-selected to be monitored from the GEM

environment, in addition to the GEM-required heartbeat monitor. These synchronous monitors have been defined in mailview_server_notes.cdf, and apmnotes.rls converts the events generated from these monitors into APM_THRESHOLD events for the GEM server (see “Configuring the Event Server” on page 182). Monitors can be added or deleted from this list by making the appropriate changes in mailview_server_notes.cdf and apmnotes.rls.

Any monitors that have not generated any APM events (either because a threshold condition has not been met or the monitor is not active) will have a Time/Date value of Not Applicable in the Notes Server Detail View. From the GEM topology console, you can tailor these monitors, for example, set new thresholds or a polling interval for them. Setting new thresholds or modifying the polling interval launches a task that modifies the monitor in the Sentry profile, enables the monitor if it isn’t enabled already, and re-distributes it to the Notes server.

An example of setting new thresholds for the Notes MAIL.Dead monitor is shown in the following pictures.

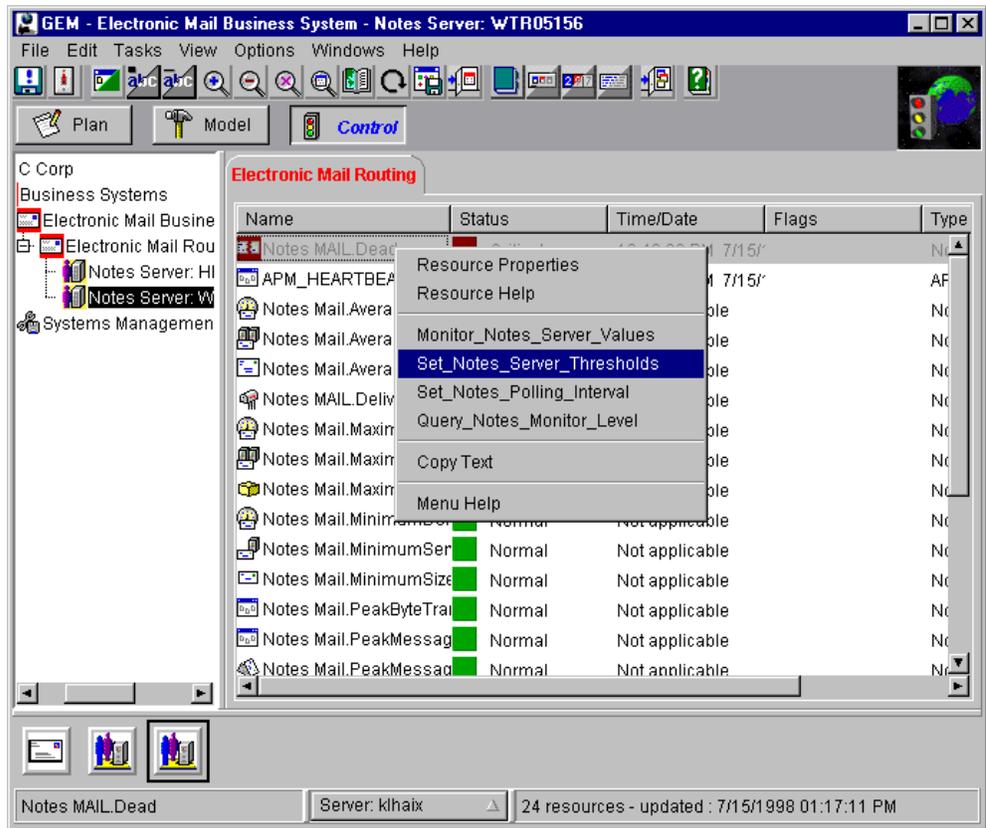


Figure 197. Setting Thresholds

From either the Detail View (shown above in Figure 197) or the Topology View, select the monitor task **Set_Notes_Server_Thresholds** from the monitor’s pop-up menu. You will be presented with a dialog to set the monitor’s thresholds (Figure 198 on page 199).

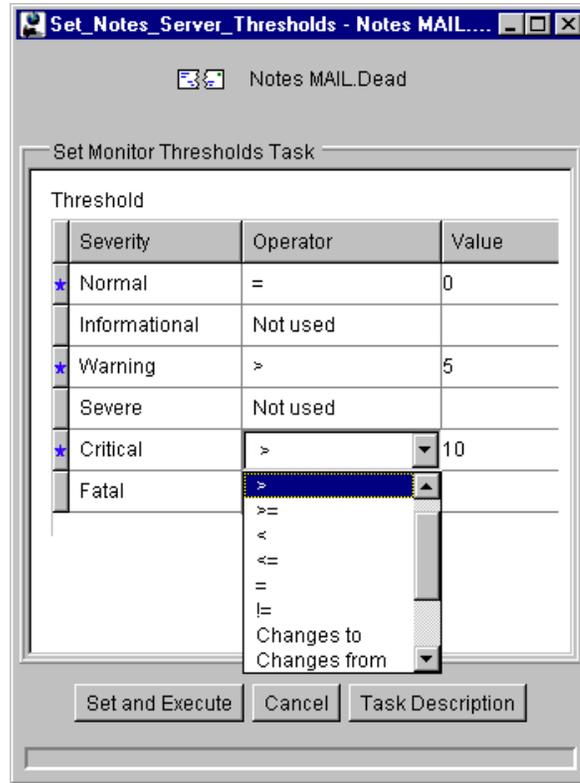


Figure 198. Setting Threshold Values

Selecting the operator field of the desired severity will activate that field, allowing you to make a selection. Once the operators and values have been specified, click on the Set and Execute push button to update, enable, and distribute the monitor. Messages pertaining to the update can be seen in the Log (Figure 199).

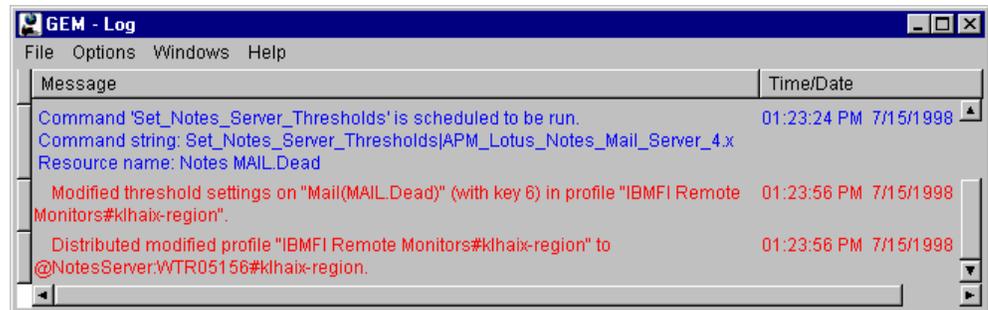


Figure 199. Thresholds Set Messages

Appendix A. Tivoli Manager for Domino Rule Base

Here is a listing of the default Tivoli Manager for Domino BAROC files and Tivoli Manager for Domino rule set files.

A.1 BAROC Files

This is the order of the imported classes, when you configure an event server from the Default rule base:

- root.baroc
- tec.baroc
- Sentry.baroc
- tivoli.baroc
- universal.baroc
- notes_tecad.baroc
- notes_server_monitor.baroc

The notes_tecad.baroc and the Notes_server_monitor.baroc are provided with the Tivoli Manager for Domino.

The root.baroc and tec.baroc are provided with TEC and the others are shipped with Tivoli Distributed Monitoring.

A.1.1 notes_tecad.baroc

```
#####
#   T/EC Class definitions for Notes
#####

#####
# Heartbeat event class definition
#####

TEC_CLASS:
  Notes_Heartbeat_event
    ISA EVENT
      DEFINES {
        sub_source:                dup_detect = 'yes';
        domain:                    STRING,    dup_detect = 'yes';
        tec_svr_location:          STRING,    dup_detect = 'yes';
        managednode:              STRING,    dup_detect = 'yes';
        region:                   STRING,    dup_detect = 'yes';
        interval:                 INTEGER;
        hostname:                 dup_detect = 'yes';
        severity:                 default = HARMLESS;
      };
END
```

```

TEC_CLASS:
  Notes_Alert
    ISA EVENT
    DEFINES {
      sub_source:                dup_detect = 'yes';
      domain:                    STRING,    dup_detect = 'yes';
      tec_svr_location:         STRING,    dup_detect = 'yes';
      managednode:             STRING,    dup_detect = 'yes';
      region:                  STRING,    dup_detect = 'yes';
      hostname:                dup_detect = 'yes';
      severity:                default = HARMLESS;
      server:                  STRING,    dup_detect = 'yes';
      msg:                    dup_detect = 'yes';
      eventtime:              STRING;
      starttime:              STRING;
    };
END

TEC_CLASS:
  TECAD_NOTES_STARTED
    ISA Notes_Alert
    DEFINES {
    };
END
TEC_CLASS:
  TECAD_NOTES_SHUTDOWN
    ISA Notes_Alert
    DEFINES {
    };
END
TEC_CLASS:
  NOTES_EVT
    ISA Notes_Alert
    DEFINES {
    };
END
TEC_CLASS:
  NOTES_EVT_UNKNOWN
    ISA Notes_Alert
    DEFINES {
    };
END
TEC_CLASS:
  NOTES_EVT_COMM
    ISA Notes_Alert
    DEFINES {
    };
END
TEC_CLASS:
  NOTES_EVT_SECURITY
    ISA Notes_Alert

```

```

        DEFINES {
    };
END
TEC_CLASS:
    NOTES_EVT_MAIL
        ISA Notes_Alert
        DEFINES {
    };
END
TEC_CLASS:
    NOTES_EVT_REPLICA
        ISA Notes_Alert
        DEFINES {
    };
END
TEC_CLASS:
    NOTES_EVT_RESOURCE
        ISA Notes_Alert
        DEFINES {
    };
END
TEC_CLASS:
    NOTES_EVT_MISC
        ISA Notes_Alert
        DEFINES {
    };
END
TEC_CLASS:
    NOTES_EVT_SERVER
        ISA Notes_Alert
        DEFINES {
    };
END
TEC_CLASS:
    NOTES_EVT_ALARM
        ISA Notes_Alert
        DEFINES {
    };
END
TEC_CLASS:
    NOTES_EVT_UPDATE
        ISA Notes_Alert
        DEFINES {
    };
END
TEC_CLASS:
    NOTES_EVT_DOMINO
        ISA Notes_Alert
        DEFINES {
    };
END
TEC_CLASS:
    NOTES_EVT_10

```

```

        ISA Notes_Alert
    DEFINES {
    };
END
TEC_CLASS:
    NOTES_EVT_11
        ISA Notes_Alert
    DEFINES {
    };
END
TEC_CLASS:
    NOTES_EVT_12
        ISA Notes_Alert
    DEFINES {
    };
END
TEC_CLASS:
    NOTES_EVT_13
        ISA Notes_Alert
    DEFINES {
    };
END
TEC_CLASS:
    NOTES_EVT_14
        ISA Notes_Alert
    DEFINES {
    };
END
TEC_CLASS:
    NOTES_EVT_15
        ISA Notes_Alert
    DEFINES {
    };
END
TEC_CLASS:
    NOTES_EVT_16
        ISA Notes_Alert
    DEFINES {
    };
END
TEC_CLASS:
    NOTES_EVT_17
        ISA Notes_Alert
    DEFINES {
    };
END
TEC_CLASS:
    NOTES_EVT_18
        ISA Notes_Alert
    DEFINES {
    };
END
TEC_CLASS:

```

```

NOTES_EVT_19
    ISA Notes_Alert
    DEFINES {
};
END

```

A.1.2 notes_server_monitor_35.baroc

```

TEC_CLASS :
    Notes_Server_Monitors ISA Sentry3_5_Base
    DEFINES {
        monitor:    dup_detect= 'yes';
        probe_arg:  dup_detect = 'yes';
        collection: dup_detect = 'yes';
        sub_source: dup_detect = 'yes';
        hostname:   dup_detect = 'yes';
        sub_origin: dup_detect = 'yes';
        severity:   dup_detect = 'yes';
        value:      dup_detect = 'yes';
        response_level: dup_detect= 'yes' ;
    };
END
TEC_CLASS :
    Notes_Program_Status_Monitor ISA Notes_Server_Monitors;
END
TEC_CLASS :
    Notes_Server_Available_Monitor ISA Notes_Server_Monitors;
END
TEC_CLASS :
    Notes_Server_Monitor ISA Notes_Server_Monitors;
END
TEC_CLASS :
    Notes_Database_Monitor ISA Notes_Server_Monitors;
END
TEC_CLASS :
    Notes_Memory_Monitor ISA Notes_Server_Monitors;
END
TEC_CLASS :
    Notes_MemoryAssessment_Monitor ISA Notes_Server_Monitors;
END
TEC_CLASS :
    Notes_Replication_Monitor ISA Notes_Server_Monitors;
END
TEC_CLASS :
    Notes_Mail_Monitor ISA Notes_Server_Monitors;
END
TEC_CLASS :
    Notes_Disk_Monitor ISA Notes_Server_Monitors;
END
TEC_CLASS :
    AMS_NotesMonitor_Alert ISA Notes_Server_Monitors;
END
TEC_CLASS :
    Notes_Domino_Monitor ISA Notes_Server_Monitors;

```

```

END
TEC_CLASS :
    Notes_Agent_Monitor ISA Notes_Server_Monitors;
END
TEC_CLASS :
    Notes_Web_Monitor ISA Notes_Server_Monitors;
END
TEC_CLASS :
    Notes_Statistics_Monitor ISA Notes_Server_Monitors;
END

```

A.2 Rule Set Files

This is the order of the imported rule sets, when you configure an event server from the Default rule base:

- notes_tecad.rls
- notes_monitor.rls
- notes_default.rls

A.2.1 notes_tecad.rls

```

/*
 * Component Name: Notes_default.rls
 *
 * Description:
 *     Default Rules Associated with the Notes Logfile Monitor Adapter
 *
 * (C) COPYRIGHT TIVOLI Systems, Inc. 1994
 * Published Work
 * All Rights Reserved
 * Licensed Material - Property of TIVOLI Systems, Inc.
 */

/* This rules set utilizes the classes from the Notes.baroc
   file. This should only be used in conjunction with the Notes
   adapters.
 */

/*
   These rules should be first to insure no other rules are fired.
   The following rules will search for duplicate Notes events.
   If found, they will update the duplicate event with the latest
   event's information and discard the new event.
   In this manner, only one duplicate event per class should exist
   on the console and in the events database.
   There is one rule for each class of event that must be handled differently.
 */

/*
RULE    dup_notes_alert
        DESCRIPTION
        This rule will search for duplicate Notes_Alert events,

```

and close any duplicate events.
 In this manner, only one duplicate event per class should exist.
 All events that come from tecad_notes are Notes_Alert events.

```

*/
rule:
dup_notes_alert:
(
  description: 'Close duplicate Notes_Alert events',
  event: _event of_class within ['Notes_Alert']
  where [
    status: outside ['CLOSED']
  ],

  reception_action:
  (
    first_duplicate(_event,
      event: _dup_notes_ev
      where [
        status: outside [ 'CLOSED' ]
      ]
    ),
    set_event_status( _dup_notes_ev, 'CLOSED' )
  )
).

```

```

/*
RULE    harmless_set_timer
DESCRIPTION
This rule should be the second rule so that harmless events
will automatically be closed. It sets a timer on each harmless event.
A timer rule will close the event when the timer expires.

```

```

*/

rule:
harmless_set_timer:
(
  event: _event of_class within ['Notes_Alert']
  where [
    status: outside ['CLOSED'],
    severity: equals 'HARMLESS'
  ],

  action:
  (
    set_timer( _event,60,'harmless')
  )
).

```

```

/*
RULE    tecad_notes_up

```

```

DESCRIPTION
    This rule responds to a TECAD_NOTES_STARTED event by:
    1) closing the TECAD_NOTES_STARTED event (auto acknowledging it)
    2) closing any correlating TECAD_NOTES_SHUTDOWN event
*/

rule:
tecad_notes_up: (
    description: 'Acknowledge that tecad_notes is up and close all \
        outstanding TECAD_NOTES_SHUTDOWN events',

    event: _event of_class 'TECAD_NOTES_STARTED'
        where [
            domain: _domain,
            status: outside ['CLOSED'],
            managednode: _managednode,
            hostname: _hostname,
            server: _server
        ],

    action: auto_acknowledge_tecad_notes_started: (
        set_event_status(_event, 'CLOSED')
    ),

    action: close_all_tecad_notes_shutdown_events: (
        all_instances(
            event: _down_event of_class 'TECAD_NOTES_SHUTDOWN'
                where [
                    domain: equals _domain,
                    status: outside ['CLOSED'],
                    managednode: equals _managednode,
                    hostname: equals _hostname,
                    server: equals _server
                ]
        ),
        set_event_status(_down_event, 'CLOSED')
    )
).

/*
RULE    tecad_harmless_still_open
DESCRIPTION
    This rule works with the harmless_set_timer rule to close harmless
    events after 60 seconds. harmless_set_timer sets the timer on each
    incoming event, and this rule closes the event when the timer expires.
*/

timer_rule:
tecad_harmless_still_open:
(
    event: _event of_class within ['Notes_Alert']
        where [
            status: outside ['CLOSED']
        ],
    timer_info: equals 'harmless',

```

```

        action:
            (
                set_event_status( _event, 'CLOSED' )
            )
        ).

/*
RULE    forward_notes_events
DESCRIPTION
        Forward all tecad_notes events to event server indicated in the
Configure
        EventServer task.  Does nothing if no forwarding server has been
        specified.

*/

rule:
forward_notes_events:
(
    description: 'Forward the event',
    event: _event of_class within ['Notes_Alert', 'Notes_Heartbeat_event'],

    reception_action:
        (
            forward_event(_event)
        )
    ).
/* **** EOF **** */

```

A.2.2 notes_monitor.rls

```

/*
* Component Name: Notes
*
* $Source:
* /tivoli/development/src/2.0/ams/notes/scripts/src/rls/notes_monitor.rls,v $
*
* $Revision: 1.9 $
*
* Description:
*
* (C) COPYRIGHT Tivoli Systems, Inc. 1995
* Unpublished Work
* All Rights Reserved
* Licensed Material - Property of Tivoli Systems, Inc.
*/

/*
RULE    set_subsource_slot
DESCRIPTION
        Test to see if the sub_source (which is the profile name) matches

```

one of our known strings. If it does, get the NotesDomainAlias from the string and reset the sub_source slot to the NotesDomainAlias. You probably shouldn't try this at home :-)

It is important, even required that this rule be executed before all other monitor rules and the notes_default.rls ruleset are executed. All other rules depend upon this slot being set.

```
*/

rule:
set_subsource_slot:
(
  description: 'set the sub_source slot to the DomainAlias',
  event: _event of_class within ['Sentry2_0_Base']
  where [
    status: outside ['CLOSED'],
    sub_source: _sub_source
  ],
  reception_action:
  (
    /* set variable equal to a list of strings */
    _strs=[ ' Remote Monitors',' Central Monitors' ],
    /* member will look through strings looking for solutions */
    member(_m,_strs),
    /* atompartsall is like strstr and will set _p to the
       location of the match */
    atompartsall(_sub_source,_m,_p),
    /* decrement _p by 1 */
    _newp is _p - 1,
    /* atompart will give us the substring .i.e the sub_source */
    atompart(_sub_source,_domainalias,1,_newp),
    /* set the event slot */
    bo_set_slotval(_event,sub_source,_domainalias),
    re_mark_as_modified(_event,_)
  )
).

/*
RULE    forward_all_events
        DESCRIPTION
        Forward all sentry events to event server indicated in the Configure
        EventServer task. Does nothing if no forwarding server has been
        specified.

*/
rule:
forward_all_events:
(
  description: 'forward all monitor events',
  event: _event of_class within ['Sentry2_0_Base'],
```

```

reception_action:
(
    forward_event(_event)
)
).

/*
RULE    dup_notes_monitor_event
DESCRIPTION
    This rule will search for duplicate Notes monitor events,
    and close any duplicate events.
    In this manner, only one duplicate event per class should exist.
*/

rule:
dup_notes_monitor_event:
(
    description: 'Close duplicate Server Monitor events',
    event: _event of_class within ['Notes_Server_Monitors'],

    reception_action:
    (
        first_duplicate(_event,
            event: _duplicate
            where [
                status: outside ['CLOSED']
            ]
        ),
        set_event_status( _duplicate, 'CLOSED' )
    )
).

/*
RULE    sentry_harmless_set_timer
DESCRIPTION
    This rule should be the second rule so that harmless events
    will automatically be closed. It sets a timer on each harmless event.
    A timer rule will close the event when the timer expires.
*/

rule:
sentry_harmless_set_timer:
(
    event: _event of_class within ['Notes_Server_Monitors']
    where [
        status: outside ['CLOSED'],
        severity: equals 'HARMLESS'
    ],
    action:
    (
        set_timer( _event,60,'harmless')
    )
)

```

```

    )
).

/*
RULE    server_avail
DESCRIPTION
    Acknowledge that the server is available and close all
    outstanding server unavailable events.
*/

rule:
server_avail: (
    description: 'Acknowledge that the server is available and close all \
        outstanding server unavailable events',

    event: _event of_class within ['Notes_Server_Available_Monitor']
        where [
            source: equals 'SENTRY',
            status: outside ['CLOSED'],
            value: equals 'up',
            sub_origin: _sub_origin,
            hostname: _hostname
        ],

    reception_action: auto_acknowledge_server_avail: (
        set_event_status(_event, 'CLOSED')
    ),

    reception_action: close_all_server_unavailable_events: (
        all_instances(
            event: _unavail_event of_class within
                ['Notes_Server_Available_Monitor']
                where [
                    source: equals 'SENTRY',
                    status: outside ['CLOSED'],
                    value: equals 'down',
                    sub_origin: equals _sub_origin,
                    hostname: equals _hostname
                ]
        ),
        set_event_status(_unavail_event, 'CLOSED')
    )
)

).

/*
RULE    process_up
DESCRIPTION
    Acknowledge the receipt of a Notes_Program_Status_Monitor
    'up' event, and close any corresponding 'down' event for that server
    or add-in task.
*/

rule:
process_up: (
    description: 'Acknowledge that the server/add-in task is up and close

```

```

all \
    outstanding server/add-in down events',

event: _event of_class within [ 'Notes_Program_Status_Monitor']
    where [
        source: equals 'SENTRY',
        status: outside ['CLOSED'],
        value: equals 'up',
        sub_origin: _sub_origin,
        hostname: _hostname,
        probe_arg: _probe_arg
    ],
reception_action: auto_acknowledge_process_is_up: (
    set_event_status(_event, 'CLOSED')
),
reception_action: close_all_process_down_events: (
    all_instances(
        event: _down_event of_class within [
            'Notes_Program_Status_Monitor']
        where [
            source: equals 'SENTRY',
            status: outside ['CLOSED'],
            value: equals 'down',
            sub_origin: equals _sub_origin,
            hostname: equals _hostname,
            probe_arg: equals _probe_arg
        ]
    ),
    set_event_status(_down_event, 'CLOSED')
)
).

/*
RULE    host_up
DESCRIPTION
    Acknowledge that the host is up and close all outstanding host down
events
    Handles both Sentry2_0_host and universal_host events; both event
types result from Sentry host-availability monitors.
*/

rule: host_up: (
    description: 'Acknowledge that the host is up and close all \
        outstanding host down events',

    event: _event of_class within
        ['Sentry2_0_host', 'universal_host']
        where [
            source: equals 'SENTRY',
            status: outside ['CLOSED'],
            value: equals 'up',

```

```

        hostname: _hostname
    ],
    action: auto_acknowledge_host_is_up: (
        set_event_status(_event, 'CLOSED')
    ),
    action: close_all_host_down_events: (
        all_instances(
            event: _down_event of_class within
                ['Sentry2_0_host', 'universal_host']
            where [
                source: equals 'SENTRY',
                status: outside ['CLOSED'],
                hostname: equals _hostname,
                value: equals 'down'
            ]
        ),
        set_event_status(_down_event, 'CLOSED')
    )
).

/*
RULE    host_down
DESCRIPTION
    Discard logically duplicate host down events.  Handles both
    Sentry2_0_host and universal_host events; both event types result
    from Sentry host availability monitors.  This is different from the
    dup_notes_monitor_event because the events do not have to meet
    all of the "duplicate" criteria.  They only have to be non-closed SENTRY
    events noting that a given host is down.  It will update the time
received
    on the old event, so that the user always sees the time of the last
duplicate event to arrive.
    In this manner, only one duplicate event per class should exist.

*/

rule: host_down: (
    description: 'Discard duplicate host down events',

    event: _event of_class within ['Sentry2_0_host', 'universal_host']
        where [
            source: equals 'SENTRY',
            status: outside ['CLOSED'],
            value: equals 'down',
            hostname: _hostname
        ],
    action: discard_duplicates: (
        first_instance(
            event: _duplicate of_class within
                ['Sentry2_0_host', 'universal_host']
            where [
                source: equals 'SENTRY',
                status: outside ['CLOSED'],

```

```

                                value: equals 'down',
                                hostname: equals _hostname
                                ]
                                ),
                                add_to_repeat_count(_duplicate, 1),
                                drop_received_event,
                                commit_rule
                                )
).

/*
RULE    host_down_no_more_sentries
DESCRIPTION
    This rule will drop any incoming sentries for a given
    Notes Server machine if the machine is down.  Handles both
    Sentry2_0_host and universal_host events; both event types result
    from Sentry host availability monitors.

*/

rule:
host_down_no_more_sentries:
(
    description: 'Do not accept new sentry events if the host is down',
    event: _event of_class within ['Sentry2_0_Base']
        where [
                                sub_source: _sub_source,
                                origin: _origin
                                ],

    reception_action:
    (
        first_instance(
            event: _down_event of_class within
                ['Sentry2_0_host', 'universal_host']
            where [
                                status: outside ['CLOSED'],
                                value: equals 'down',
                                sub_source: equals _sub_source,
                                origin: equals _origin
                                ]
            ),
            drop_received_event,
            commit_rule
        )
    ).

/*
RULE    notes_server_down_no_more_appDown
DESCRIPTION

```

```

        This rule will drop any incoming Notes_Program_Status_Monitor
        'down' events or Notes_Server_Available_Monitor 'down' events
        for a Notes Server if the server itself is down.
    */

rule:
notes_server_down_no_more_appDown:
(
    description: 'Do not accept new Notes_Program_Status_Monitor
        or Notes_Server_Available_Monitor down events if the server is down',
    event: _event of_class within ['Notes_Program_Status_Monitor',
        'Notes_Server_Available_Monitor'
    ]
        where [
            sub_source: _sub_source,
            sub_origin: _sub_origin,
            hostname: _hostname
        ],

    reception_action:
    (
        first_instance(
            event: _down_event of_class within [
                'Notes_Program_Status_Monitor' ]
            where [
                probe_arg: within [ 'server|nserver' ],
                status: outside ['CLOSED'],
                value: equals 'down',
                sub_origin: equals _sub_origin,
                sub_source: equals _sub_source,
                hostname: equals _hostname
            ]
        ),
        drop_received_event,
        commit_rule
    )
).

/*
RULE    notes_server_down_no_more_monitor_alert
        DESCRIPTION
        This rule will drop any incoming AMS_NotesMonitor_Alert events
        for a Notes Server if the server itself is down.
*/

rule:
notes_server_down_no_more_monitor_alert:
(
    description: 'Do not accept new AMS_NotesMonitor_Alert events if the ser
ver is down',
    event: _event of_class within ['AMS_NotesMonitor_Alert' ]
        where [
            sub_source: _sub_source,

```

```

                                hostname: _hostname
                                ],
reception_action:
(
    first_instance(
        event: _down_event of_class within [
            'Notes_Program_Status_Monitor' ]
        where [
            probe_arg: within [ 'server|nserver' ],
            status: outside ['CLOSED'],
            value: equals 'down',
            sub_source: equals _sub_source,
            hostname: equals _hostname
        ]
    ),
    drop_received_event,
    commit_rule
)
).

```

```

/*
RULE    notes_server_down_close_appDown
DESCRIPTION
    This rule will drop any existing Notes_Program_Status_Monitor or
    Notes_Server_Available_Monitor 'down' events or for a Notes Server
    if the server itself is down.
*/

```

```

rule:
notes_server_down_close_appDown:
(
    description: 'Close existing appStatus down events if the server is down',
    event: _event of_class within [
        'Notes_Program_Status_Monitor' ]
    where [
        probe_arg: equals 'server|nserver',
        value: equals 'down',
        sub_origin: _sub_origin,
        sub_source: _sub_source,
        hostname: _hostname
    ],
    action: close_all_appDown_events: (
        all_instances(
            event: _down_event of_class within ['Notes_Program_Status_Monitor',
                'Notes_Server_Available_Monitor' ]
            where [
                status: outside ['CLOSED'],
                value: equals 'down',
                sub_source: equals _sub_source,

```

```

                sub_origin: equals _sub_origin,
                hostname: equals _hostname
            ]
        ),
        set_event_status(_down_event, 'CLOSED')
    )
).

/*
RULE    sentry_harmless_still_open
DESCRIPTION
    This rule works with the harmless_set_timer rule to close harmless
    events after 60 seconds. harmless_set_timer sets the timer on each
    incoming event, and this rule closes the event when the timer expires.
*/

timer_rule:
sentry_harmless_still_open:
(
    event: _event of_class 'Notes_Server_Monitors'
        where [
            status: outside ['CLOSED']
        ],
        timer_info: equals 'harmless',

    action:
        (
            set_event_status( _event, 'CLOSED' )
        )
).

```

A.2.3 notes_default.rls

```

/*
* Component Name: notes_default.rls
*
* Description:
*     Default Rules Associated with the Notes Adapter
*
* (C) COPYRIGHT TIVOLI Systems, Inc. 1994
* Published Work
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*/

/* these rules involve the correlation of tecad and sentry events */
/* Appropriate correlations have not been identified; the comments just record
   possible correlations to add
*/

/* if the Notes server is down, then drop all new sentry events */

```

```
/* if the Notes server just came up, then close any old sentry events */

/*
   if the Notes server just went down, then there is no need to keep
   any old sentry events open, you can still look at closed events
*/

/*
   if the Notes server just went down, then there is no need to keep
   any old tecad events open, you can still look at closed events
*/

/* drop incoming sentry alerts if they occur within 35 minutes of a statechange
*/
/* which should be approximately two iterations of most of the default monitors
*/

/* **** EOF **** */
```

Appendix B. GEM and GEM-APM Extension Rule Base Files

This appendix contains a listing of the default Tivoli GEM BAROC file (interapp.baroc), the Tivoli GEM rule set (interapp.rls), and the Tivoli GEM APM Extension for the Tivoli Manager for Domino rule set (apmnotes.rls).

B.1 interapp.baroc

```
#
# +-----+
# | Licensed Materials - Property of IBM|
# | 5697-B83                               |
# | (C) Copyright Tivoli Systems, an IBM Company 1982, 1997|
# | All rights reserved.                   |
# | (C) Copyright IBM Corp. 1982, 1997. All rights reserved.|
# |                                         |
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# | disclosure restricted by GSA ADP Schedule Contract with IBM Corp. |
# +-----+
# interapp.baroc
#
# Paul J. Liskay
#

TEC_CLASS:
  APM_BASE ISA EVENT DEFINES
  {
  };
  END

ENUMERATION APPLICATION_STATUS
  0 'UP'
  1 'DOWN'
  END

TEC_CLASS:
  APM_HEARTBEAT ISA APM_BASE DEFINES
  {
    apm_application_status : APPLICATION_STATUS, default=UP;
    apm_display_name      : STRING;
    apm_es_managed_node   : STRING;
    apm_hbinterval        : INTEGER;
    apm_old_source        : STRING;
    apm_old_sub_source    : STRING;
    apm_old_origin        : STRING;
    apm_old_sub_origin    : STRING;
    apm_data1              : STRING;
    apm_data2              : STRING;
    apm_data3              : STRING;
    apm_data4              : STRING;
  };
  END

#ENUMERATION RELATIONSHIP_DIRECTION
# 0 'Other'
# 1 'Origin'
# 2 'Destination'
```

```

# 3 'Bi-direction'
# 4 'Replica'
#END

ENUMERATION RELATIONSHIP_DIRECTION
0 '0'
1 '1'
2 '2'
3 '3'
4 '4'
END

TEC_CLASS:
  APM_THRESHOLD ISA Sentry2_0_Base DEFINES
  {
    apm_relationship_class : STRING;
    apm_relationship_dir   : RELATIONSHIP_DIRECTION;
    apm_source             : STRING;
    apm_sub_source        : STRING;
    apm_origin             : STRING;
    apm_sub_origin        : STRING;
    apm_hostname          : STRING;
    probe                  : STRING;
    tmr                    : STRING;
    dispatcher            : STRING;
  };
END

#ENUMERATION RELATIONSHIP_CHANGE
# 1 'Add'
# 2 'Remove'
#END

ENUMERATION RELATIONSHIP_CHANGE
1 '1'
2 '2'
END

TEC_CLASS:
  APM_CONNECTION_CHANGE ISA APM_BASE DEFINES
  {
    apm_relationship_class : STRING;
    apm_relationship_dir   : RELATIONSHIP_DIRECTION;
    apm_source             : STRING;
    apm_sub_source        : STRING;
    apm_origin             : STRING;
    apm_sub_origin        : STRING;
    apm_hostname          : STRING;
    apm_change            : RELATIONSHIP_CHANGE;
  };
END

```

B.2 interapp.rls

```
/*#####
#
#-----+
#| Licensed Materials - Property of IBM      |#
#| 5697-B83                                |#
#| (C) Copyright Tivoli Systems, an IBM Company 1982, 1997 |#
#| All rights reserved.                    |#
#| (C) Copyright IBM Corp. 1982, 1997.All rights reserved. |#
#|                                          |#
#| US Government Users Restricted Rights - Use, duplication or |#
#| disclosure restricted by GSA ADP Schedule Contract with IBM Corp. |#
#-----+
# interapp.rls                               #
#                                             #
#####*/

/* current directory at execution time is $BINDIR/TME/TEC */

rule:
heartbeat_rule:
(
description: 'do nothing except invoke IHSTETEC which will \
            get the slot values from the environment and \
            forward the event to the APM server specified\
            in $BINDIR/TDS/EventService/ihsttec.cfg.',
event: _event of_class 'APM_HEARTBEAT'
      where [],

reception_action:
(
  exec_program(_event,
              './../TDS/EventService/ihstetec',
              '',
              [],
              'YES')
)
).

rule:
threshold_rule :
(
description: 'do nothing except invoke IHSTMTEC which will \
            get the slot values from the environment and \
            forward the event to the APM server specified\
            in $BINDIR/TDS/EventService/ihsttec.cfg.',
event: _event of_class 'APM_THRESHOLD'
      where [],

reception_action:
(
  exec_program(_event,
              './../TDS/EventService/ihstmtec',
              '',
              [],
              'YES')
)
).
```

```

rule:
connection_change_rule:
(
description: 'do nothing except invoke IHSTCTEC which will \
            get the slot values from the environment and \
            forward the event to the APM server specified\
            in $BINDIR/TDS/EventService/ihsttec.cfg.',
event: _event of_class 'APM_CONNECTION_CHANGE'
      where [],

reception_action:
(
exec_program(_event,
            './../TDS/EventService/ihstctec',
            '',
            [],
            'YES')
)
).

```

B.3 apmnotes.rls

```

/*
* +-----+
* ! Licensed Materials - Property of IBM !
* ! 5697-B83 !
* ! (C) Copyright Tivoli Systems, an IBM Company 1982, 1997 !
* ! All rights reserved. !
* ! !
* ! US Government Users Restricted Rights - Use, duplication or !
* ! disclosure restricted by GSA ADP Schedule Contract with IBM Corp. !
* +-----+
* Component Name: Notes
*
* $Source: /tivoli/development/src/2.0/ams/notes/scripts/src/rls/apmnotes.rls,v $
*
* $Revision: 1.0 $
*
* Description:
*
*/

/*
Generate an internal event from a Notes_Server_Monitor event. The new
event generated will be of the APM_THRESHOLD event class. In order for
the APM Server to correlate the event to the appropriate resource, the
sub_source slot (typically the Sentry Profile Name) must be set to the
Manufacturer|Product|Version of the component. In the case of the
input Notes_Server_Monitor event, the profile would be constructed from
the Notes domain name. Additionally, we must ensure that the
monitor slot in the generated event maps to the monitor name in the
CDF. The TIME 10 Module for Notes monitors exploit probe arguments. So
for example, the probe name might be 'Mail' and the probe argument
'Transferred'. Lack of support for Monitor Args and Monitor Instances
in the APM server forces us to code our CDF monitor defs as if the
monitors are not using monitor arguments. This rule therefore must
'bridge the gap' and map both the probe_arg and monitor slots in the

```

incoming event into the monitor slot in the outgoing event. Finally, the hostname slot of the outgoing event (the APM_THRESHOLD event) must be modified to support appropriate correlation by the APM server. The Sentry event adapter seems to mapping the label of the profile endpoint (in this case a NotesServer object) into the hostname slot. For the APM Server, this value must be hostname, so (for now) we are going to slam the adapter_host slot into the hostname slot.

*/

rule:

gen_APM_threshold_event_from_notes:

(

```

description: 'For each Notes_Mail_Monitor event, generate a \
corresponding internal event of the \
APM_THRESHOLD event class Ensure that the \
sub_source and monitor slots are modified to \
allow the APM server to correlate the event \
with the affected resource/component definition.',
event: _event of_class _class within ['Notes_Mail_Monitor']
where [
    status: _status outside ['CLOSED'],
    source: _source,
    sub_source: _sub_source,
    origin: _origin,
    sub_origin: _sub_origin,
    hostname: _hostname,
    adapter_host: _adapter_host,
    severity: _severity,
    date: _date,
    msg: _msg,
    msg_catalog: _msg_catalog,
    msg_index: _msg_index,
    repeat_count: _repeat_count,
    distrib_admin: _distrib_admin,
    response_level: _response_level,
    probe_arg: _probe_arg within [
        'MAIL.Dead',
        'MAIL.TotalRouted',
        'MAIL.Waiting',
        'MAIL.Delivered',
        'MAIL.WaitingRecipients',
        'Mail.MinimumDeliverTime',
        'Mail.AverageDeliverTime',
        'Mail.MaximumDeliverTime',
        'Mail.MinimumSizeDelivered',
        'Mail.AverageSizeDelivered',
        'Mail.MaximumSizeDelivered',
        'Mail.MinimumServerHops',
        'Mail.AverageServerHops',
        'Mail.MaximumServerHops',
        'MAIL.TransferFailures',
        'MAIL.Transferred',
        'Mail.PeakByteTransferRate',
        'Mail.PeakMessagesTransferred',
        'Mail.PeakMessagesTransferRate',
        'Mail.PeakTotalBytesTransferred',
        'MAIL.TotalFailures',
        'Mail.TotalKBTransferred' ],

```

```

    prev_value: _prev_value,
    value: _value,
    effective_value: _effective_value,
    collection: _collection,
    info: _info,
    monitor: _monitor within ['Mail'],
    units: _units,
    relation: _relation,
    relation_delta: _relation_delta
  ],
  reception_action:
  (
    atomconcat(['Notes ', _probe_arg], _newmonitor),
    generate_event('APM_THRESHOLD',
      [
        status=_status,
        source=_source,
        sub_source='Lotus;Notes_Mail_Server;4.x',
        origin=_origin,
        sub_origin=_sub_origin,
        hostname=_adapter_host,
        adapter_host=_adapter_host,
        severity=_severity,
        date=_date,
        msg=_msg,
        msg_catalog=_msg_catalog,
        msg_index=_msg_index,
        repeat_count=_repeat_count,
        distrib_admin=_distrib_admin,
        response_level=_response_level,
        prev_value=_prev_value,
        value=_value,
        effective_value=_effective_value,
        collection=_collection,
        info=_info,
        monitor=_newmonitor,
        units=_units,
        relation=_relation,
        relation_delta=_relation_delta
      ]
    )
  )
).
/*

This rule will generate an internal APM_THRESHOLD event from a
Notes_Server_Available_Monitor event.

*/

rule:
gen_APM_thresh_for_server_avail:
(
  description: 'For incoming Notes_Server_Available_Monitor events, we \
    simply set the sub_source and monitor to force \
    correlation with the APM server.',
  event: _event of_class _class within ['Notes_Server_Available_Monitor']
  where [

```

```

status: _status outside ['CLOSED'],
source: _source,
sub_source: _sub_source,
origin: _origin,
sub_origin: _sub_origin,
hostname: _hostname,
adapter_host: _adapter_host,
severity: _severity,
date: _date,
msg: _msg,
msg_catalog: _msg_catalog,
msg_index: _msg_index,
repeat_count: _repeat_count,
distrib_admin: _distrib_admin,
response_level: _response_level,
probe_arg: _probe_arg,
prev_value: _prev_value,
value: _value,
effective_value: _effective_value,
collection: _collection,
info: _info,
monitor: _monitor,
units: _units,
relation: _relation,
relation_delta: _relation_delta
],
reception_action:
(
    generate_event('APM_THRESHOLD',
    [
        status=_status,
        source=_source,
        sub_source='Lotus:Notes-Mail-Server;4.x',
        origin=_origin,
        sub_origin=_sub_origin,
        hostname=_adapter_host,
        adapter_host=_adapter_host,
        severity=_severity,
        date=_date,
        msg=_msg,
        msg_catalog=_msg_catalog,
        msg_index=_msg_index,
        repeat_count=_repeat_count,
        distrib_admin=_distrib_admin,
        response_level=_response_level,
        prev_value=_prev_value,
        value=_value,
        effective_value=_effective_value,
        collection=_collection,
        info=_info,
        monitor='Notes Server Available',
        units=_units,
        relation=_relation,
        relation_delta=_relation_delta
    ])
)
).

```

Appendix C. Special Notices

This publication is intended to help services personnel or system administrators to install, customize, and use the Tivoli Manager for Domino to manage a Notes environment. The information in this publication is not intended as the specification of any programming interfaces that are provided by Tivoli Manager for Domino. See the PUBLICATIONS section of the IBM Programming Announcement for Tivoli Manager for Domino for more information about what publications are considered to be product documentation.

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Appendix D. Related Publications

The publications listed in this section are considered particularly suitable for a more detailed discussion of the topics covered in this redbook.

D.1 International Technical Support Organization Publications

For information on ordering these ITSO publications see “How To Get ITSO Redbooks” on page 233.

- *Lotus Domino Server Release 4.5 on AIX Systems: Installation, Customization, and Administration*, SG24-4694
- *An Introduction to Tivoli's TME 10*, SG24-4948
- *TME 10 Internals and Problem Determination*, SG24-2034
- *Getting Started with TME 10 User Administration*, SG24-2015
- *TEC Implementation Examples*, SG24-5216

D.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

D.3 Other Publications

These publications are also relevant as further information sources:

- *TME 10 Module for Domino User's Guide*, GC31-8504
- *TME 10 Module for Domino V1R5M0 Release Notes*, GI10-3060
- *TME 10 Enterprise Console User's Guide V3.1*, GC31-8506
- *TME 10 Global Enterprise Manager Documentation Kit*, SK3T-2196
- *Lotus Notes 4.5 Administrator's Guide*, SR23-7925

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>.

How IBM Employees Can Get ITSO Redbooks

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- **PUBORDER** – to order hardcopies in United States
- **GOPHER link to the Internet** – type `GOPHER WTSCPOK.ITSO.IBM.COM`
- **Tools disks**

To get LIST3820s of redbooks, type one of the following commands:

```
TOOLS SENDTO EHONE4 TOOLS2 REDPRINT GET SG24xxxx PACKAGE
TOOLS SENDTO CANVM2 TOOLS REDPRINT GET SG24xxxx PACKAGE (Canadian users only)
```

To get lists of redbooks:

```
TOOLS SENDTO USDIST MKTTOOLS MKTTOOLS GET ITSOCAT TXT
TOOLS SENDTO USDIST MKTTOOLS MKTTOOLS GET LISTSERV PACKAGE
```

To register for information on workshops, residencies, and redbooks:

```
TOOLS SENDTO WTSCPOK TOOLS ZDISK GET ITSOREGI 1996
```

For a list of product area specialists in the ITSO:

```
TOOLS SENDTO WTSCPOK TOOLS ZDISK GET ORGCARD PACKAGE
```

- **Redbooks Web Site on the World Wide Web**
<http://w3.itso.ibm.com/redbooks>
- **IBM Direct Publications Catalog on the World Wide Web**

<http://www.elink.ibm.com/pbl/pbl>

IBM employees may obtain LIST3820s of redbooks from this page.

- **REDBOOKS category on INEWS**
- **Online** – send orders to: `USIB6FPL` at `IBMMAIL` or `DKIBMBSH` at `IBMMAIL`
- **Internet Listserver**

With an Internet E-mail address, anyone can subscribe to an IBM Announcement Listserver. To initiate the service, send an E-mail note to `announce@webster.ibm.com` with the keyword `subscribe` in the body of the note (leave the subject line blank). A category form and detailed instructions will be sent to you.

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.htm>). 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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In Canada	caibmbkz at ibmmail	lmannix@vnet.ibm.com
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- **Telephone orders**

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List of Abbreviations

AMS	Application Management Specification
BAROC	Basic Recorder of Objects in C
BDF	Business Description File
CDF	Component Description File
GEM	Global Enterprise Manager
IBM	International Business Machines Corporation
ITSO	International Technical Support Organization
TEC	Tivoli Enterprise Console
TMR	Tivoli Management Region

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