

# **Universal Manageability: Enterprise Management Integration**

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## **International Technical Support Organization**

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International Technical Support Organization

# Universal Manageability: Enterprise Management Integration

December 1999

#### Take Note! -

Before using this information and the product it supports, be sure to read the general information in Appendix A, "Special Notices" on page 181.

#### First Edition (December 1999)

This edition applies to V1.0 of UM Services for use with the Windows NT operating system.

#### Note -

This book is based on a pre-GA version of a product and may not apply when the product becomes generally available. We recommend that you consult the product documentation or follow-on versions of this redbook for more current information.

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## Preface

This redbook will help you install, tailor and configure Universal Manageability (UM) Services to help manage your server and workstation environment. In addition to showing how to install and configure UM Services, this book walks you through the steps that are necessary to provide the integration to systems management frameworks. The frameworks that UM Services integrates with are Tivoli, SMS (both V1.2 and V2.0), CA Unicenter and Intel LANDesk.

This book can be used by systems integrators to help establish the framework for systems management. In addition, anyone building a new environment from scratch will greatly benefit from the step-by-step approach that is shown in the installation chapter.

### The Team That Wrote This Redbook

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

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

Julianne Bielski, Xiao Huang, Eric C. Rasmussen, Goran Wibran IBM RTP Development

#### **Comments Welcome**

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# Chapter 1. Universal Management Services

What is Universal Management (UM) Services? It is a set of services, based on the Windows Management Information specification, that provides systems management information on IBM ThinkPads, workstations and Netfinity Servers. UM Services works best on IBM hardware, but it runs on other OEM systems that support SMBIOS V2.0. The information provided by UM Services can be viewed from a Web browser (such as Internet Explorer or Netscape Navigator), a Microsoft Management Console (MMC) snap-in, or an upward integration module installed on top of an enterprise or workgroup management product.

This redbook describes how to install and use the features of UM Services, as well as its integration with other enterprise management products, such as LANDesk Management Suite, Tivoli Enterprise, Microsoft SMS and CA Unicenter TNG.

One of the ways that UM Services is able to interface with so many systems is that it takes advantage of industry standards (DMI, SNMP and CIM) to interact with these subsystems.

### 1.1 Environment

It did not take a complex environment to show how to access the UM Services functions and the data it captured. The actual functions and data are somewhat independent of the hardware. While there is a specific list of hardware that is supported, the methodology used remains the same.

We used Netfinity 3000 Servers and IBM PC 300 PL workstations as our main systems to show all the functions. For an operating system environment we used Windows NT with Service Pack 4 (and in some cases with Option Pack installed).

# Chapter 2. UM Services Installation and Operation

💥 IBM Enterprise - Netscape <u>File Edit View Go Communicator Help Yahoo!</u> 5 6 4 My. Ć гĽ, Ð. Reload Home Search Netscape Print Back Security Shop 🏹 🚺 Bookmarks – 🦺 Location: http://www.pc.ibm.com/ww/solutions/enterprise/sysmgmt/products.html 🚴 Instant Message 関 WebMail 関 Contact 関 People 関 Yellow Pages 🖳 Download 関 Find Sites 📹 Search 🔹 🕕 🗥 Sookmarks 🔊 My Yahoo! 🔹 🖂 Y! Mail 🔹 🛷 News 🔹 🏠 Ent 🏹 👬 🍳 11 ~ \* Home News | Products | Services | Solutions | About IBM ShopIBM Support Download Search Go PC Products Universal Manageability (UM) Enterprise Products/Downloads Enterprise Home Computer Life Cycle Total Cost Integration of Ownership Standards <u>Universal</u> Products/Downloads <u>Manageability</u> Lifecycle Care Case Studies Alert on LAN™ Netfinity Manager<sup>™</sup> Library <u>AssetCare™</u> Norton AntiVirus (OEM Edition) Support <u>AssetID</u><sup>(1)</sup> PC Doctor for UM Services <u>CMOS Configurator</u> Predictive Failure Analysis ConfigSafe® ServerGuide SMART Reaction II CoSession Remote for UM **PC Products** Services System Migration Assistant UM Desktop Extensions Home Worldwide EZ Admin UM Server Extensions LANClient Control UM Services Manager™ (LCCM) Netfinity Director Wake on LAN®

The UM Services installation code can be downloaded for free from

http://www.pc.ibm.com/ww/solutions/enterprise/sysmgmt/products.html.

Figure 1. UM Services Free Downloads

You can download UM Services, UM Desktop Extensions, UM Services Plus for Tivoli Enterprise, and a UM Services image that can be remotely installed without user interaction using the default configuration. Select Product UM Services UM Services UM Desktop Extensions After you have dUM Services Plus-Tivoli your hard drive. UM Services Image using a software as Microsoft SMS.

Figure 2. Download Options

### 2.1 Installation

The installation structure for the Universal Manageability Services (UM Services) and the Plus module is quite simple.



Figure 3. Unzipped Installation Directory

Before installing UM Services you should read this book as well as the PDF that is distributed with the product. To install UM Services you should click the setup program **setup.exe**. It is a typical InstallShield-type installation process.

Setup	×
æ	IBM Universal Manageability Services Setup is preparing the InstallShield(r) Wizard which will guide you through the rest of the setup process. Please wait.
	100 %

Figure 4. InstallShield Wizard

After the InstallShield Wizard sets up its environment you can page through the welcome, language and license agreement screens by clicking **Next**. When you get to the setup options you need to determine if this installation is a stand-alone UM Services install or if it's being installed on a system that has a supported upward integration management module (Tivoli NetView, CA Unicenter and SMS). The following install process is for the stand-alone version. The Workgroup/Enterprise integration installations are shown in separate chapters.



Figure 5. Management Integration or Services

We clicked the first option to install UM Services. That presented us with the following installation options:



Figure 6. UM Services Components

Since we did not have Intel LANDesk installed on this system we left that box unchecked. If we had it installed, checking that box would install LANDesk's Common Base Agent (CBA). If a user already has the CBA installed on the system, then he or she should not check this box.

In addition, the Tivoli Management Agent should only be checked in an environment where the use has deployed the Tivoli Enterprise product. The default is for it not to be checked and installed.

If you select Web Based Remote Control you should respond No to the prompt for Netfinity Director's remote control program since you should not have them both on the same system.

Since the system detected that we had SNMP already installed it selected that option for us.

After you select your options you are given the opportunity to select the directory in which the services code will be installed. Following that you are prompted for a user ID and password for Web access. Be sure to check with your systems administrator so that you don't give away higher authorizations than necessary. In this case, our systems administrator and our Web administrator were the same person so we used the *administrator* user ID.

You can leave the default port (411) as the one that you will use to access the UM Services data. If you change it you will need to remember the new port number when you access the system using a Web browser or the Microsoft Management Console (MMC). We recommend that you stick with the default port and use the same port for each system so it is easier for your administrators. If you do change the port after installation has occurred be sure to notify everyone who accesses the systems.

If you forget which port you chose you can look in \winnt\umsclients.ini:

[HTTP Port] barryps2=411	

Edit Data	×
	Please enter the administrator's User ID and Password for Web access to the Universal Manageability Services.
	User ID administrator
	Password
<u>S</u>	Confirm Password
	IP Port number for Web access to Universal Manageability Services (default is 411):
	< <u>B</u> ack <u>N</u> ext > Cancel

Figure 7. Web User ID

Click **Next** and the next window asks you if you want to update your start menu. To add it click **Yes**. In some environments it is not desirable to have this on the start menu. You should probably specify no on all systems other than administrator systems.



Figure 8. Updates to the Start Menu

In addition to installing the code options that we mentioned, interfaces for components like WBEM and Tivoli are automatically provided.

Installing Tivoli Remote Control	Installing Java Support
Installing WBEM core components	Installing Netfinity Director Support (this may take several minutes)
Installing Tivoli Remote Control	

Figure 9. Component Installation

Shortly after that you are prompted to reboot your system. Before doing that you might want to take a look at some of the log files that are created. For example, in c:\winnt\system32 the file twginst.log is created to show the Netfinity Director agent installation results:

6-23-1999 11:18:29 ==================================	
6-23-1999 11:18:29 Install of Tivoli IT Director Agent started	
6-23-1999 11:18:29 Installing from C:\TEMP\ ISIMP5.DIR\NFD\EN\	
6-23-1999 11:18:29Unattended Install in progress	
6-23-1999 11:18:29 TwqCheckISRequirements returned 0	
6-23-1999 11:18:29 TwgInitializeIS returned 0	
6-23-1999 11:18:29 Exe = NET; Parm = STOP TWGIPC; Launchr = 1	
6-23-1999 11:18:30 Program returned 2	
6-23-1999 11:18:30 Uncompressed the verification routines.	
6-23-1999 11:18:30 TwgGetTemporaryFiles returned 0	
6-23-1999 11:18:30 Installing version 210090615	
6-23-1999 11:18:30 TwgWelcomeDlg returned 0	
6-23-1999 11:18:30 TwgLicenseDlg returned 1	
6-23-1999 11:18:30 User specified TargetDrive: D	
6-23-1999 11:18:30 User specified Target Directory: \Program Files\IBM\UMS\Di	
rector	
6-23-1999 11:18:30 TwgUninstSpace returned 0	

There is another log file that is interesting that is in c:\winnt\system32\WBEM\Instcore.log. A piece of its contents follows:

Title:
Source: E:\ROADRU~1\RR\wbemcore.exe
Execute Path: C:\WINNT\System32\WBEM\wbemstop.exe
Execute Path: C:\WINNT\System32\WBEM\WinMgmt.exe /unregserver
Execute Path: C:\WINNT\System32\WBEM\unsecapp.exe /unregserver
***Start WBEM Core***
Made Dir: C:\WINNT\System32\WBEM
File Copy: C:\WINNT\System32\WBEM\cimwin32.dll
File Copy: C:\WINNT\System32\WBEM\cimw32ex.dll
File Copy: C:\WINNT\System32\WBEM\fastprox.dll
File Copy: C:\WINNT\System32\WBEM\framedyn.dll
File Copy: C:\WINNT\System32\WBEM\stdprov.dll
File Copy: C:\WINNT\System32\WBEM\wbemcore.dll
File Copy: C:\WINNT\System32\WBEM\wbemess.dll
File Copy: C:\WINTSystem32\WBEM\wbemprox.dll
File Copy: C:\WINNT\System32\WBEM\wbemcomn.dll
File Copy: C:\WINNT\System32\WBEM\WinMgmtR.dll

You should also look through the odbc.ini and odbcinst.ini files as well.

IBM Universal Manages	ability Services Setup Complete IBM Universal Manageability Services installation is complete. You can restart your computer now, or restart it later. Choose below. Remove any disks from their drives, and then click Finish to complete Setup.
	<ul> <li>Yes, I want to restart my computer now.</li> <li>No, I will restart my computer later.</li> </ul>
<b>*</b> *	Please note, if you Reinstall your web browser at a later date, it may be necessary to Reinstall the Java VM included with this product. Refer to the release notes for further information
	< Back Finish

Figure 10. Restart Your System

#### 2.1.1 Launching the UM Services Browser

One way to launch the UM Services browser is from the start menu as shown in the following figure:

	- Inclusion and the second sec	
🤠 IBM Universal Manageability Services	IBM UM Services Brow	vser
🧓 License Use Runtime	•	
Lotus Applications	•	
🦲 Netfinity	•	

Figure 11. Start Menu Used to Launch the Browser

After you click on the start option you have to enter the correct user ID and password to access UM Services. Note that the port number is the same as the one you chose during the installation phase (411).

Username and Password Required		
Enter username for IBM UMS at localhost:411:		
User Name:		
Password:	-	
OK Cancel		

Figure 12. UM Services User ID

In our case we used the *administrator* ID. Our Web browser was Microsoft Internet Explorer V5.0. In addition to responding to the user ID and password there were several prompts to verify the scripts that were running. These scripts are used to build the interface. The reason that we were prompted for this was that we had a high security setting in place on our Internet Explorer.



Figure 13. Certificate Authentication

After responding Yes to several prompts the full UM Services window appeared:

🗿 localhost - Microsoft Interne	Explorer provided by Snap.com	
Eile Edit View Favorites Iools Help Snap.com		
Grack Forward Stop	Refresh Home Search Favor	] 🧭 🛃 - 🎒 💣 ites History Mail Print My Snap
Address 🛃 http://localhost:411/ir	idex2.html	¥
iem. 🗖	Next System	
Information Tasks Basic PC Information		
iocalhost ⊡@nventory	Processor	Intel Pentium II or Pentium II Xeon processor
Basic system		350MHz
Drives	Cache	Internal L1 Cache (32k)
		Internal L2 Cache (512k)
	BIOS	Default System BIOS
🔤 🖾 Operating system		IBM BIOS Ver NTKT14.0
		8/21/98
🖻 🗠 🥶 Monitors	Memory	261,544Kb RAM
Event Viewer	Expansion slots	PCI (3)
🔤 🖾 System Health		ISA (3)
	Operating system	Microsoft Windows NT Server
		4.0.1381
		Service Pack 4
	Storage	SCSI Fixed Disk (4298Mb)
		CD-ROM
	Video	S3 Compatible Display Adapter
	Audio	Crystal Audio System Playback
	Communications	IBM PCI Token-Ring Adapter

Figure 14. UM Services Using Internet Explorer V5.0

After verifying that we could access the data with Internet Explorer V5.0 we proceeded to try Netscape. Before the Netscape browser could successfully access the data there were some Java-type modifications that needed to take place as shown in the following window:

🧴 🍕 Bookmarks 🎄 l	Location: http://localhost:4	/umsinstall.html 💽 🕼 What's Related		
📕 🖳 Instant Message 🗳	🕽 WebMail 📲 Contact	🖳 People 🖳 Yellow Pages 🖳 Download 🖳 Find Sites 🗂 Channels		
UMS Java library	installation			
UMS requires the insta	llation of two Java cla	bibraries. One or more of the required libraries were <b>not</b> found on your system.		
download the necessar	y files. After download	played support level is shown in red, please click on the corresponding link to ng each file, execute it to install the support library. You will then need to restart Jindows 95/98 users must restart the computer for changes to take effect.		
If you are using Interne	et Explorer, you must h	we the Internet Explorer 4 Service Pack 1 or greater.		
Swing/JFC support:	none	Download Swing/JFC installer		
XML support:	none	Download XML installer		
If you are not running on a Win32 (Windows 95, 98 or NT) computer, you will need to download the support files ( <u>Swing/JFC</u> and/or <u>XML</u> ) and manually add them to your <i>CLASSPATH</i> environment variable.				

Figure 15. UM Services Java Libraries Required

Just download the two files and run them. They will automatically install. The only trick is if you are using Netscape as your default browser you should make sure

that you access UM Services with Netscape first to install the Java libraries. You can then shut down Netscape and make IE your default browser. Then start it up and install the Java libraries in the same manner. The two files that you download are called *swingall.exe* and *xml4j.exe*.

A third way to access UM Services is by using the Microsoft Management Console (MMC). When you install the MMC interface you get a prompt to acknowledge the license agreement. If you install the MMC as part of the Windows NT Option Pack you won't have to install it separately.

#### 2.1.2 Accessing the Data

Once we installed the Java updates we were able to use Netscape to access our UM Services data. Netscape V4.5 is the minimum requirement and we used that plus Netscape V4.6, V4.6.1 and V4.7 on the Windows NT platform.

💥 9.89.41.190 - Netscape					
File Edit View Go Communical	or Help				
Back Forward Reload	Home Search	My Netscape	A Print Security	Stop	
🚪 🦋 Bookmarks 🎄 Location	http://9.89.41.190:4	11/index3.html			▼ (*)*
🛛 🖳 Internet 🖆 Lookup 📹	, New&Cool 🖳 my.j	/ahoo.com/up	🖳 www.microsoft.c	🖳 www.software.ib	🖳 My Yahoo! n
ibn. 👼	Next System				6
Information Tasks					
9.89.41.190 □ □ □ □ 1000000000000000000000000000000			Basic PC Info	ormation	
Basic system	Proc	essor	Intel Pentium II or 350MHz	Pentium II Xeon proc	essor 🔺
🔤 🖳 Memory	Cach	e	Internal L1 Cache	(32k)	
🔤 🔤 Multimedia			Internal L2 Cache	(512k)	
🔤 Operating system	BIOS		Default System BI		
E			IBM BIOS Ver NTk	CT14.0	
Event Viewer			8/21/98		
System Health	Mem		261,544Kb RAM		
Gysterin realth	Expa	nsion slots	PCI (3)		
			ISA (3)		
	Oper	ating system	Microsoft Window	s NT Server	
			4.0.1381		
			Service Pack 4		
	Stora	ige	SCSI Fixed Disk (	4298Mb)	
			CD-ROM		
	Video	-	S3 Compatible Di	1 / 1	
	Audio	-	Crystal Audio Syst	,	
	Com	nunications	IBM PCI Token-Ri		
			00:06:29:84:82:47		<b>•</b>

Figure 16. Main UM Services Wwindow on Netscape

In the left-hand pane of the window there are two lists of functions that are available to use. There is an Information list and a Tasks list.



Figure 17. UM Services Information and Tasks for a Netfinity 3000

#### 2.1.2.1 Tasks

If your hardware supports Alert on LAN (AOL) you can set up the configuration from a Web browser or from MMC. With the click of a button or two you can quickly (and remotely) perform the configuration. Just update the fields and click **Apply**.

**Note:** The initial release of UM Services did not support Alert on LAN, but as of November 1999 that support was provided.

iem. 🧧	Next System			•
Information Tasks	Alert T	ransmission Status	Hardware V	ersion: missing datum
Calhost		C Enabled	System ID:	missing datum
🖻 🥶 Configuration		Oisabled	System UU	ID: missing datum
	Proxy	server IP Address:		missing datum
	Proxy	Server UDP Port:		missing datum
User Security	Heart	peat Timer Period (second	ls):	missing datum
Shutdown	Watch	dog Timer Period (second	is):	missing datum
System Updates	Retrar	nsmission Timer Period (s	econds):	missing datum
	Agent	Polling Period (seconds):		missing datum
	Alert o	n Lan (tm) is a result of th	e Intel-IBM Adv	anced Manageability Alliance and a trade
				Apply

Figure 18. Alert on LAN

There is some hardware information that is automatically gathered for you for the systems that have the UM Services installed. Some of the tabs are informational and some of them have fields that you can update. For example, you can click the **User** tab and add the user's phone number.

iem. 🙍	Next System	<b></b>
Information Tasks	Serialization System User Lea	ase Asset Personalization Warranty
Alert On LAN	Name	Serial Number
Date & Time	Processor 0	11S01K2053ZJ15MK88704V
Network	Hard Drive 0	DDRS-34560WRDFA0039
SNMP	Memory Socket 0	073020983130001487
user Security ⊡©¶ Tools	Power Supply 0	J15D1489PE4
Remote Control	System	23M1809
🔤 🖾 Shutdown	Motherboard	11S20L0939ZJ16BH52953A
🖻 🥎 Web Links		

Figure 19. Asset Information

You can change the date or time of any system that has the UM Services code installed. That is useful when the clocks change or if you need to do some testing with a scheduling function.

iem. 📮	Next System	
Information Tasks Iocalhost Configuration Alert On LAN Asset ID Asset ID A Date & Time Network SNMP Configuration Remote Control Shutdown Shutdown Web Links System Updates	Date June 23 🔶 1999 🔶	Time 11:59:41 AM

Figure 20. Change the Date or Time

The Network task has TCP/IP binding information for the adapters that are in the machine. This information is read-only.

Information Tasks	P Address DNS	
Configuration Alert On LAN Asset ID Date & Time Network R SNMP	Adapter	er 💌
□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	IP Address	9. 89. 41.190
🗄 😋 Web Links	Subnet Mask	255.255.248. 0
	Default Gateway	9.89.40.1
	MAC Address	00:06:29:84:82:47

Figure 21. TCP/IP Bindings

The SNMP information (assuming you had already installed SNMP on the system) has the community name and the destination addresses for traps. The updates to this window are the same as the updates you can perform locally.

The User Security item provides you with access to the Windows User Manager functions. By default, it only sees the administrator ID. You can add or remove IDs using this function.

The User Security service provides four levels of access:

- 1. Administrator
- 2. Browser
- 3. Power User
- 4. User

An administrator can get or set data from every service and add users. Everyone else can browse but not change settings or save data.



Figure 22. User Administration

In the Tools section of the Tasks list you might just see the Remote Control and Shutdown tools. If you don't see the DMI Information link than it indicates that you

have not started the DMI-related service (win32sl). Go into the Services function and start it or issue the start win32sl command from the DOS prompt.

er <u>v</u> ice	Status	Startup	_	Close
Tivoli IT Director Support Program	Started	Automatic		
Tivoli Object Dispatcher		Automatic		<u>S</u> tart
Tivoli Remote Control Service	Started	Automatic		
Tivoli Remote Execution Service		Automatic		S <u>t</u> op
TME10RC	Started	Automatic	l l r	Baura
UMS HTTPServ 📉 📉	Started	Automatic		<u>P</u> ause
UPS		Manual		Continue
win32sl	Started	Manual		20101000
Windows Management	Started	Automatic		Sta <u>r</u> tup
Workstation	Started	Automatic	<u> </u>	otajtup
				H <u>W</u> Profiles
itartup Parameters:			-	

Figure 23. Start DMI

You should see the DMI Information task appear if you refresh or restart your Web browser.



Figure 24. DMI Task Added

A sample of some of the information you can access is shown below:

ComponentID Service Layer	ComponentID
Characteristics Service Layer	Manufacturer: Intel Corporation Product: Win32 DMI Service Provider
SP Indication	Version: Intel DMI Service Provider (Win32) V2.54 Serial Number: unsupported
Subscription SP Filter	Installation: 19990625073814.000000-300 Verify: component exists, functionality good
Information	veniy. component exists, functionality good
	Service Layer Characteristics
	Win32 DMI Directory: C:\DMI\Win32\MIFDB
	Max attributes set before backup: 200 Max time (in millisec) before backup if at least one attribute was
	set: 300000

Figure 25. DMI Information

UM Services does *not* provide any DMI instrumentation. It is there for backward compatability only. Certain UM desktop extensions use DMI instrumentation and in those cases, the browser will show more than just information about the service layer.

You can set up the remote control monitoring functions using the Web browser. The options you can choose are shown in the following figure:

Information Tasks	Access type	Monitor
Configuration	Grace period	0 💌
	Proceed if timeout	• Yes () No
SNMP	Change state on Target	🔿 Yes 💿 No
⊡ - 🤤 Tools 	Desktop optimization	🖲 Yes 🔿 No
E-C Web Links	Color reduction	🔿 16 🔿 256 🖲 Nothing
System Opdates	Enable compression	● Yes ○ No
	Refresh rate	100
		Cancel Apply

Figure 26. Remote Control

When you click the Start session button access to the UM Services begins.

On the service you see the following window:

💶 Tivoli Remote Control (Target) 🛛 🔀				
Change Session State	OK			
O <u>A</u> ctive	Cancel			
• Monitor	Help			
O <u>S</u> uspend				
O T <u>e</u> rminate				

Figure 27. Remote Control

On the system that has your Web browser that issued the start session you see the following window:

💥 Tivoli Remote Control Session	- [barryps2.ibmus2.ibm.c 💶 🗖 🗙
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
<mark>涨 localhost - Netscape</mark> <u>File Edit ⊻iew Go</u> ommunicat	scape or <u>H</u> elp
Back Forward Reload	🚮 🧟 📩 Home Search Netscape F
🕺 💕 Bookmarks 🎄 Location	http://localhost:411/index3.html Mail 🖾 Contact 🖾 People 🖾 Y
iem. <mark>S</mark>	Next System
Information Tasks	ComponentID Service La Characteri Service La Security Change Session St Security
	= 🔆 🌭 🔊 🖾 🏑 //

Figure 28. Tivoli Remote Control Session

You can also shut down the UM Services system or log off the current user by clicking the **Shutdown** task.



Figure 29. System Shut Down

The last task that we used was the one for System Updates. That task will launch a new Web browser window and automatically take you to the IBM Web pages that show you what updates are available for the hardware configuration on which you have installed UM Services.



Figure 30. System Updates

If you click **Drivers** you can see what information is available. You can download new drivers, read FAQs, get information about the hardware and software for that system type as well as access some online publications.

If you click **Profile** than you can build a profile for that system so that you can be informed of future updates via e-mail. We recommend that you set up a profile for all your hardware and that you initially access the drivers to make sure your systems are up to date.

IEM . Home   News   Products   Sen		About IBM	1		Support Download
2	Search		in	Support 🔽 🗔	Advanced Search
	PCSupport	<u>Login</u>	<u>Update Profil</u>	le <u>My Page</u>	<u>Help</u>
IBM Netfinity and PC Server	Netfin	ity 3000	8476	5 21U St	ipport
<u>Overview</u>	Hello barry	1			
How to Buy					
Support	Current Mad	chine		Other Profiled N	lachines
Knowledge Base	Family	Net	finity 3000		
Discussion Forums	Type-Model		8476-21U	8476-31U Netfini	tγ 3000  📐
	Specs	PII 350MHz (512 RAM 4.51GB SCSI PCI/ISA M	HDD U/W lini-Tower	8476-31U Netfini 2645-4AU ThinkF	
<u>Quick Path</u>			(6×6)		
Enter type-model					
Go	Technical In	formation			
	Downloa	dable files			44
	▶ <u>Frequent</u>	ly asked question	<u>s</u>		4
Server 💌	▶ <u>Hints an</u>	<u>d tips</u>			59

Figure 31. IBM Personal Computing Support

#### 2.1.2.2 Information

When you click the **Information** tab there is a lot of system-type information you can access. In Figure 14 on page 10 you can see the main page that you get when you access the tab. It includes hardware and software information. If you want to get more specific information you can click the other fields. For example, when you click **Drives** you get information about your local hard drives as well as some information about your LAN drives, CD-ROM and diskette drive. You can easily see how much space is being used on any of the local drives.

Information Tasks	Logical Drives Physical Drives				
😋 localhost 🔽	Name	Туре	Capacity	Free space	
E System	A:	3 1/2 Inch Flop	0 KB	0 KB	
	O:	Local Fixed Disk	1.00 GB	621 MB	
	D:	Local Fixed Disk	1.99 GB	955 MB	
🔤 Multimedia	E:	Local Fixed Disk	1.19 GB	500 MB	
Operating system     Ports	F:	CD-ROM Disc	0 KB	0 KB	
🗄 🔄 Monitors	J:	Network Conn	Unknown	Unknown	
🔤 Event Viewer	K:	Network Conn	Unknown	Unknown	-
		Drive	📕 Usec	i space (39%) space (61%)	

Figure 32. Hard Drive Information - Used and Free Space

The memory option shows you what type of memory and how much of it is currently installed. In addition, you can see what your options are for upgrading the system.



Figure 33. Memory Options

You can display information about the audio and video ports on the system as well as operating system information. You can access information about the current service pack installed, the license key, a current process list, the drivers that are installed on the system and the services that are started.

Operating system	Process Drivers Services	
Name	Microsoft Windows NT Server	
Version	4.0.1381	
Service pack	Service Pack 4	
License key	70234270077497156095	
Build type	Uniprocessor Free	

Figure 34. Operating System Information

If you click Ports you get information about all the ports on the system.

nformation Tasks		Ports	
🖹 😋 Inventory	Port name	Connector type	Port type
🔤 🗟, Basic system	COM 1	DB-9, Male	Serial Port 16550A Co
. Memory	COM 2	DB-9, Male	Serial Port 16550A Co
🔤 🔍 Multimedia	Mouse	Mini-DIN	Mouse Port
	Keyboard	Mini-DIN	Keyboard Port
∃ 🔄 Monitors	USB 0	Unknown	USB
Event Viewer	USB 1	Unknown	USB
🖾 🗟, System Health	Parallel Port	DB-25, Female	Parallel Port ECP/EPP
	Ethernet	RJ45	None
	Microphone	Unknown	None
	Audio Line In	Unknown	None
	Audio Line Out	Unknown	None

Figure 35. Ports

Under Monitors you can view all the events (system, security and application). In addition, if you click **System Health** you are provided with the following status:

iem. 🗖	Next System		
Information Tasks			
😋 localhost	Health	Description	Time
🖻 😋 Inventory	Normal	deviceid="voltage0"	05/23/99 12:10:13 PM
🔤 🔤 Basic system	Normal	deviceid="voltage1"	05/23/99 12:10:13 PM
Drives	Normal	deviceid="voltage2"	05/23/99 12:10:13 PM
🔤 Memory	Normal	deviceid="voltage3"	05/23/99 12:10:13 PM
🔤 Multimedia	Normal	deviceid="voltage4"	05/23/99 12:10:13 PM
Operating system     Ports	Normal	deviceid="voltage5"	05/23/99 12:10:13 PM
E- Constant	Normal	deviceid="voltage6"	05/23/99 12:10:13 PM
Event Viewer	Normal	deviceid="fan0"	05/23/99 12:10:13 PM
System Health	Normal	deviceid="fan1"	05/23/99 12:10:14 PM
	Normal	deviceid="fan0"	05/23/99 12:10:14 PM
	Normal	deviceid="fan1"	05/23/99 12:10:14 PM
	Normal	deviceid="\\.\physicaldrive0"	05/23/99 12:10:14 PM

Figure 36. System Health

# Chapter 3. SMS 1.2 Upward Integration Module

Microsoft Systems Management Server (SMS) is part of the Microsoft Backoffice package offering solutions for software and hardware inventory, software distribution and remote troubleshooting tools. We used V1.2 with Service Pack 4 installed. Also, SMS needs SQL server to store the information and we used SQL 6.5 with its Service Pack 4. Chapter 4, "SMS 2.0" on page 63 discusses V2.0 of SMS.

#### 3.1 Requirements

According to Microsoft, the minimum hardware and software required to install the Microsoft Systems Management Server V1.2 is:

- Pentium 133 or higher processor
- 64-96 MB of RAM (128 MB of RAM recommended)
- 1 GB available hard disk space
- Microsoft Windows NT Service Pack 3 or later
- Microsoft SQL Server 6.5 with Service Pack 4 or later

**Note**: SMS needs to be installed on a Windows NT domain controller (PDC or BDC). The SMS server needs to be installed in the same machine as SQL server. In addition, you must install the upward integration module onto the SMS 1.2 server.

#### 3.2 Installing the Upward Integration Module for SMS

After downloading the UM Services code and unzipping it into a single directory as shown in 2.1, "Installation" on page 4 run, setup.exe.

🔍 Exploring - Install					ı ×
<u>File Edit View Iools H</u> elp	<u>*</u>	<u> </u>			
All Folders	Contents of 'Install'				
🚵 Desktop 🛛 🔺	Name	Size	Туре	Modified	
🖻 🧏 My Computer	🔊 dmi	6,760KB	Z File	5/13/99 1:00 AM	
🕀 🚽 3½ Floppy (A:)	💽 intel	91KB	Paint Shop Pro 5 Im	9/23/98 7:45 PM	
🗄 🥁 (C:)	📄 lang.dat	5KB	DAT File	5/30/97 2:31 PM	
🕀 🥁 (D:)	📄 layout.bin	1KB	BIN File	2/9/99 8:05 PM	
E:)	😼 m1plus	308KB	Application	5/13/99 1:00 AM	
	📓 Master	3KB	Configuration Settings	5/13/99 1:00 AM	
itation in the second	🚰 MSJavx86	6,448KB	Application	5/13/99 1:00 AM	
tesarr	📄 nfdagent	13,312KB	Z File	5/13/99 1:00 AM	
manuals	os.dat	1KB	DAT File	5/6/97 5:15 PM	
in mandais	Remote	2,720KB	Z File	5/13/99 1:00 AM	
	Setup 🗲 🗕	- 45KB	Application	5/13/99 1:00 AM	
socks	- 🐻 Setup	1KB	Configuration Settings	5/13/99 1:00 AM	
🛅 temp	🚯 Setup	153KB	Internet Communicati	5/13/99 1:00 AM	
🖃 🧰 Ums-last	📄 setup.iss	1KB	ISS File	5/13/99 1:00 AM	
😟 🗀 UMS PLUS FOR TIVOLI	🗐 Setup	1KB	Text Document	5/13/99 1:00 AM	
🖻 💼 Win32	📓 Setup.lst	1KB	LST File	5/13/99 1:00 AM	
🖻 😋 İnstall	🛋 setup.pkg	6KB	PKG File	5/13/99 1:00 AM	
🔂 Smb	🗐 Setup	1KB	Text Document	5/13/99 1:00 AM	
Windows					۶
33 object(s) (plus 2 hidden) 52.8MB (Disk free	space: 1.92GB)				

Figure 37. The setup.exe Location

The next screen is the Welcome Screen. Just click **Next**. Then, the setup process will ask which language to use. In our case we clicked **English**. After that you are prompted with the license agreement information.

After these initial screens you have to choose what setup type is right for your environment. Since you are going to install the *upward integration module (UIM)* for SMS you need to choose the second button.

Setup Options			×
	Select a setup ty		
		< Back Next > Cancel	

Figure 38. Installing the UIM for SMS

After clicking **Next**, you have to choose which UIM is to be installed. Click **SMS Upward Integration**.



Figure 39. Choosing the UIM

After that, the system will ask with which version of SMS you plan to integrate. For this chapter we used SMS V1.2.



Figure 40. Choosing the SMS Version

After that, you receive a successful installation message and you need to restart the system.

### 3.3 Discovery

After installing the UIM for SMS, Microsoft SQL Server V6.5 and SMS 1.2 with Service Pack 4, we configured a client machine. Our environment was very simple: one server with SMS and SQL Server installed. Also, we installed UM Services with the UIM for SMS. The client machine was configured with the UM Services agent and the SMS client.



Figure 41. SMS Environment

To install SMS you may have to run (on the client machine) the program runsms.bat, located on the server in the directory \SMS\Logon.srv\. You have to map the server directory to be accessed by the client.

From the client machine, click with the right button the **My Computer** icon. Choose **Map Network Drive**. A new screen appears. Choose one drive letter in the first field. Then you need to know the domain and the name of the SMS server. You can select the computer from a list of Shared Directories. In our case, the domain was SMSDOM and the computer name was NTSRV101. The batch file that we need to run is on the Shared Resource called *SMS\_SHRD*. By clicking this folder, the path field gets filled in.

Map Networ	k Drive		×
<u>D</u> rive:	H:	•	OK
<u>P</u> ath:	\\NTSRV101\SMS_SHRD	•	Cancel
Connect As:			<u>H</u> elp
	☑ <u>R</u> econnect at Logon		
Shared Direct	tories:	☑ Expansion	pet by Default
	SDOM NTSRV101		
	NETLOGON	Logon server share SMS Site SS0 05/2	
	SMS_SHRD	SMS Site SS0 05/2	20/99
🛛 🎒 📈	E SMS_SITE WTR05311 DRKGROUP	SMS Site SS0 05/2	20/99
	RDM RNTDM		-
	TINTOM		

Figure 42. Mapping the SMS Server's D Drive

After that, click **OK** and open a DOS window. Change the drive to the drive that you have mapped (in our case, H:) and change the directory to \logon.srv.

Then, run the file runsms.bat.

🔀 Command Prompt - runsms 📃 🗆 🗙
Microsoft(R) Windows NT(TM) (C) Copyright 1985-1996 Microsoft Corp.
C:\>h:
H:\>cd sms
H:\SMS>cd logon.srv
H:\SMS\logon.srv>runsms
Microsoft Systems Management Server (SMS)
Installing Microsoft Systems Management Server on this client
Microsoft Systems Management Server has been successfully installed. Re-start your machine for all newly installed components to run and function properly.
Press any key to continue > [ 8]

Figure 43. Running the runsms.bat File

After installing the client, a screen gets displayed and you need to fill in some fields about the machine.

File Edit Help	FO.XNF
Form: User Infor	mation 🔽 📑 🖪 🕅 🤋
Name:	wtr05311
Email:	w@w
Phone number:	(999)999-9999
Department:	ITSO
Building:	ІВМ
Office:	e102-b
	NUM

Figure 44. Filling in Data about the Client Machine

The data gets stored at the server (in an SQL server database) and can be accessed by the SMS administrator. The system will ask to reboot the machine in order to enable remote control and start two services: SMS Client Inventory and SMS Remote Control Agent.

	Status	Startup		Close
Remote Procedure Call (RPC) Locator	- · · ·	Manual		
Remote Procedure Call (RPC) Service	Started	Automatic		<u>S</u> tart
Server	Started	Automatic		
SMS Client Inventory	Started	Automatic		S <u>t</u> op
SMS Remote Control Agent	Started	Automatic		Prove
SNMP	Started	Automatic		Pause
SNMP Trap Service	Started	Automatic		Continue
Spooler	Started	Automatic		Continue
System Event Notification		Manual		C1 - 1 -
Task Scheduler	Started	Automatic	-	Sta <u>r</u> tup
				H <u>W</u> Profiles

Figure 45. Services Started by SMS Client

One of the services, the SMS Remote Control Agent, needs to have permission to take control of the desktop. Clicking the **Startup** button at the Services screen shows the logon characteristics. The box *Allow Service to Interact with Desktop* must be checked to allow the SMS server to take control of the client machine.

Service	×
Service: SMS Remote Control Agent	
Startup Type © Automatic	ОК
	Cancel
© Disabled	
	<u>H</u> elp
Log On As:	
System Account	
Allow Service to Interact with De	sktop
Ihis Account:      Eassword:      Confirm      Password:	
1 0000010.	



At that point the SMS client installation is complete. From the SMS server, launch the **SMS Administrator**.



Figure 47. Launching the SMS Administrator

The first screen calls the login process to access the SMS Administrator. Enter the user ID and the password.
Microsoft SMS Administrator Login	×
<u>S</u> QL Server Name:	OK
NTSRV101	Cancel
Database:	Help
SMS	
Login ID: sa	
Password:	

Figure 48. Logging In the SMS Administrator

After logging in, you have to choose an SMS window to work from. If you choose the Sites window, you can see detailed information about the environment (domains and machines).

en SMS Window	
Window Type:	OK
🐅 Sites 🔼	Cancel
陷 Jobs	<u>-</u>
🗂 Packages	<u>H</u> elp
🔊 Queries	
N Alerts	
🚊 Machine Groups	
🕼 Site Groups	
📅 Program Groups	
🔄 Events 💽	
Description	
The Sites window displays a hierarchical view of sites, domains, and machines in your SMS installation.	
□ <u>S</u> ho <del>w</del> this dialog at startup	

Figure 49. Choosing the Sites

After choosing Sites, you can see the Site (it was created during the SMS installation), the domains in the Site and the computers in the domain.

**Note:** For more information about the SMS Server installation, see the redbook *Universal Management Agent: Functions and Integration,* SG24-5294.

ங Sites						_	□×
Solution (1997) (19977) (19977) (19977) (1997) (1997) (1997) (1997) (1997) (199		Name	SMSID	LogOn Name	SystemType	SystemRole	
🛛 🖾 🛃 SMSDOM	۲	NTSRV101	SS000001	cesarr	X86-based PC	Server	
	e	WTR05311	SS000003	cesarr	X86-based PC	Server	

Figure 50. The New Client Installed

If you double-click the machine **WTR0531**, you can get more information about the system. SMS and Windows NT provide you with the following types of information:

Identification

- Workstation Status
- Processor
- Operating System
- Network
- Netcard
- Disk
- PC Memory
- Video
- Mouse
- Services
- Environment
- Help Desk
- Windows NT Diagnostics
- Network Monitor
- Windows NT Administrative Tools
- DMI (Distributed Management Interface)
- User Information

Note: The last two items are only available for client machines.



Figure 51. User Information from the Client Machine

The UM Services upward integration module provides you with more information. To enable the UM Services features in the SMS Administrator, you have to first install the UM Services upward integration module for SMS in the server machine (see 3.2, "Installing the Upward Integration Module for SMS" on page 23).

The clients need to have installed the UM Services code as well (see 2.1, "Installation" on page 4).

At the client machine, go to the path where the UM Services agent was installed. In our environment, the path was: D:\Program Files\IBM\UMS.

Inside the path where the UM Services folder is, we had to create a directory called noidmifs. It is possible that the directory might be created automatically for you. You should verify that it is there.

Copy into the new directory (noidmifs) a batch file called smsinv.bat which is located in the directory D:\Program Files\IBM\UMS\inventory.

1:\ >cd\ ~~	ogram files	ibm\ume		
-	-			
):\Progra	m Files\IBM\	UMS>md noidm	ifs	
):\Progra	m Files∖IBM\	UMS>dir *.		
	n drive D ha erial Number	us no label. • is 6E25-B9E	6	
Director	y of D:\Prog	gram Files∖IB	M>UMS	
05/26/99	12:25p	<dir></dir>		
05/26/99	12:25p	<dir></dir>		
05/25/99	05:31p	<dir></dir>	bin	
05/25/99	05:11p	<dir></dir>	cache	
05/25/99	05:14p	<dir></dir>	ci	
05/25/99	05:16p	<dir></dir>	Director	
05/25/99	05:14p	<dir></dir>	DMI2SNMP Mapper	
05/25/99	05:31p	<dir></dir>	httpserv	
05/25/99	05:20p	<dir></dir>	inventory	
05/25/99	05:14p	<dir></dir>	LDDX	
05/25/99	05:21p	<dir></dir>	LDISCAN	
05/25/99	05:27p	<dir></dir>	mifdb	
05/25/99	05:14p	<dir></dir>	MIFS	
05/26/99	12:25p	<dir></dir>	noidmifs -	
05/25/99	05:14p	<dir></dir>	ຮູບພັນ	
05/25/99	05:15p	<dir></dir>	Tivoli	
05/25/99	05:14p	<dir></dir>	TME	
05/25/99	05:14p	<dir></dir>	utils	
	18 File		0 bytes	
		1,762,7	74,528 bytes free	
D:\Progra	m Files∖IBM\	UMS>cd inven	tory	
	- 841			
	n drive D ha	UMS\inventor	y/uir	
		is 6E25-B9E	6	
			-	
Director	y of D:\Prog	ram Files∖IB	M\UMS\inventory	
05/25/99	05:20p	<dir></dir>		
05/25/99	05:20p	<dir></dir>		
05/24/99	06:13a	1	9,025 cim2mif.jar	
05/25/99	05:31p	-	155 CimEngine.log	
05/24/99	05:03a		12 dmi.lst	
05/24/99	06:05a	12	6,976 dmi2sms.exe	
05/24/99	06:05a		5,536 dmi2tiv.exe	
05/24/99	05:03a		312 ldinv.bat	
05/25/99	05:14p	<dir></dir>	script	
	05:03a		325 smsinv.bat	
05/24/99	10 File	e(s) 2	12,341 bytes	
05/24/99			74,528 bytes free	
05/24/99		1,704,7	1,520 Dyccs 1100	
		UMS\inventor	-	

Figure 52. Creating the noidmifs Folder and Finding smsinv.bat

	les\IBM\UMS e(s) copied		)>copy smsinv.bat∖noidmi	lfs
D:\Program Fi	les\IBM\UMS	\inventory	y>cd∖noidmifs	
D:\Program Fi Volume in dr Nolume Seria		o label.		
VOLUNG OUTIC	1 1101501 10			
			I\UMS\noidmifs	
Directory of 05/26/99 12: 05/26/99 12:	D:\Program 26p 26p		NUMS\noidmifs 	
Directory of 05/26/99 12:	D:\Program 26p 26p	Files\IBM <dir> <dir></dir></dir>		

Figure 53. The Batch File smsinv.bat

It's very important to copy the file to the right place. Otherwise, the integration will not work. After executing these steps, run the smsinv.bat file from a DOS window in the client machine.

```
@echo off
%UMS_DRIVE%
cd %UMS_HOME%\inventory
jview -d:WINDIR=%WINDIR% -cp:a .\cim2mif.jar;
    "%UMS_HOME%\httpserv\cimdre.jar";
    "%UMS_HOME%\httpserv\cimxml.jar";
    "%UMS_HOME%\httpserv\mswmi.jar";
    "%UMS_HOME%\httpserv\mswmi.jar";
    "%UMS_HOME%\httpserv\xml4j_1_1_14.jar" com.ibm.sysmgt.cim.cim2mif.cim2mif /SMS
dmi2sms @dmi.lst
```

Figure 54. Contents of the smsinv.bat File

🗱 DOS - smsinv	
):\Program Files\IBM\UMS\noidmifs>smsinv	
BM CIM to MIF Generator, version 1.10	
Creating MIF files in D:\MS\SMS\noidmifs	
Deleting aol	
Processing assetid	
Processing bios	
Processing cache	
Processing chassis	
Processing cim	
Processing config	
Processing ipconfig	
Processing ipxconfig	
Processing lease	
Processing memory	
Processing network	
Processing personalization	
Processing ports	
Processing processor	
Processing serialization	
Processing slot	
Processing ums	
Processing user	
Processing video	
Processing warranty	
IBM Inventory Generator for SMS, version 1.10	
Refreshing DMI Cache	
Successfully wrote D:\MS\SMS\noidmifs\DMI.MIF	
NVWIN32.EXE running as executable.	
Attempting to locate/identify Apple zone.	
Source path provided as: \\NTSRV101\SMS_SHR\	
SMS root directory: \\NTSRU101\SMS_SHR\.	
Convist location provided as: \\NTCDU101\CMC_CUD\\CI_NT_TYT	
Copylist location provided as: \\NTSRU101\SMS_SHR\\CL_NT.TXT	
DOMÁIN.INI path: \\NTSRU101\SMS_SHR\DOMAIN.INI. Copy list file: \\NTSRU101\SMS_SHR\cl_nt.txt.	
opy list file: \\Niskului\Shs_Shk\cl_nt.txt.	
letwork address: 40:00:52:00:53:11	
Scanning local machine.	
locating/reading SMS.INI.	
Creating output file.	
ocating client MIF directories.	
locating/processing command file.	
sing remote command file path (resync.cfg)	
resync has been requested.	
lardware scan WILL be performed.	
Software scan WILL be performed.	
IT CPU	
AT OS	
IT Disk	
louse	
IT MEMORY	
letwork	
a cwork	
lideo	
Service	
inished scanning	
Setting scan times	
-[SMS 100%]-	
):\Program Files\IBM\UMS\inventory>	

Figure 55. The smsinv.bat File Execution

After executing the batch file, the SMS administrator program receives information about that client and it adds some features to its menus and properties. In addition, the MIF files that are generated are copied into the noidmifs directory so that they can be processed by SMS.

🟭 Personal Computer Prop	perties - [WTR05311]		
Properties		82	
	Attribute	Value	
IPX Network Configuration	Index	1	
	Name	UMS	
	Version	0.0001	
Port Connectors	Build Number		
<u>* • • •</u>	HTTPD Port	411	
	SNMP Traps Enabled Trap Destinations	true <empty></empty>	
IBM UM Services 🦰	Trap Desurrations	(cmpty)	
Processor Details			
System Board Configuration			
Warranty Information			
🔗			
Memory Details			
Cache			
Personalized Data 🖵			

Figure 56. New Features Incorporated by UM Services

Beyond the standard information that SMS provides, there are new features for the client machine that UM Services provides:

Network Details



Figure 57. Network Details

• Video Details

Properties		82
	Attribute	Value
Network Details	Index	1
<b>N</b>	Manufacturer	S3 Incorporated Trio3D Display Driver Version 3.26.28 Production Release
	Description	S3 Compatible Display Adapter
Video Details	Current Vertical Resolution	768
40	Current Horizontal Resolution	1024
<u>ر اللي</u>	Current Number of Bits per Pixe	16
System Slots	Video RAM Memory Size	4194304
System Sibis	Driver Filename	s3trio3d
	Current Refresh Rate	60
Lease Information	Color Depth	24

Figure 58. Video Details

• System Slots



Figure 59. System Slots

• Lease Information



Figure 60. Lease Information

• User Details



Figure 61. User Details

Common Information Model (CIM)

📰 Personal Computer I	Personal Computer Properties - [\#TR05311]					
Properties			582			
	1	Attribute	Value			
CIM		Index	1			
		CIM Version	1.10.698.0000			
🛷						
BIOS Details						
System Enclosure						
	•					

Figure 62. Common Information Model

• BIOS Details

Properties		582
	Attribute	Value
BIOS Details	Index	1
	BIOS Manufacturer	IBM
	BIOS Version	NTKT19AUS
System Enclosure	BIOS Release Date	2/9/1999 00:00
	Supports SMBIOS	true
	SMBIOS Major Version	2
AssetID	SMBIOS Minor Version	1

Figure 63. BIOS Details

• System Enclosure

📰 Personal Computer Prop	Personal Computer Properties - [WTR05311]					
Properties		<b>B</b> 2				
	Attribute	Value				
System Enclosure	Index					
	Manufacturer	IBM				
	Туре	Tower				
AssetID	Cabinet Lock Present	true				
🍙 –						
Serial Number Information						
🅋 星						

Figure 64. System Enclosure

AssetID



Figure 65. Asset ID

• Serial Number Information

Properties	•		<b>1</b>	62
		Attribute		Value
Serial Number Information		Index		1
		Asset		Processor 0
		Serial Number		11S01K2053ZJ15MK8870AD

Figure 66. Serial Number Information

• IP Network Configuration

Properties		60	
	Attribute	Value	
IP Network Configuration	Index		
	IP Address	9.24.106.46	
<b>1</b>	IP Subnet Mask	255.255.255.0	
IPX Network Configuration	IP Gateway	9.24.106.1	
	DNS Servers	9.24.104.108	
	DHCP Enabled	true	
Port Connectors	DNS Hostname	wtr05311	
r on conflectors	DNS Domain	itso.ral.ibm.com	

Figure 67. IP Network Configuration

• IPX Network Configuration

📰 Personal Computer Prop	Personal Computer Properties - [WTR05311]					
Properties						
	Attribute	Value				
IPX Network Configuration	Index	1				
	IPX Enabled	true				
	IPX Frame Type	AUTO				
Port Connectors	IPX Address	00000009:400052005311				
IBM UM Services						
Processor Details						

Figure 68. IPX Network Configuration

Port Connectors



Figure 69. Port Connectors

#### • IBM UM Services

Properties		5 <u>782</u>	
TOW	Attribute	Value	
IBM UM Services	Index	1	
	Name	UMS	
	Version	0.0001	
Processor Details	Build Number		
	HTTPD Port	411	
	SNMP Traps Enabled	true	
stem Board Configuration	Trap Destinations	<empty></empty>	

Figure 70. IBM UM Services

• Processor Details



Figure 71. Processor Details

System Board Configuration

📰 Personal Computer Properties - [WTR05311]					
Properties	•				
		Attribute	Value		
System Board Configuration		Index	1		
		String	66MHz FSB: CPU Speed Selection uses SW1-4,333: On Off Off On,300: Off On Off On,266: On		
	_				
Warranty Information	-				

Figure 72. System Board Configuration

Warranty Information

🖩 Personal Computer Properties - [\#TR05311]					
Properties			<u>89</u>		
		Attribute	Value		
Warranty Information		Index Warrante Dave Karr	1		
0		Warranty Duration Warranty End Date			
Memory Details	-	Warranty Cost			

Figure 73. Warranty Information

· Memory Details

Properties		<b>6</b> 32	
le le la company de la comp	Attribute	Value	
Memory Details	Index	1	
	DeviceLocator	DIMM 0	
	Capacity	134217728	
Cache	FormFactor	SIMM	
	MemoryType	SDRAM	
	Speed	66	
Personalized Data	DataWidth	0	
Personalized Data	- TotalWidth	0	

Figure 74. Memory Details

• Cache



Figure 75. Cache Information

Personalized Data

Properties		<b>16</b> 82	
	Attribute	Value	
Warranty Information	Index	1	
	Label1		
8	Data1		
Memory Details	Label2		
Memory Declars	Data2		
	Label3		
Cache	Data3		
	Label4		
<b>.</b>	Data4		
	Label5		
Personalized Data	Data5		

Figure 76. Personalized Data

The Tools menu was modified as well. There are three more functions on it (for this client):

- Issue Wake-on-LAN request
- UM Services Management Tools
- UM Services Update Client Inventory



Figure 77. NewFeatures on the Tools Menu

### 3.4 Launching UM Services from SMS

The UM Services can be launched from SMS. To access a specific client, all the UM Services features are available through the browser (Netscape or Internet Explorer), including remote control.

#### 3.4.1 Issue Wake-on-LAN Request

The Wake-on-LAN feature provides the capability to remotely power on systems supporting Wake-on-LAN by sending a wake-up frame. With this feature, it's possible to upload/download data to and from the systems involved during off hours.



Figure 78. Issue Wake-on-LAN Request

To use the Wake-on-LAN features, you need to have a Wake-on-LAN compatible LAN card in the client machine.

Beyond the software configuration, you may have to configure the hardware. On the BIOS of IBM machines, you can set up and turn on the Wake-on-LAN features.

To configure the BIOS on the client machine, you need to power it down and back up and then press F1 to enter setup mode. The procedure to set up the environment requires the following steps at power up time:

#### Choose Start Options

- Primary Startup Sequence Leave it set as it is.
- Automatic Power on Startup Sequence Change to [Enabled]
- First Startup Device Change to [ Network ]
- Second Startup Device Change to [Hard disk 0]
- Error Change to [Automatic]
- Choose Power Management
  - ACPI BIOS Change to [disabled]
  - APM change to [enabled]
  - Automatic Power On
- Choose Wake-on-LAN
  - Wake-on-LAN Change to [enabled]
  - Startup Sequence Change to [Automatic]

Then save all your changes and reboot the system.

#### 3.4.2 UM Services Management Tools

Launching the UM Services browser using SMS is very simple. You just need to open the SMS Administrator, go to the Tools menu and choose **UM Services Management Tools**.



Figure 79. Launching the Browser

The next screen asks for the user name and password to access the client machine. This user ID was created when the Agent was installed.

Enter Net	work Passwo	d	? ×
<b>?</b> >	Please type yo	ur user name and password.	
IJ	Site:	wtr05311	
	Realm	IBM UMS	
	<u>U</u> ser Name		
	<u>P</u> assword		
	🔲 <u>S</u> ave this p	assword in your password list	
		OK Can	icel

Figure 80. Accessing the Client Machine with a Browser

¢	http://wtr05311:411/index.html - Microsoft Internet Explorer												
]	<u>F</u> ile	<u>E</u> dit	⊻iew	F <u>a</u> v	orites	<u>T</u> ools	<u>H</u> elp						
	<b>e</b> Back	-	<b>→</b> Forward	· •	💌 Stop	🕼 Refres	h Home	Q Search	Favorites	Iistory	<mark>IN</mark> ▼ Mail	<b>Print</b>	E dit
]	Address	: 🙋	http://wt	r0531	1:411/	index.html							
	Veri	fyin	g UM	S ii	ıstal	lation.							

Figure 81. Verifying UM Services Installation

When you use the browser (Netscape or Internet Explorer) to access the UM Services agent, a screen indicating that the UM Services installation is being verified appears. This screen appears each time that this option is selected. This verification is necessary to verify that all the modules are installed.

**Note:** Since this was the first time we had accessed the agent with Internet Explorer, we received an alert from the system indicating that our system didn't have all the modules required. However, the alert showed how to get those modules and how to install them. We downloaded these files from the client machine into D:\Program Files\IBM\UMS \httpserv. They were zipped files and after their installation we had to reboot our server and we were able to use the UM Services browser functions. See Figure 82 for more details. Also it's very important that you check what browser is being used as default. The modules will be updated only for the default browser.

🖉 http://wtr05311:411.	http://wtr05311:411/umsinstall.html - Microsoft Internet Explorer						
_ <u>F</u> ile <u>E</u> dit <u>V</u> iew F <u>a</u>	vorites <u>T</u> ools <u>H</u> e	elp					
Back Forward	Stop Refresh	습 Home Search	Favorites History	Mail	<b>Print</b>	<u>∎∕</u> Edit	•
Address 🛃 http://wtr053	311:411/umsinstall.htr	ml					▼ 🖉 Go 🗍 Lin
UMS Java librai	ry installatio1	n					
UMS requires the ins	stallation of two J	Tava class librarie	s. One or more	of the requ	ured libra	iries we	ere <b>not</b> found on your system.
	e, execute it to in	stall the support			•		on the corresponding link to download the necessary files. After prowser for the changes to take effect. Windows 95/98 users must
If you are using Inter	net Explorer, you	1 must have the L	nternet Explorer	4 Service	Pack 1 d	r great	er.
Swing/JFC support:	version 1.1	De	ownload <u>Swing/J</u>	FC installe	er 🔺	4	
XML support:	none	De	wnload XML i	nstaller		<u> </u>	
	If you are not running on a Win32 (Windows 95, 98 or NT) computer, you will need to download the support files (Swing/JFC and/or XML) and manually add them to your CLASSPATH environment variable.						

Figure 82. Warning about Missing Java Libraries

After rebooting the server, go back to the Tools menu and choose **UM Services Management Tools**. The screen that pops up asks you for the user name and password. After entering them, the UM Services data from the client machine is transferred to your browser.

BRA - Microsoft Internet E:	xplorer							
	<u>T</u> ools <u>H</u> elp							
Back Forward Stop	Befresh Home Search Favo		▼ 📑 🛃 - I Print Edit					
Address @ http://wtr05311:411	Address 🕘 http://wtr05311:411/index2.html							
iem. 👼	Next System							
Information Tasks Information Tasks Basic System Drives Human Interface Memory B. Human Interface Memory B. Operating System R. Operating System R. Operating System R. Ports Monitors System Health R. System Health R. UPS		Processor: System: OS: Storage: Video: Network:	Intel Pentium II or Pentium II Xeon processor 350MHz Internal L1 Cache (32k) Internal L2 Cache (512k) IBM unknown BIOS mfr Default System BIOS IBM BIOS Ver NTKT19.0 2/9/99 PCI (3), ISA (3), AGP (1) 127Mb RAM Microsoft Windows NT Server 4.0.1381 SCSI Fixed Disk (4298 Mb) CD-ROM S3 Compatible Display Adapter IBM PCI Token-Ring Adapter (NDIS 3.1 Miniport MAC - 40:00:52:00:53:11 IP - 9.24.106.46					
		•						

Figure 83. Browser with Client Machine Data

Using the browser, you have access to all of the IBM features in the client machine. Also, you can get control of the client using the Remote Control option. This option is located at the Tasks folder under Tools.

To take control of the client machine, you have to configure (at the client machine) the Help Desk Options.



Click Start -> Programs -> SMS Client -> Help Desk Options.

After clicking Help Desk Options, the following figure appears:

Help Desk Options	×
Status: Current Remote Viewer Options V Allow Remote Control V Allow Remote Rehoot Allow Remote File Iransfer Allow Remote File Iransfer V Allow Remote Execute	Bead Current         Save As Current         Read Default         Save As Default
Local Options Per <u>m</u> ission Required <u>V</u> isible Signal WUSER is listening on TCP/IP address 9.	He <u>lp</u> <u>Exit</u> 24.106.46

Figure 85. Help Desk Options

At this screen, you can configure the options that the server will access, for example, remote control and chat.

Figure 84. Accessing the Help Desk Menu

We checked all the options, and then we clicked **Save as Current**. After that, the client machine was ready to be taken over by remote control.

iem. 🖻	Next System		
Information Tasks Configuration Alert On LAN Asset ID Date & Time NNP Context SNMP Context Duser Security Tools Context DMI Information Context Shutdown Web Links Context System Updates		Access type Grace period Proceed if timeout Change state on Target Remote Desktop optimization Color reduction Enable compression Refresh rate	Monitor

Figure 86. Starting Remote Control with UM Services

At the browser screen, in the Tasks folder, choose Tools and Remote Control. Click the **Start session** button and a new screen with the remote console is opened.



Figure 87. Remote Control of the Client Machine

At the client machine, a minimized window on the taskbar will appear, indicating that the machine is being controlled by the server. At that point in time, only the server can operate the machine. The keyboard and the mouse on the client machine stay locked until the server terminates the session.

### 3.5 Inventory

To gather information about the clients, we clicked the **UMS Update Client Inventory** option on the Tools menu.

Si Microsoft SMS Administrator File View Options Tools Windo	ow <u>H</u> elp				<u>- 🗆 ×</u>
SMS Securi SMS Servic SMS Datab	· · ·	7 24 8 2		-	
	r Manager Hon-LAN request 01 gement Tools 03	LogOn Name cesarr cesarr	SystemType X86-based PC X86-based PC	SystemRole Server Server	
Personal Windows N Properti Windows N Windows N	e Client Inventory Event viewer T Server Manager T User Manager	18 Q	-		
Identification	T Performance Monitor Name SMSID Site	Value WTR05311 SS000003 SS0		_	
Workstation Status	Domain SMSLocation SystemRole SystemType	SMSDOM SS0 SMSDOM WTR05311 Server X86-based PC	1		
Operating System	LogOn Name NetCardID	cesarr 40:00:52:00:53:11			
	<u> </u>				
Httpserv based interface to remote sw			Becord	1 . ( 1	

Figure 88. Accessing the UM Services Inventory Option

This option opens the browser again and asks for the user ID and password. It shows a window similar to Figure 89. After clicking the button, UM Services starts to gather the inventory information and sends it to the SMS database.



Figure 89. Gathering Inventory Information using UM Services

After the data collection process completes, another screen appears indicating the end of the process.



Figure 90. End of Gathering Process

When SMS performs the next Inventory scan, the information generated by UM Services will be included.

### 3.6 Software Distribution

To distribute UM Services to client machines, you have to create a package and a job on SMS. The software distribution process in SMS is based in Package Definition Files (PDFs). The PDF file (\*.PDF) is a script that contains all the necessary steps for software installation.

After installing the SMS upward integration module on the server, a UM Services PDF will be placed in the directory ...\IBM\UMS. Its name is UMS.PDF.

**Note:** In this process we need to use the UM Services installation folder (the same one that was used for the Agent installation or the UIM installation). In order that the client machines have access to that folder, you need to make the folder shared.

In our environment, the UM Services installation files are in the directory E:\Ums-last\Win32\Install.

ïile <u>E</u> dit ⊻iew <u>T</u> ools <u>H</u> elp ☐ Install <b>■ 1</b>	*= *=   X   B   @				
🔄 Install 🔄 🖻	Contents of 'Install'				
a Desktop	Name	Size	Туре	Modified	Attribute
- 🧏 My Computer	Smb	0.00	File Folder	5/21/99 11:09 AM	
🗄 🚽 3½ Floppy (A:)	inst32i.ex	313KB	EX File	5/13/99 1:00 AM	
🕀 🥁 (C:)	isdel	8KB	Application	5/13/99 1:00 AM	,
🗄 🚽 🔂 (D:)	setup.lib	2.605KB	LIB File	5/13/99 1:00 AM	
ė 👦 (E:)	aolagent	1,921KB	Z File	5/13/99 1:00 AM	
Constitution Constitution Constitution Constitution Constitution Constitution Const	aolproxy	1.607KB	Z File	5/13/99 1:00 AM	
🕀 🛄 aimit-inst	Custom.iss	1KB	ISS File	5/13/99 1:00 AM	
	Data.tag	1KB	TAG File	2/9/99 8:05 PM	
	al data1.cab	39KB	CAB File	2/9/99 8:05 PM	
⊞ <u></u> Ided ⊞ <u></u> Imanuals	🔊 dmi	6,760KB	Z File	5/13/99 1:00 AM	
🖅 🔄 manuais	💐 intel	91KB	Paint Shop Pro 5 Image	9/23/98 7:45 PM	В
	📓 lang. dat	5KB	DAT File	5/30/97 2:31 PM	
socks	🔊 layout.bin	1KB	BIN File	2/9/99 8:05 PM	
temp	👰 m1plus	308KB	Application	5/13/99 1:00 AM	
🖃 🧰 Ums-last	👼 Master	3KB	Configuration Settings	5/13/99 1:00 AM	
🕀 💼 UMS PLUS FOR TIVOLI	👜 MSJavx86	6,448KB	Application	5/13/99 1:00 AM	
🖻 🧰 Win32	🖬 nfdagent	13,312KB	Z File	5/13/99 1:00 AM	
🖻 🦳 Install	😹 os.dat	1KB	DAT File	5/6/97 5:15 PM	
Smb	📓 Remote	2,720KB	Z File	5/13/99 1:00 AM	
- Divindows	🛃 Setup	45KB	Application	5/13/99 1:00 AM	
Windows Update Setup Files	🐻 Setup	1KB	Configuration Settings	5/13/99 1:00 AM	
	🚯 Setup	153KB	Internet Communication Settings	5/13/99 1:00 AM	

Figure 91. Path to the UM Services Installation Files

With the right button click the **Install** folder and choose **Sharing** on the menu that appears.

🖃 💼 Ums-last	📕 Master	3KB	Configuration Settings
🕀 💼 UMS PL	US FOR TIVOLI 🛛 🖉 MSJav	x86 6,448KB	Application
🖻 🧰 Win32	nfdage	nt 13,312KB	Z File
🖻 – 🔁 Insta		1KB	DAT File
· · · · · · · · · · · · · · · · · · ·	<u>E</u> xplore	2,720KB	Z File
- 🛄 Windows	<u>O</u> pen	45KB	Application
🦳 🧰 Windows Uj	Browse with Paint Shop Pro	1KB	Configuration Settings
	<u>F</u> ind	153KB	Internet Communication Settings
🗈 🚅 ntcode on 'wtrnt	Charling a	1KB	ISS File
🗄 🛫 fmbarry on 'wtml		1KB	Text Document
	Se <u>n</u> dTo ▶	1KB	LST File
Printers	Cut	.g 6KB	PKG File
Scheduled Task	Сору	1KB	Text Document
E 🥩 Web Folders		.pkg 8KB	PKG File
🕀 🌆 Network Neighborha	Create <u>S</u> hortcut	hs 663KB	Application
📲 Recycle Bin	<u>D</u> elete	2,611KB	Z File
My Briefcase	Rena <u>m</u> e	p.iss 1KB	ISS File
	Properties	10,975KB	Z File
	1 Toberges	ore 3,376KB	Application

Figure 92. Sharing the UM Services Installation Folder

You need to choose a Share Name for the folder. We used UMINST. Type the name and click **OK**. Looking at the Windows Explorer, a small hand icon will appear indicating that the folder is shared.

Install Properties	Х
General Internet Sharing Security	
C Not Shared	
© Shared As:	
Share Name: UMINST	
Comment:	
User Limit:	
Maximum Allowed	
Permissions	
OK Cancel Apply	

Figure 93. The Folder's Share Name

Then you have to map this folder as a network drive. In Windows NT Explorer, below the menu, there is a button called Map Network Drive.

💐 Exploring - Install				
$\underline{F} \text{ile}  \underline{E} \text{dit}  \underline{V} \text{iew}  \underline{T} \text{ools}  \underline{H} \text{elp}$				
💫 Install	🔽 🗈 崔	<b>3</b> 🌆 👗	<u>&gt; X</u> e	
All Folders		Contents of 'Install'		
🝰 Desktop		Name	Size	Туре
🖻 🚚 My Computer		🚞 Smb		File Folder
🖻 🚽 3½ Floppy (A:) 🛛 🙀 _inst32i.ex_ 313KB EX_ File				
🗄 📷 (C:)		isdel	8KB	Application

Figure 94. Mapping the Network Drive

Clicking that button causes a new window to appear. The process to map the folder will be the same as indicated in Figure 42 on page 26. But here, we type the name of the server and the shared name that we created.

Map Netwo	rk Drive		×
<u>D</u> rive:	J:	•	OK
<u>P</u> ath:	\\NTSRV101\UMINST	•	Cancel
Connect As:			<u>H</u> elp
	Reconnect at Logon		
<u>S</u> hared Dire	ctories:	<b>⊠</b> <u>E</u> xpa	and by Default
M M N: の の の の の の の の の の の の の	JANRDM1 URLIDOM SDOMAIN NEWORLD 22003 RRDOM <b>MSDOM</b> STRDM INTSRV101 WTRD5311 '0RKGROUP TRDM TRDM		

Figure 95. Mapping the Drive

If you look at the Windows NT Explorer you can see the new mapped drive. If it does not show up, you should referesh the list.

1	
	🛛 👼 Setup
	🚯 Setup
🕕 🚍 ntcode on 'wtrntdc' (G:)	setup.iss
😟 🚍 fmbarry on 'wtrntdc' (H:)	
🗄 🚎 share on 'cesarr' (I:)	🗏 Setup
	🔊 Setup.lst
😟 🛁 uminst on 'Ntsrv101' (J:)	setup.pkg
Control Panel	
Printers	🗏 Setup
Scheduled Tasks	🛛 🛋 setupold.pkg

Figure 96. New Drive Added to Windows NT Explorer

After this preparation task is completed you can go back to SMS. You have to create a package.

On the SMS Administrator, click File -> Open.

😭 M	licros	oft SM	S Admin	istrator		
<u>F</u> ile	<u>E</u> dit	⊻iew	<u>O</u> ptions	Tools	<u>W</u> indow	<u>H</u> elp
<u>0</u> p	en			Ct	rl+O	1 0
_	ose					
Cļo	ose All					
<u>Ν</u> ε	w			Ct	rl+N	
Pr	oper <u>t</u> ie	s		Al	t+Enter	
Ex	ecute	Query				
De	efine Q	uery Re	sult <u>F</u> orma	ats		
Ad	ld to G	roup				
Pri	nt			Ct	rl+P	
P <u>r</u> i	nt Setu	ир				
Pa	ige Sel	tup				
Ex	it					

Figure 97. Accessing the Menu



Figure 98. Choosing a Window to Open

A window appears with the created packages. At this point in time we had not created any packages so the window was empty.

Figure 99. Package Window

Since the package for UM Services distribution is ready, you need to import the UMS.PDF into this window.

At the main menu, click File -> New.

🍋 L1:	0.01	C 4 4 - 1-1				
Micros						
<u>File</u> dit	⊻iew	<u>O</u> ptions	Tools	<u>W</u> indow	/ <u>H</u> elp	
<u>0</u> pen			Ct	rl+O	) <b>(</b>	ð
<u>C</u> lose						
Close All						
<u>N</u> ew			Ct	rl+N		
Proper <u>t</u> ie	s		Al	t+Enter		
Execute	Query					
Define Q	uery Re	esult <u>F</u> orma	ats			
Add to G	roup					
Print			Ct	rl+P		
Print Setu	лр					
Page Sel	up					
E <u>x</u> it						

Figure 100. Creating a New Package

A window called Package Properties will be opened. On the right side you can see four buttons. The third is the Import button. Click it.

Package Propert	ies			×
ID: <new p<="" th=""><th>ackage&gt;</th><th></th><th><math>\mathbf{i}</math></th><th>OK</th></new>	ackage>		$\mathbf{i}$	OK
<u>N</u> ame:	<b>,</b>			Cancel
<u>C</u> omment:				Import
			<u> </u>	<u>H</u> elp
			7	
	们个配 Sharing	nventory	]	

Figure 101. Importing the UMS PDF File

A browser window is opened. Use the directories list to browse the folder where the UMS.PDF is located. In our environment the file was in D:\program files\ibm\ums.

ïle Browser		×
File <u>N</u> ame: ums.pdf	<u>D</u> irectories: d:\program files\ibm\ums	OK Cancel
ums.pdf	➢ IBM ➢ UMS ○ bin ○ cache ○ ci ○ Director	Net <u>w</u> ork <u>H</u> elp
List Files of <u>Type:</u> SMS Package Descriptions (*.pdf)	Drives:	

Figure 102. Browsing the UMS.PDF File

As we indicated, the PDF file contains a script with information about the installation process. In Figure 103 we show the contents of the file.

**Note:** This PDF was not finished when we wrote this book. The UMSW32UM.EXE file was not ready to make an unattended installation. In our case, we created a package and a job to start a standard installation. It is available on the CD in \InstallIfile Packages\SMS.

Command Prompt
D:\Program Files\IBM\UMS>type ums.pdf [PDF]
Version=1.00
[Package Definition] Product=IBM Universal Manageability Services Version=1.0 Comment=IBM System Management Tool SetupVariations=Typical
[Typical Setup] CommandName = Typical Installation CommandLine = UMSW32UN.EXE UserInputRequired = FALSE SynchronousSystemExitRequired = True SupportedPlatforms = Windows95, Windows98, Windows NT (x86)
[Setup Package for Inventory] InventoryThisPackage=FALSE
D:\Program Files\IBM\UMS>_

Figure 103. The UMS.PDF File

After importing the UMS.PDF file, a screen with the UM Services data appears:

ickage Properties	×
ID: <new package=""></new>	OK
<u>N</u> ame:	Cancel
IBM Universal Manageability Services 1.0	
Comment:	I <u>m</u> port
IBM System Management Tool	<u>H</u> elp
Image: Sharing     Image: Sharing	

Figure 104. The UM Services Data Package Properties

The next step is to click the **Workstations** button. The field Source Directory must be filled in with the path of the installation file. By clicking the (...) button you can browse the directories to find the path. The path for our installation was the drive that we mapped earlier.

**Note:** We used the path for the UM Services installation files. When the UMSW32UN.EXE is ready, it will point to the correct path.

Setup Package for Workstations		
Package: IBM Universal Manageabili Source <u>D</u> irectory: \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	ty Services 1.0	<u>C</u> lose <u>A</u> ccess
- ₩orkstation Command Lines Typical Installation	<u>N</u> ew <u>Properties</u> De <u>l</u> ete	<u>H</u> elp

Figure 105. Setting Up the Package

Click the **Properties...** button and another screen will appear. That screen needs to be filled in with the name of the installation file and each system on which it is going to be executed.

Since you are using the UMS.PDF, that field appears filled in with the name of the installation file:

Command Line Properties	×
Command <u>N</u> ame: Typical Installation Command Line:	OK Cancel
UMSW32UN.EXE ···	<u>H</u> elp
<mark>∕ A</mark> utomated Command Line <u>S</u> ystem (Background) Task	
Supported Platforms:	
☐ MS-DOS ☐ Windows 3.1 ☑ Windows95 ◀	

Figure 106. The Command Line Properties

We clicked the (...) box and changed the path to setup.exe on the mapped drive:

ommand Line Properties	×
Command Name:	OK
Typical Installation	Cancel
, Command <u>L</u> ine:	
SETUP.EXE	<u>H</u> elp
Automated Command Line	
<u>System (Background)</u> Task	
Supported <u>P</u> latforms:	
☐ Windows 3.1	
🗖 Windows95	
✓ Windows NT (x86)	

Figure 107. Changing the Command Line

We also changed the supported platform to install on Windows NT (in our environment, the client machine is another Windows NT Server).

Click **OK** and you go back one screen in the process. Click **Close** and you go back to the first screen, Package Properties. Click **OK**.

A system message appears indicating that all sites (we just had one) will be updated. Now the package is ready.

m	m Packages				
	Name	ID	Setup	Comment	
Ľ	I IBM Universal Manageability Services 1.0	SS000002	Workstations	IBM System Management Tool	

Figure 108. UM Services Package Ready

Now you need to create a job to run the package.

Like the Package creation option, on the main menu click **File** and **Open**. That brings you to a window similar to Figure 98 on page 50. Choose **Jobs**.

	😹 Jobs 💶 🚬						×		
l		ID	Туре	Status	Time	Priority	Repeat	Comment	$\Box$
U									
l									
U									

Figure 109. Jobs Window

With the Jobs window selected, go to the main menu again and click File -> New.

The Job Properties window will be opened:



Figure 110. Job Properties

You have three types of Jobs:

- 1. Run Command on Workstation
- 2. Share Package on Server
- 3. Remove Package from Server

Job ID: <new job=""></new>	OK
<u>C</u> omment:	Cancel
UMS Agent install	<u> </u>
	<u>H</u> elp
Job <u>T</u> ype:	
Run Command on Workstation	<b>-</b>
Run Command on Workstation Share Package on Server Remove Package from Server	

Figure 111. The Job Types

The first one (which we used) runs a command (usually a file) on a workstation. The second one will share a package on a server, so the clients can access the server in order to install code. The third one removes a package from the server.

Click **Details** and a new window is opened.

The Package name field contains a list of the packages on the server. Figure 112 shows the UM Services package that we created. If you create more packages, you can select them from the list.

The Job Target field should be filled in according to the machines that should receive the package. It can be a group or only one machine.

You can also configure the phase to send the package.

ob ID: <new job=""></new>	Distribute Phase
ackage:	Refresh Existing Distribution Servers
🗿 IBM Universal Manageability Servic 💌	▼ Put on Spe <u>c</u> ified Distribution Servers:
Job Target © Query Results:	a <default servers=""></default>
🐴 All Personal Computers 🛛 💌	Run Phase
C Machine <u>G</u> roup:	Run Workstation Command:
<u>a</u>	Typical Installation
C <u>M</u> achine Path:	
x x	Offer After: (M/D/Y h:m:s)
Limit to Sites:	6 / 4 / 1999 8 : 37: 20 PM 🚔
🏟 ITSO-PC2150R 📃	Mandatory After: (M/D/Y h:m:s)
Linclude Subsites	6 /11/1999 8 : 37:20 PM
Send Phase	Expires After: (M/D/Y h:m:s)
Send Package to Target Sites:	11/19/1999 7 : 37: 20 PM
Only if Not Previously Sent C Even if Previously Sent	

Figure 112. Job Details

In our case, we configured the package to send UM Services to **All Personal Computers**. Click **OK** to go back to the Jobs window.

The Job Schedule window allows you to determine the day, hour, priority and frequency of the job.

Job Schedule			×
Job ID:	<new job=""></new>		ОК
		(M/D/Y h:m:s)	Cancel
<u>S</u> tart After:	6 / 4 / 1999	8 : 37: 20 PM 🚔	Help
<u>P</u> riority:	Low	-	
<u>R</u> epeat:	Never	•	
	Never	_	
	Daily	E	
	Weekly		
	Biweekly		
1	Monthly		

Figure 113. Job Scheduling

After configuring the schedule, click **OK** to go back to the Jobs window.

The third button shows the job's status. After running it, you can check to see the status of the job. Click the **Close** button to go back to the Jobs window.

Jot	o Status				×
	Job ID:		Overa	all Status: Pending	<u>C</u> lose
	Site	Sending Status	Working Status	Cancel Status	<u>R</u> efresh
					<u>D</u> etails
					<u>H</u> elp
	•				

Figure 114. Job Status

After everything is configured, click the **OK** button in the Jobs window, and the job will be queued.

🔏 Jobs 📃							_ 🗆 >
	ID	Туре	Status	Time	Priority	Repeat	Comment
m 🏠	SS000003	Run Command	Pending	6/4/99 9:37:20 PM	Low	Never	UMS Agent Install

```
Figure 115. The Job Queue
```

As soon as the job starts (depending on the time that you scheduled to start), the client machine will automatically open the Package Command Manager.

😼 Package Command Manager 💦 📃 🗆 🔀					
<u>File</u> <u>Command</u>	<u>_</u> Help				
₩ E <u>x</u> ecute	n n n n n n n n n n n n n n n n n n n	Archive			
👛 Pending Cor	mmands	Package Name	Command Name	<b>Becomes Mandatory</b>	Requires Input
🗖 Archived Co	mmands	IBM Universal Manageability	Typical Installation	Never	No
Executed Commands					
Ready					

Figure 116. Package Command Manager on the Client Machine

The Package Command Manager opens automatically and shows the status of the job. Click **Details** to get some information about the job.

Details	×
Package Name:	IBM Universal
Command Name:	Typical Installation
Expiration Date:	11/19/99
Requires user input:	No
Sent from Site:	SSO
Job ID:	SS000001
Command Line: SETUP.EXE	
Package comments:	
IBM System Manag	ement Tool
	ОК

Figure 117. Details from Package Command Manager

Click **Execute** in Figure 116 and the job will start to run. In our case, it ran SETUP.EXE, which was located on the server.

**Note**: Since you configured the job for a standard installation, you may have to continue the installation manually (choosing the options during the installation).



Figure 118. Starting the Installation on the Client Machine

# 3.7 Alerts

To prepare SMS to receive UM Services traps (a UM Services trap is an SNMP packet sent from one SNMP entity to another, in response to an event), you have

to configure the Site Properties. On the SMS Administrator main screen, select the domain where the workstation with UM Services is located. Click **File -> Properties**. A screen with the site properties will appear.

Click the SNMP Traps button.

e Properties				<u>ок</u>
Site code	SSO			
Site name Site version	ITSO-P( 786	C2150R		Cancel
Site server Site server domain	NTSRV SMSDO			Help
Install directory	D:\SMS			<u> </u>
Last report at (GMT) Last report at (Local)		10:02:37 PM 5:02:37 PM		
Inactive domains:	0	3.02.371 M		
Inactive senders:	ŏ			
				1
		[		
	© <b>∮∮</b> ≞ Clients	Figs	<b>ች ወዲም</b> Account	
Inventory		<u>S</u> ervices		/
<mark>i∳</mark> +€000 <u>P</u> arent Site				
	CO Conso Outboxes	Senders		

Figure 119. The Site Properties

After clicking the **SNMP Traps** button a new window opens. Select **Proposed Properties** (the radio button) and click the **Create** button.

dP Trap	s				
O <u>C</u> urr	ent Properties	© Proposed Propert	ies		OK Cancel
	ers at <u>S</u> ite SSO (I	-	<b>F</b> -ti	Constant	<u>H</u> elp
Active		IP Address	Enterprise	Generic 1	<u>H</u>
	escription	II Addiess	Linciprise	uchenc i	
		_			
•				•	
Properti	ies Crea <u>t</u> e	. Delete	Up	Do <u>w</u> n	
терен	Cicale		20	0.0101	

Figure 120. SNMP Trap Window

IP Trap Filter Properties		
Description: UMS SMNP 1		OK
		Cancel
When a trap meets the f	ollowing conditions:	Help
IP Address:		
Enterprise:		
⊙ <u>O</u> ID	1.3.6.1.4.1.2.6.159.1.1.0.1.1.4	
C NT <u>E</u> vent Source		
Generic Trap Type:		
✓ Cold Start	Authentication <u>Failure</u>	
🔽 🖳 arm Start	EGP <u>N</u> eighbor Loss	
🗹 Link Down	Enterprise Specific ID:	
☑ Link Up	×	
Perform this action:		
• Write to Database	C Discard	

Figure 121. SNMP Trap Properties

We included a short description and marked the **OID** radio button. We entered 1.3.6.1.4.1.2.6.159.1.1.0.1.1.4. To check the data that was included, click **OK**.

	rent Properties 🛛 🕫	Proposed Pro	operties		OK Cancel
Frap Filt Active	ters at <u>S</u> ite SSO (ITS) Description	D-PC2150R): IP Address	Enternrise	Generic Type	<u>H</u> elp
Active	UMS SMNP Traps	IP Address	Enterprise 1.3.6.1.4.1	Cold Start,	
4				F	
Properti	ies	Delete	Up	Down	

Figure 122. The SNMP Trap Included

The next step is to configure UM Services to send the traps to the server. From the UM Services screen (it can be accessed by SMS through the Tools menu, followed by UM Services Management Tools), click the **Tasks** folder. There are three subfolders:

- 1. Configuration
- 2. Tools
- 3. Web Links

At the Configuration folder, click SNMP.

RRA - Microsoft Internet Explorer	_ @ ×
Eile <u>E</u> dit <u>V</u> iew F <u>a</u> vorites <u>T</u> ools <u>H</u> elp	18
→     → </td <td></td>	
Address 🖉 http://wtr05311:411/index2.html	▼ 🖉 Go 🛛 Links ≫
IBH. Next System	9
Immanion       Tasks         Configuration       Add         A Adet On LAN       Add         A Asset ID       Add         B. Date & Time       Add         B. Network       Remove         Tools       D. DMI Information         B. Asset Octrol       Remove         Tools       Studdown         Web Links       R. System Updates	
UM Services	See Local intranet

Figure 123. SNMP Configuration on UM Services

We need to include the community name and the trap destination. Click the **Add** button (beside the box) and a box will be opened to enter the name.

Service	Service Configuration 🛛 🛛 🗙				
?	Community name				
~					
	OK Cancel				
Warning	Applet Window				

Figure 124. Entering the Community Name on SNMP Configuration

To insert the destination of the traps, you have to click the **Add** button (below the Trap Destination box).

Service Configuration X					
Postname, IP or IPX Address					
	OK Cancel				
Warning:	Applet Window				

Figure 125. Entering the IP Address on SNMP Configuration

After adding the community name and the IP address click Apply.

Ede Lide View Faroches Look Help       Edit         Back Forward Stop Refresh Homo Search Faroches History       Mail Pirk Edit         Address @ Imp.//w005311.411/ndec2.html       Refresh History         Idomation Table       Next System         Information Table       Refresh History         B. Action Links       Refresh History         Information Table       Refresh History         B. Action Lan       Refresh H	🗿 RRA - Microsoft Internet Explorer	_ & ×
Back       Forward       Stop       Refersh Home       Seach Favories Histoy       Mail       Pint       Edit         Address       Mit/Aud05111411/index2.html       Image: Configuration       Image: Configu	Eile <u>E</u> dit <u>V</u> iew F <u>a</u> vorites <u>I</u> ools <u>H</u> elp	- B
IBM.       Next System         Information       Configuration         Configuration       Add         A Aster ID       Add         B, Date X Time       Remove         B, Date X Time       Remove         Configuration       Remove         B, Dite Socially       Vers Decurity         Net Under Control       System Updates	Back Forward Stop Refresh Home Search Favorites History Mail Print Edit	
Information       Tasks         Configuration       A Adt (Dn LAN         Q. Asset ID       Dete Time         Q. Asset ID       Remove         Q. Nutwork       Remove         Q. Nutwork       Remove         Trap Destination       9.24 106.30         S. Shutdown       9.24 106.30         Web Links       Add         Q. System Updates       Add	Address 🖉 http://wtr05311:411/index2.html	▼ 🖉 Go 🛛 Links ≫
Configuration A Aget On LAN A Aget	IER. Next System	۵ 🕒
2 UM Services	Configuration A Ader: Dn LAN A Ader: Dn LAN A Asset ID Date & Time A Network Construction User Security Trap Destination Shutdown Web Links A System Updates Construction A dd Edt Remove Apply	Local intranet

Figure 126. The SNMP Screen Configured

# Chapter 4. SMS 2.0

The new version of Microsoft System Management Server has the same basic requirements for installation as V1.2 did, but its interface has changed.

After the SMS server installation, we installed the UM Services upward integration module (UIM) for SMS 2.0. The procedures for this installation are the same as SMS 1.2. Refer to 3.2, "Installing the Upward Integration Module for SMS" on page 23. The only difference is in Figure 40 on page 25. We chose SMS 2.0 Upward Integration to reflect the later version of the product.



Figure 127. Choosing the SMS 2.0 Upward Integration Module

After the installation, we launched the SMS Administrator Console.



Figure 128. Launching SMS Administrator Console

## 4.1 Discovery

To initiate the discovery of clients in SMS, you have to configure the Client Installation Methods under Site Settings. Click with the right button **Windows Networking Logon Client Installation -> Properties**.



Figure 129. SMS Administrator Console

After clicking Properties, a new window will appear. In this window, you have to enable the Windows Networking Logon Client Installation. The next time that the client machine connects to the domain server, SMS will include this machine in its database.

Windows Networking Logon Client Installation Properties	? ×
General Logon Settings	
Windows Networking Logon Client Installation	
Enable Windows Networking Logon Client Installation	
Keep logon point lists for discovery and installation synchronized	
Logon points:	×
Domain	
SMSDOM	
OK Cancel Apply He	IP

Figure 130. Enabling the Windows Networking Logon Client Installation
There is another tab called Logon Settings for the networking properties. You need to choose this option to enable the logon script modification.

Windows Networking Logon Client Installation Properties 💦 🔋	х			
General Logon Settings	_			
SMS can modify user logon scripts to install the SMS client software when users log on. Specify how to manage the user logon scripts.				
✓ Modify user logon scripts □ Location to insert script changes				
C Lop of existing script				
Bottom of existing script				
Logon point update schedule				
Update every: 1 🐳 Weeks				
⚠ WARNING: These settings also affect:				
Windows Networking Logon Discovery method				
OK Cancel Apply Help				

Figure 131. Changing the Logon Script Settings

After clicking **OK**, the system will return to the Client Installation Methods folder.

Next you have to configure the information that the server will gather on the client machine. Choose the **Client Agents** folder under Site Settings.



Figure 132. The Client Agents Folder

The first agent is the Hardware Inventory Client Agent. Click with the right button and choose **Properties**. Check the box **Enable hardware inventory on clients**. You should also configure a schedule for it.

Hardware Inventory Client Agent Properties
General
Hardware Inventory Client Agent
✓ Enable hardware inventory on clients
Inventory schedule
<u>Simple schedule</u>
Bun every: 1 Days
C <u>F</u> ull schedule
S <u>o</u> hedule
OK Cancel Apply Help

Figure 133. The Hardware Inventory Client Agent Properties

Click **OK** and return to the Client Agents folder. Choose **Software Inventory Client Agent** by clicking the right button and selecting **Properties**.

As with the hardware properties, enable the check box **Enable software** inventory on clients.

Software Inventory Client Agent Properties	? ×
General Inventory Collection File Collection	
Software Inventory Client Agent	
Enable software inventory on clients	
Inventory and file collection schedule	
<u>S</u> imple schedule	
Bun every: 1 Days	]   [
O <u>F</u> ull schedule	
Sehedule	
OK Cancel Apply He	;lp

Figure 134. The Software Inventory Client Agent Properties

Getting the inventory into SMS V2.0 is provided by the Windows management instrumentation included in UM Services. This is done during an SMS hardware inventory scan on the client and the creation of the MIF files. When a user installs UM Services on his or her SMS client, it adds a class to the root\cimv2\sms namespace called IBMPSG\_SMS\_Inventory\_scan. This class is a child of the SMS\_Class\_Template class. SMS looks for child classes of SMS\_Class\_template during inventory scans to tell it which WBEM objects to query for inventory information. When SMS finds IBMPSG\_SMS\_Inventory\_Scan, UM Services loads a CIM provider that in turn generates NOIDMIF files and writes them to \ms\sms\noidmifs. After SMS processes all of the SMS\_Class\_template classes, it scans \ms\sms\noidmifs and processes any MIF files that exist there. Once the inventory for a client has been added to the SMS database, the user can open the SMS Resource Explorer for that system and view both the SMS inventory information as well as information provided by SMS Services.

When UM Services senses an abnormal environment condition on an IBM system, it writes an entry to the UM Services System Health log and it generates a CIM event. The CIM event is translated to an SMS status message in SMS environments so that it will be visible from the SMS System Status Viewer in the SMS Admin Console.

In Figure 134 click **OK** to go back to the Client Agents folder. To enable the remote tools on the client, such as remote console, you have to configure the Remote Tools Client Agent.

Click with the right button and choose **Properties**. Check the box **Enable remote tools on clients**.

Remote Tools Client Agent Properties			
General Security Policy Notification Advanced			
Remote Tools Client Agent			
Enable remote tools on clients			
\Lambda WARNING:			
Agent since changes to these settings do not take effect after the agent since changes to these settings do not take effect after the agent is installed on the client.			
Clients cannot change Policy or Notification settings			
OK Cancel Apply Help			

Figure 135. Remote Tools Client Agent Properties

To start the discovery process you may have to (from the client machines) log in to the domain server again (that runs the logon script). After that, it will take a little bit of time until the server recognizes the clients.

After the discovery occurs, the Control Panel on the client machine will be added with new options.



Figure 136. New Features on the Client's Control Panel

The new features added are:

- 1. Advertised Programs: Shows the programs scheduled to run on the client machine.
- 2. Advertised Programs Monitor: Controls the programs scheduled, their activity, and problems.
- 3. Remote Control: Since we configured the server to allow remote control of the client machines, this feature shows the settings and the status.
- 4. Systems Management: Shows general information about the system, network configuration, sites and the components installed.

For the SMS server, UM Services includes new features for V2 of SMS.

🐕 sms - [Systems Management Server\Site Database (SRR - IBM - Raleigh)\Collections\All Systems with UMS client]				
Action ⊻iew   🗢 →   🔁 🗊 🗙 😭 😰				
Systems Management Server	Name		Resource Class	Domain
🖻 📲 Site Database (SRR - IBM - Raleigh)	NTSRV101		System	SMSDOM
i ∰ Site Hierarchy	WTR05311			CHEDON
🖻 🗐 Collections		" All Tas <u>k</u> s	Start Resource Ex	
All Systems		<u>D</u> elete	Distribute Software	•
- 🗃 All Systems with UMS client	Р <u>г</u> ор	<b>D</b>	Start Event to Trap Translator	
All Systems     All Systems     All Systems with UMS client     All User Groups		P <u>r</u> operties	Start Windows N	Event Viewer
🕀 🞯 All Users		Help	Start Windows NT	Diagnostics
🕀 💣 All Windows 3.1 Systems		·	Start Windows NT	Performance Monitor
🗄 🗃 All Windows 95 Systems			Start Remote Tool	2
🕀 🍻 All Windows 98 Systems				•
🗄 🌛 All Windows for Workgroups Systems			UMS Point-to-Poin	t Tools
🕀 🗃 All Windows NT Server Systems			Wake on LAN	
🖬 🗃 All Windows NT Systems				

Figure 137. New Features in the SMS Interface

In the Collections folder (where the systems are organized), a new collection will appear. It's the All systems with UMS client collection, which will join the systems where the UM Services Agent is installed. To access one system, you need to right-click a machine, choose **All Tasks** and then **UM Services Point-to-Point Tools**. A new frame (in the Microsoft Management Console (MMC)) will be opened with all the information about that system. Also, you can choose **Wake-on-LAN** to send a wake-up command to a machine (the machine needs to have the appropriate hardware and be configured to use this option - see 3.4.1, "Issue Wake-on-LAN Request" on page 40).



Figure 138. Accessing System Information Using MMC

Also, in the Queries folder, a new collection will be included by UM Services. The query is a set of criteria used to find objects in an SMS site database. As with the collection, the query All Systems with UMS client, is included.



Figure 139. New Query on SMS Interface

In the Tools folder, a new feature called UMS Point-to-Point Tools will be added. This feature launches the MMC, which has all of the UM Services Systems in a separate frame. The MMC's view is equivalent to the browser (on SMS V1.2), with the same functions. Only the interface has changed. But if you want to use the browser, there is no problem. The process is the same as on SMS V1.2. Please, refer to 3.4.2, "UM Services Management Tools" on page 41.

**Note:** Since MMC uses the Internet Explorer features to load the data if your default browser is not the Internet Explorer, you'll need to update the libraries. If the MMC is not working properly, check Figure 82 on page 43 to see the libraries that might be missing.



Figure 140. The UM Services Point-to-Point Tools Folder

To access any folder in the SMS interface you need to use the right mouse button.

Looking at Figure 137 on page 69, you can see that UM Services includes the Point-to-Point Tool to access a specific machine. But, in the Tools folder (as you can see in Figure 140 on page 70) you can use the MMC to access all of the systems.



Figure 141. The UM Services Console Launched Through the Point-to-Point Tool

The UM Services Console has the same functions as the browser. You can see that in the next two figures:



Figure 142. System Options Using the MMC

Eile     Edit     View     Favorites       ↓     ↓     →     ↓     ⊗       Back     Forward     Stop	한 🚮 🧿 Refresh Home Search	Tavorites History Mail Print Edit
Address 🥙 http://wtr05311:411.	/index2.html	💌 🖉 Go 🗍 Lin
IBM. 🗖	Next System	• ?
Information Tasks Inventory 	Processor: System:	Intel Pentium II or Pentium II Xeon processor 350MHz Internal L1 Cache (32k) Internal L2 Cache (512k) IBM unknown BIOS mfr Default System BIOS IBM BIOS Ver NTKT19.0 2/9/99 PCI (3), ISA (3), AGP (1) 127MD RAM
	OS: Storage:	Microsoft Windows NT Server 4.0.1381 SCSI Fixed Disk (4298 Mb)
	Video: Network:	CD-ROM S3 Compatible Display Adapter IBM Shared RAM Token-Ring Adapter MAC - 00:06:29:11:5F:61 IP - 9.24.106.102
	•	
UM Services		Steel Local intranet

Figure 143. System Options Through the Browser

**Note:** To access the systems from a browser you need to start it manually. There is no option to launch the browser through SMS.

## Chapter 5. Tivoli NetView Upward Integration Module

The UM Services Upward Integration module for Tivoli NetView was installed on a Netfinity 3000 Server (model 8476-21U) that was running Windows NT V4.0 with Service Pack 4 installed. Windows NT was installed as part of Backoffice V4.5. In addition, since we needed a database to work with Tivoli NetView we installed SQL V7.0 that was also part of Backoffice V4.5.

We installed the latest level of code for Tivoli NetView (V5.1.1). You need to make sure that your ODBC-compliant database is installed before installing Tivoli NetView. In addition, you should make sure that the SNMP service is installed and started.

While the focus of this chapter is the integration between UM Services and Tivoli NetView we show some of the setup that occurred in order to achieve the integration points.

To install Tivoli NetView V5.1.1 execute the setup.exe module:

NetView Setup
Type your full name in the box below. You may also specify the name of your company if this product will be used for business purposes. Setup uses these names during the installation.
You may use as many as 52 uppercase and lowercase characters or spaces for each string.
Name: barry nusbaum
Company: ibm-itso
<u>C</u> ontinue <u>E</u> xit

Figure 144. Tivoli NetView Initial Window

You need to make sure that you have enough disk space to install the product as well as disk space for the various databases that Tivoli NetView will build and maintain. This of course implies that you need to install your database product before you install Tivoli NetView.

NetView Setup	×
Select a Destination Disk Drive	
This will install the NetView V5.1.1 files in \usr\ov.	
An initial installation requires 115 megabytes.	
Install on Drive 🚺 💌 1336 Megabytes	
<u>C</u> ontinue <u>E</u> xit <u>H</u> elp	

Figure 145. Disk Space

You can choose to install the server code, the client code or both. We chose **Single User** (both).

N	etView S	etup	×
	- Installati	on Mode	_
	7	Select one of the following installation modes:	
		<ul> <li>Single User</li> </ul>	
		O Server	
		C Client	
		<u>C</u> ontinue <u>E</u> xit <u>H</u> elp	

Figure 146. One Machine - One Client Server

You will be prompted for a user ID and password that Tivoli NetView can use to modify your system. In our case we used the default ID that was suggested (NetView).

NetView Setup
NetView Account Setup
NetView requires an account to start the NetView service.
This account will be added to the Administrators group and given the 'Log on as a service' user right.
Enter the password for the NetView account.
Username: NetView
Password:
Confirm Password: XXXXXXXX
<u>Continue</u> <u>E</u> xit <u>H</u> elp

Figure 147. Administrator User ID

In most cases you should select Discover Only Local Networks since discovering all networks will produce lots of network traffic and possibly cause some traffic slowdowns if you do not have enough bandwidth. You can use a seed file once Tivoli NetView is up and operational to manually add other subnets. The default location of the seed file is \usr\ov\conf\netmon.seed. You can use wildcards to specify addresses or you can use specific addresses and NetView will broadcast its discovery through that subnet. In addition, you can manually add other subnets while the Tivoli NetView console is running. That is done by clicking the **Options** pull-down menu followed by **Server Setup**.

NetView Setup	×
Discovery Scope	
Select one of the following discovery scopes:	
C Discover Only Local Networks	
Discover All Networks	
Caution: This can be resource intensive	
<u>C</u> ontinue <u>E</u> xit <u>H</u> elp	

Figure 148. Discovery

Tivoli NetView uses SNMP broadcasts to perform its discovery. In addition to using the default community name of Public you can enter other community names that it will use during its broadcast search.

NetVie	/ Setup	×
⊢ Alte	nate Community Names	1
	Your network may use a few read-only SNMP community names for most nodes. Enter up to six of these community names to be used during initial discovery of the network. Do not enter the default community name.	
	Enter up to six Alternate Community Names.	
	Community Name 1	
	Community Name 2	
	Community Name 3	
	Community Name 4	
	Community Name 5	
	Community Name 6	
	<u>C</u> ontinue <u>E</u> xit <u>H</u> elp	

Figure 149. Community Names

Click **Continue** for the rest of the installation to occur. If you have an ODBC database installed you will see the left-hand figure in the following window. If you have not yet installed a database you will get the error message in the right-hand part of the following window:



Figure 150. Database Installed or Database Not Installed

For the purposes of discovering what UM Services are available we used the default configuration parameters that were available with the SQL 7.0 installation.

-	SQL Server 7.0 Settings Change SQL Server settings as appropriate for your installation.				
Pro	perty	Setting	-		
$\checkmark$	Named Pipes	\\.\pipe\sql\query			
	TCP/IP Sockets	1433			
	Remote Winsock Proxy				
	NWLink IPX/SPX	BARRYPS2			
	AppleTalk ADSP	BARRYPS2			
	Banyan VINES	BARRYPS2			
	Allow Multiple Protocols				
[ [	Enable Multi_Protocol encryption				
$\checkmark$	Character Set	1252/ISO Character Set (Default)			

Figure 151. SQL 7 Settings

After the installation of Tivoli NetView has completed we rebooted the system and clicked **Start -> Programs -> NetView -> Administration -> Server Setup**. The following window shows that all of the daemons are up and operational. Since we know that our NetView environment is working it is OK to install the UM Services integration component. We had already installed the UM Services base component on this system before we installed Tivoli NetView.

🚀 NetView Serve	r Setup			
Daemons Files	Databases Discov	ery Service		
Daemon	Behavior	State	Last Message	
netmon nvcold nvpagerd ovwdb snmpcollect trapd	well_behaved well_behaved well_behaved well_behaved well_behaved well_behaved well_behaved	Running Running Running Running Running Running	Initialization complete. Initialization complete. Initialization complete. Initialization complete. Initialization complete. Initialization complete. Initialization complete.	

Figure 152. Server Setup

To install the integration component you run setup.exe (just as you did when you installed UM Services). After the Welcome window click **Next**.



Figure 153. Initial Installation Window

After clicking **Next**, select the language and acknowledge the license agreement. The next window is for installing the integration component. While it is not a requirement that you also install the UM Services component on the same system as your Tivoli NetView console, we performed that task earlier (see 2.1, "Installation" on page 4).



Figure 154. UM Services or Integration Module

In addition to the Tivoil NetView integration module there are also upward integration modules (UIM) for CA Unicenter, SMS and Intel Alert on LAN. For this piece of the install process click **Tivoli NetView Upward Integration**.



Figure 155. Tivoli NetView UIM

There are no other installation choices to make other than clicking **OK** the following window:

Informati	on 🗙
٩	Tivoli NetView support installed succesfully
	[OK]

Figure 156. Installation Successful

The installation process adds:

- A UM Services SmartSet
- V2 MIBs
- · Online help panels
- Configuration information for trapd.conf
- New icons for UM Services
- Information to nvsniffer.conf (isUMSHttp, isUMSSnmp and isUMSCim) so that it can find UM Services in the network

After you have installed the UM Services and the integration component you need to reboot your system. After your system has rebooted you are almost ready to access the new functions.

## 5.1 Discovering UM Services Clients

Tivoli NetView has an application called nvsniffer that does a broadcast discovery of different classes of devices out in the network. When we installed the integration component it added some configuration information to the file \usr\ov\conf\nvsniffer.out. The following lines of coded were added:

(	
# UMS nvsniffer discovery	
#	
#discover UMS agent by testing the SNMP OID	
#isUMSSnmp .1.3.6.1.4.1.2.6.159   \usr\ov\bin\snmpsniffext.dll	
\usr\ov\bin\snmpsniffext.dll  *	
isUMSCim    \usr\ov\bin\umscimtest.dll \usr\ov\bin\umscimtest.dll *	
isUMSHttp 411,6500,6411,6611,6600 UM Services Universal Management	
Services \usr\ov\bin\umshttptest.dll \usr\ov\bin\umshttptest.dll *	
#Create tools (UMS agent and Netfinity Director) within the UMS systems	
#isUMStool    \usr\ov\bin\sniffEAR.dll  UMSSystems	
#	

The command that you need to run before you restart Tivoli NetView is:

nvsniffer -l logfile -v

It runs the sniffer and places the output in a file as well as in a command prompt window so you can see the discovery process occurring. To retrieve inventory information for a system, isUMSCim must be enabled when running nvsniffer. If the user wants to run nvsniffer and just have it runthe UM Services-specific tests they can use the following command:

```
nvsniffer -c nvsniffer_ums.conf -v
```

To view data for a specific system use:

ovobjprint -s systemname

Note: Be sure to uncomment the lines that have UMS search criteria on them.

CMD PROMPT
dyn9-89-47-186.ibmus2.ibm.com (9.89.47.186)
Setting Fields:
sp-n12.ibmus2.ibm.com (9.89.40.162)
Setting Fields:
dserrano.ibmus2.ibm.com (9.89.41.104)
Setting Fields:
dyn9-89-46-94.ibmus2.ibm_com (9.89.46.94)
Setting Fields: isHTTPSupported
dyn9-89-47-66.ibmus2.ibm.com (9.89.47.66)
Setting Fields:
dyn9-89-44-2.ibmus2.ibm.com (9.89.44.2)
Setting Fields:
dyn9-89-42-2.ibmus2.ibm.com (9.89.42.2) Setting Fields:
bowsadxrepb01.ibmus2.ibm.com (9.89.42.104)
Setting Fields:
dyn9-89-44-230.ibmus2.ibm.com (9.89.44.230)
Setting Fields:
dyn9-89-44-34.ibmus2.ibm.com (9.89.44.34)
Setting Fields:
Discover mode tested 32 of 32 nodes; see \usr\ov\log\nv.log for any errors; fini
shed on Wed Jun 30 13:27:19 1999
C:\screens\ums\netview>

Figure 157. Discovery Process

The nvsniffer application searches your already discovered devices to find specific applications (by port number). When you installed UM Services the default port that was provided was 411. The nvsniffer application groups applications logically into objects called SmartSets. These SmartSets are automatically populated for you as part of the nvsniffer application. The

UM\_Services SmartSet gets created as part of the installation of the NetView integration module.

You should have the Tivoli NetView console interface down when you run nvsniffer. Even though the console interface is not operational the daemons are still running in the background.

The installation of the UIM modifies the Tools menu. It adds two items:

- 1. Universal Manageability Services To launch a browser.
- 2. UM Services Inventory To display inventory information.



Figure 158. Tivoli NetView Tools Applications

The following window shows the output from a few of the inventory categories:

🖆 UM Services Query - barryps2					
LCCM Image Profile	e LCCM Image Da	ate System Serial Number	System UUID	System Asset Nu	
<null></null>	1999062500000	00 23M1809	80CCA9D0-4	1	
📔 UM Services Q	uery - barryps2			_ 🗆	
SNMP Traps Enabl	e Trap Destination	\$			
RU	"9.89.41.191", "9.24.104.15", "9.89.41.192"				
🎦 UM Services Q	uery - barryps2				
Name	/ersion	Build Number			
UMServices	UMServices 2.0 WMYT15AUS				
🖆 UM Services Query - barryps2					
User Name	User Phone	User Department	User Position	System	
barry nusbaum	<null></null>	hz8d	<null></null>	Raleigh	

Figure 159. The Results of Different Inventory Queries

From the Tivoil NetView console you can either click your way through the submaps to find specific devices or you can search for them. Since we had selected to discover only our local subnet it was very easy to find our system:



Figure 160. 9.89.40 Segment

If you right-click **barryps2** you can see what properties are associated with it. You should look at the Capabilities tab:

E Object Properties	- barryps2
General Symbol C	apabilities Type Events Collected Data Availability Other
Object Capabilities	
	Node Computer PC IP WBEM
	NetView
SNMP:	Supported
XXMAP:	
Vendor:	Microsoft
SNMP Agent:	Microsoft Windows NT 4.0
	Other Capabilities

Figure 161. Capabilities

When you click the **Events** tab you can see what events have flowed through Tivoli NetView for this device. Notice that a few of them are UM Services related.

Object Properties -	barryps2			
General   Symbol   Cap	abilities Type Ev	ents Collected Data Availability Other		
Time	Severity	Description		
30 Jun 1999 12:54:44	Indeterminate	ovtopmd registering with trapd daemon		
30 Jun 1999 13:00:23	Indeterminate	ovtopmd registering with trapd daemon		
30 Jun 1999 13:00:23	Indeterminate	Node Added.		
30 Jun 1999 13:13:20	Indeterminate	ovtopmd registering with trapd daemon		
30 Jun 1999 13:13:57	Indeterminate	Service Web Server Added		
30 Jun 1999 13:13:57	Indeterminate	Service Web Server Normal		
30 Jun 1999 13:14:12	Indeterminate	Service NetView Server Added		
30 Jun 1999 13:14:12	Indeterminate	Service NetView Server Normal		
30 Jun 1999 13:14:13	Indeterminate	Service Universal Management Services Added		
30 Jun 1999 13:14:13	Indeterminate	Service Universal Management Services Normal		
30 Jun 1999 13:18:23 Indeterminate ipmap registering with trapd daemon				
30 Jun 1999 13:30:11	Indeterminate	linman, registering with trand daemon		

Figure 162. Events

If you go to the Tivoli NetView console initial window and click **SmartSets** you get a list of all the different types of applications that have registered. If nvsniffer has discovered (through its broadcast mechanism) devices that are operational you should see the SmartSets show up in green. For example, if you look at the last row you can see the one for UM Services.

🖓 SmartSets					
Root	BadMasks	BadOIDs	BusinessSet1	BusinessSet2	BusinessSet3
		CriticalNodes			$\bigcirc$
			DNSServers		
		LotusNotes	MLMs	NetViewServers	NewsServers
		$\bigcirc$	$\bigcirc$		
	P0P3Servers	Printers	Routers	SocksServers	SQLServers
			nvs	sniffer output	goes here
	DM_Services	WebServers		•	

Figure 163. SmartSets

If you double-click **UM Services** you get a window that shows all the discovered UM Services systems. From that window you can launch the Web browser or review inventory-related information.

🏆 TME 10 NetView - default [Basic Menu]	
<u>File Edit Object Submap View Monitor Test</u>	Tools Options Window Help
(Find)	<u>M</u> IB ► System ►
WM_Services [Status Includes Service]	Web Browser 🕨 🕨
Root	Universal Manageability Services UM Services Inventory Internet Etp
Smart-	

Figure 164. SmartSet Discovered Devices

If you click **Universal Manageability Services** your Web browser gets launched and you are prompted for the user ID and password to access UM Services information on that agent.

Enter Net	work Passwo	rd	? ×
<b>?</b> >	Please type yo	our user name and password.	
₿ <sup>°</sup>	Site:	barryps2	
	Realm	IBM UMS	
	<u>U</u> ser Name		
	<u>P</u> assword		
	$\Box$ Save this p	password in your password list	
		OK Car	ncel

Figure 165. Security Check

After the security check is complete you get the regular UM Services browser window.

🙆 barryps2 - Microsoft Internet	Explorer	_ 🗆 🗵
<u> </u>	<u>I</u> ools <u>H</u> elp	
Back Forward Stop	[2] 슈 (Q) 후 영상 [2] · (국) Refresh Home Search Favorites History Mail Print	
🛛 Address 🙋 http://barryps2:411/in	idex2.html	∂Go ∐Links ≫
iem. 👼	Next System	9
Information Tasks Tasks Tasks Tasks Tasks Tasks Tasks Tasks Tonly Tasks Tasks Tasks Tonly Tasks Task	Community Name	

Figure 166. UM Services Browser Interface

Go back to Tivoli NetView and find your UM Services system. Right mouse click and select **Explore**:



Figure 167. Explore

The resulting window shows you all the capabilities for that system.



Figure 168. SmartSets View

There are a few MIBs that are provided (and installed with) the UM integration. You need to use the MIB2 browser and loader rather than the older MIB application. You can manually start the MIB2 browser from \usr\ov\bin\loadmibv2.exe. If you need to load a new MIB, click **Load**. The MIBs that are provided with UM Services are:

- cimwin32.mib
- ums.mib
- umsagent.mib
- umsaol.mib
- umsevent.mib
- umsvpd.mib

MIB Loader	<u>_                                    </u>
Loaded MIBs	
cimwin32.mib rfc1213	<u>C</u> lose
snmpv2-smi.mib snmpv2-tc.mib	Load
snmpv2-usec ums.mib umsagent.mib	<u>U</u> nload
umsaol.mib umsevent.mib	<u>H</u> elp
umsvpd.mib	
MIB database: /usr/OV/conf/snmpv2mib	

Figure 169. MIBs Already Loaded

To browse the contents you need a MIB2 browser. It is located in \usr\ov\bin\browserv2.exe.

Ento protivor parilibre		
Node Name or Address barryps2 Community Name public	Get Selected	<u>Node from Map</u> t Community
MIB Object ID .iso.org.dod.internet.private		<u>B</u> ookmarks
enterprises		Up Tree Down Tree Graph
MIB Values	Get <u>V</u> alues	Eroperties
2.6.159.1.1.1.7.1.1 : IBM. 2.6.159.1.1.1.8.1.1 : WMYT15A 2.6.159.1.1.10.1.1.1.1 : IBMPS0 2.6.159.1.1.10.1.1.2.1.1 : IBMS 2.6.159.1.1.10.1.1.2.1.1 : IBM. 2.6.159.1.1.10.1.1.4.1.1 : 2.0. 2.6.159.1.1.10.1.1.5.1.1 : SNMP. 2.6.159.1.1.10.2.1.1.1.1 : IBMPS0 2.6.159.1.1.10.2.1.2.1.1 : IBMPS0 2.6.159.1.1.10.2.1.2.1.1 : IBM 2.6.159.1.1.10.2.1.4.1.1 : 2.0. 2.6.159.1.1.10.2.1.5.1.1 : SNMP.	MServices. N98 WINNT. US. SIUMServices SN ices.	

Figure 170. .iso.org.dod.internet.private.enterprises

You can also see all of the Tivoli NetView events. You can filter which events flow through Tivoli NetView as well as customize specific actions to occur as a result of the event occurring.

	🖬 👝 🌇 🗄 😤 🕶 🖀 🍞 🚈 🦹 All Events 🖃				
Time	Severity	Node	Description		
30 Jun 1999 13:05:21	Indeterminate		addtrap changed format file /usr/OV/conf/trapd.conf		
30 Jun 1999 13:05:25	Indeterminate		addtrap changed format file /usr/OV/conf/trapd.conf		
30 Jun 1999 13:05:29	Indeterminate		addtrap changed format file /usr/OV/conf/trapd.conf		
30 Jun 1999 13:05:34	Indeterminate		addtrap changed format file /usr/OV/conf/trapd.conf		
30 Jun 1999 13:05:38	Indeterminate		addtrap changed format file /usr/OV/conf/trapd.conf		
30 Jun 1999 13:05:43	Indeterminate		addtrap changed format file /usr/OV/conf/trapd.conf		
30 Jun 1999 13:05:47	Indeterminate		addtrap changed format file /usr/OV/conf/trapd.conf		
30 Jun 1999 13:05:50	Indeterminate		addtrap changed format file /usr/OV/conf/trapd.conf		
30 Jun 1999 13:05:54	Indeterminate		addtrap changed format file /usr/OV/conf/trapd.conf		
30 Jun 1999 13:13:20	Indeterminate		SNMP Data Collector started		
30 Jun 1999 13:13:57			Service Web Server Added		
30 Jun 1999 13:13:57			Service Web Server Normal		
30 Jun 1999 13:13:57			Service Web Server Added		
30 Jun 1999 13:13:57			Service Web Server Normal		
30 Jun 1999 13:13:57	Indeterminate		Service Web Server Added		
30 Jun 1999 13:13:57	Indeterminate		Service Web Server Normal		
30 Jun 1999 13:14:01			Service Web Server Added		
30 Jun 1999 13:14:01			Service Web Server Normal		
30 Jun 1999 13:14:01		-,			
30 Jun 1999 13:14:01		dyn9-89-46-94.ibmus2.			
30 Jun 1999 13:14:12	Indeterminate		Service NetView Server Added		
30 Jun 1999 13:14:12	Indeterminate		Service NetView Server Normal		
30 Jun 1999 13:14:13	Indeterminate		Service Universal Management Services Added		
30 Jun 1999 13:14:13			Service Universal Management Services Normal		
30 Jun 1999 13:14:57	Critical		Interface css0 down. CRITICAL		
		sp-n12.ibmus2.ibm.com			
30 Jun 1999 13:15:07	Critical		Interface en0; down. CRITICAL		
30 Jun 1999 13:34:07 30 Jun 1999 13:34:07	Critical Critical	dyn9-89-44-34.ibmus2. dvn9-89-44-34.ibmus2.	Interface 9.89.44.34 down. CRITICAL		

Figure 171. nvevents

To be able to see and set Trap settings you need to make sure that the console is running in advanced mode. In the Tivoli NetView console click the **Options** pull-down menu and select **Advanced Menu** if it doesn't already have a check mark next to it. Then shut down and restart the Tivoli NetView console interface.



Figure 172. Advanced Menu Settings

Then click Trap Settings.

Enterprise		ID					
npnp_printer		1.3.6	.1.4.1.11.2	.3.9.1			
npux			.1.4.1.11.2				
bm			.1.4.1.2.6.1	59			
bm		1	.1.4.1.2				
bm6611		1.3.b	.1.4.1.2.6.2	2			
Only Display Enter elect a trap	erprises v	wur naps	<u>N</u> ew.	··			
Trap	Number	Description	Category	Severity	Source	Status	Comman 🔺
BMPSG AssetEive	8	Asset cond	Statue Ev.	Critical	Load M	Critical	
		Association a	oracus E.v.	ondoar	COOO II	Chicay	
BMPSG_ChassisEv	4	Chassis cor	Status Ev	Critical	Load M	Critical/	
BMPSG_ChassisEv BMPSG_ConfigCha	4 11	Chassis cor Configuratic	Status Ev Status Ev	Critical Critical	Load M Load M	Critical/ Critical/	
BMPSG_ChassisEv BMPSG_ConfigCha BMPSG_FanEvent	4 11 5	Chassis cor Configuratic Fan conditi	Status Ev Status Ev Status Ev	Critical Critical Critical	Load № Load № Load №	Critical/ Critical/ Critical/	
BMPSG_ChassisE↓ BMPSG_ConfigCh≀ BMPSG_FanEvent BMPSG_LANLeasI	4 11 5 12	Chassis cor Configuratic Fan conditi LAN Leash	Status Ev Status Ev Status Ev Status Ev	Critical Critical Critical Critical	Load № Load № Load № Load №	Critical/ Critical/ Critical/ Critical/	
BMPSG_ChassisEv BMPSG_ConfigCha BMPSG_FanEvent BMPSG_LANLeasl BMPSG_LeaseExp	4 11 5 12 13	Chassis cor Configuratic Fan conditi LAN Leash Lease expir	Status Ev Status Ev Status Ev Status Ev Status Ev	Critical Critical Critical Critical Critical	Load № Load № Load № Load №	Critical/ Critical/ Critical/ Critical/ Critical/	
BMPSG_ChassisE↓ BMPSG_ConfigCh≀ BMPSG_FanEvent BMPSG_LANLeasI BMPSG_LeaseExp BMPSG_POSTEv€	4 11 5 12 13 10	Chassis cor Configuratic Fan conditi LAN Leash	Status Ev Status Ev Status Ev Status Ev Status Ev Status Ev	Critical Critical Critical Critical Critical Critical	Load № Load № Load № Load №	Critical, Critical, Critical, Critical, Critical, Critical,	
BMPSG_ChassisEv BMPSG_ConfigCha BMPSG_FanEvent BMPSG_LANLeasl BMPSG_LeaseExp	4 11 5 12 13 10 6	Chassis cor Configuratic Fan conditi LAN Leash Lease expir Power On S	Status Ev Status Ev Status Ev Status Ev Status Ev Status Ev Status Ev	Critical Critical Critical Critical Critical Critical Critical	Load M Load M Load M Load M Load M Load M	Critical, Critical, Critical, Critical, Critical, Critical, Critical,	
BMPSG_ChassisEv BMPSG_ConfigCha BMPSG_FanEvent BMPSG_LANLeasl BMPSG_LeaseExp BMPSG_POSTEve BMPSG_Processol	4 11 5 12 13 10 6	Chassis cor Configuratic Fan conditi LAN Leash Lease expir Power On S Processor c	Status Ev Status Ev Status Ev Status Ev Status Ev Status Ev Status Ev	Critical Critical Critical Critical Critical Critical Critical	Load M Load M Load M Load M Load M Load M Load M	Critical, Critical, Critical, Critical, Critical, Critical, Critical,	▼ ▶

Figure 173. Trap Settings

To change some of the actions, click **Properties**.

Trap Properties
Set the Trap Properties
Enterprise: ibm Trap Type: Specific #8
Trap Name PSG_AssetEvent
Display the Trap Category as     With Severity     From this Source       Status Events <ul> <li>Critical</li> <li>Load MIB</li> <li> </li></ul>
Object Status for Specific Traps
Event Description
Asset condition critical
Run this command when the trap is received     Run as       Hidden Application     Test
<u>OK</u> <u>Apply</u> Reset <u>Cancel</u> <u>H</u> elp

Figure 174. Trap Properties

## Chapter 6. Tivoli Framework and Plus Module

This chapter shows how to integrate the Tivoli Plus module with UM Services. We show the installation of the framework and the Tivoli Plus module as well as many of the individual functions since the setup of the environment is an important prerequisite to having all of the Tivoli Plus module's functions enabled.

In our case we used a Netfinity 3000 Server running Windows NT 4.0 with Service Pack 4. In addition, since the level of the Tivoli Framework that we used (V3.6) did not support DB2 (V3.6.1 does) we used Microsoft SQL for our database support. After the project completed we did some testing with V3.6.1 and DB2 V5.2 and we did use many of the functions.

Our first step was to install the Tivoli desktop environment. While the desktop GUI interface could have been installed on any of our systems, we installed it on the same one as the framework. In addition, for this chapter we only used Windows NT. While AIX is supported for the framework and the Plus module (as are other platforms), there was no additional benefit to using it (or any other Tier-1 operating system) since the UM Services interface only applies to the Windows environment. The clients that you are operating against must be Win32, but not the Plus module interface itself.



We ran setup.exe from \Pc\Desktop\Disk1\ to install it.

Figure 175. Install the Tivoli Desktop

That is the last prompt that you will have for the desktop installation. Following that you can begin to install the framework. It is on the same CD-ROMbut the setup.exe is in the root directory. Run it and you will be prompted to enter your name and your company's name.

User Information		×
	Type your name below. You must also type the name of the company you work for.	
	N <u>a</u> me: barry nusbaum Company: ibm-itso	
Ś		
_	< <u>B</u> ack <u>N</u> ext > Cancel	-

Figure 176. User Information

After clicking **Next** you are prompted to enter an installation password. You need to remember this password as it is used to install Tivoli-related software on other machines. For example, if you are going to create a managed node you need to know the installation password. When you enter it, it is not blanked out. Therefore, you are not prompted to enter it twice.

Installation Password	×
	If desired, enter an Installation Password. This password will need to be given on subsequent ManagedNode installations.
	< <u>B</u> ack <u>N</u> ext > Cancel

Figure 177. Password

When you install the Tivoli framework it should be done with the administrator user ID. Even if another ID has administrator rights we have found that there can be some problems. After it is installed you will be able to add other user IDs and access it from the other IDs. For the installation to be successful your administrator ID needs to have access to the file systems that it will store data on, on all systems in the infrastructure. This should not be a problem with most administrator IDs.



Figure 178. File Access

You can run Typical, Compact or Custom; we chose **Custom**. In most cases it's a good idea to select custom so you can see what the different options are.



Figure 179. Prepare for Installation

After clicking Next we selected all of the components in the following window:



Figure 180. Tivoli Framework Components to Install

You need a license key to proceed. If you don't have one, there is no other way to continue. While this install was on the Windows NT platform, the same is true for all platforms.



Figure 181. License Key

After entering your license key click **Next** and decide in which directory to store the database. You should be using an NTFS drive for the installation of the framework and the database.



Figure 182. Location of the Tivoli Database

After the database is installed you need to reboot the system to be able to use the code. You can either modify your environment variables or make sure your logon script runs \winnt\system32\drivers\etc\tivoli\setup\_env.cmd. A partial copy of it follows:

```
set BINDIR=d:\Tivoli\bin\w32-ix86
set DEDIR=d:\Tivoli\db\barryps2.db
set o_dispatch=94
set INTERP=w32-ix86
set PERLLIB=%BINDIR%\tools\lib\perl
set TivPath=%BINDIR%\tools\lib\perl
set TivPath=%BINDIR%\bin;%BINDIR%\tools;%BINDIR%\ADE;%BINDIR%\AEF
set Path=%TivPath%;%Path%
set TEMP=%DBDIR%\tmp
set TISDIR=%BINDIR%\..\generic
set WLOCALHOST=
set NLSPATH=d:\Tivoli\msg_cat\%%L\%%N.cat
```

If you decide to update the system variables you need to click **Start -> Settings** -> **Control Panel -> System** and then update the Environment tab.

System Properties Startup/Shutdown General	Hardware Profiles     User Profiles       Performance     Environment
System Variables: Variable BINDIR BOOKSHELF CLASSPATH ComSpec DB2INSTANCE	Value D:\Tivoli\bin\w32-ix86 D:\fior\WIN\BIN\EN_US D:\SQLLIB\java\db2java.zip;D:\SQLLIB\jav C:\W/INNT\system32\cmd.exe DB2
User Variables for Adm Variable TEMP TISDIR TMP	iinistrator: Value C:\TEMP d:\tivoli\desktop C:\TEMP
Variable: ┃ Vajue: ┃	S <u>e</u> t <u>D</u> elete
	OK Cancel Apply

Figure 183. System Environment Variables

You should also check that the user ID administrator received the correct privileges during the install:

👷 User Manager - \\BARRYPS2					
User View Policies Options	<u>H</u> elp				
Username	Full Name	Description			
👷 Administrator		Built-in account for administering the computer/domain			
& barry db2admin & Guest IUSR_BARRYPS2 & SQLAgentCmdExec & tmersrvd	Internet Guest Account SQLAgentCmdExec tmersrvd	Built-in account for guest access to the computer/domain Internet Server Anonymous Access SQL Server Agent CmdExec Job Step Account Tivoli Unprivileged Operations Account (required)			
	Group Memb	erships			
	Member of:	r Users cator			
		_Admin_Privilege			

Figure 184. Group Memberships

After installing the framework we installed a Managed Node and a PC Managed Node. We did not provide all the details for this installation as it is provided in many of the Tivoli product manuals as well as other redbooks.



Figure 185. ManagedNode Installation



Figure 186. PCManagedNode Installation

The following window shows the topology we used for the rest of this chapter. While it is not a large number of systems, it is enough to show how the various functions work.

👚 Policy R	egion: barryps	2-region	
<u>R</u> egion <u>E</u> d	it <u>V</u> iew <u>C</u> reate	Properties	<u>H</u> elp
TMP/NT barrynt	TMP/NT barryps2	windows95 barryip	
Find Nex	t Find All		
, Managed No	ode		

Figure 187. All of the Systems in Our Environment

Once the framework and the systems were installed we needed to install the database that we were going to use and the applications with which the UM Services Plus module would integrate. We installed:

- Microsoft SQL V7.0
- Tivoli Inventory V3.6
- Tivoli Software Distribution V3.6
- Tivoli Enterprise Console (TEC) V3.6
- Tivoli Distributed Monitoring V3.6
- UM Services Plus Module

## 6.1 Microsoft SQL V7.0

We installed SQL V7.0 from the Microsoft Backoffice V4.5 CD-ROMs. This is not a requirement. We could have installed it directly from the SQL product CD-ROMs or we could have used SQL V6.5. In addition, with V3.6 of the Tivoli Framework we could have used Sybase or Oracle as well. With V3.6.1 we could have added DB2.



Figure 188. Install SQL V7.0

After clicking **Next** you are prompted to agree to the license considerations.



Figure 189. SQL License Agreement

Following the license agreement you can enter your name and your organization's name. This will be saved and propagated into other menus later.

Identification The following information will personalize your installation.				
Please type you	full name and the name of your company or organization below.			
Na <u>m</u> e:	barry nusbaum			
Organization:	ibm			
	Back Cancel			

Figure 190. Name and Organization

You can have the system store, in the registry, the user ID and password of this system. We did not choose to do this as it is a potential security risk. Upon startup, the system would automatically log on. Unless this system is physically and logically secure, check the box I will log on manually after restarts.

	sword ssword if you would like Setup to automatically logon after restarting. on will be disabled when Setup is complete.	${}^{}$
Username:	db2admin	
Domain: Password:	BARRYPS2	
□ <u>I</u> will log o	n manually after restarts	
	<u>B</u> ack <u>N</u> ext Car	ncel

Figure 191. Auto Logon

After you click **Next** the installation of the setup files begins.

Since we installed from the BackOffice CD-ROMs we can get more specific as to which functions get installed. Click **Custom -> Next**.



Figure 192. Customizing your BackOffice Installation

If you still had Microsoft Gopher installed from a previous release of Windows NT it will be removed.



Figure 193. Removing Old Code

We only selected the SQL 7.0 components that we needed. You should consider including the online books unless you are already familiar with SQL 7.0. As with all products, you should not put the product code in the same drive as other products that will be heavily used. You should not keep the database on the same volume as your swap file or the code. We did not go beyond these basic tuning points.

BackOffice Server Programs and Their Comp Select the programs you want to install or upgrad		Ð		
BackOffice Programs	Action Installed Version	Disk Sp 🔺		
🗹 🖃 SQL Server 7.0	Install	205.9 M		
🗹 🛨 Server Components	Install	141.4 M		
🗹 🕀 Management Tools	Install	52.7 ME		
<ul> <li>Client Connectivity</li> </ul>	Install	2.0 MB		
🗹 🛨 Books Online	Install	9.8 MB		
🗆 🕀 Development Tools				
🗆 🕀 Code Samples		-		
•		▶		
Destination folder for selected program:				
D:\MSSQL7	<u>C</u> han	ge Folder		
Drive: [-d-] 💌 Space Free: 1452 MB Space required for selected programs: 123 MB				
<u>B</u> ack	Next	Cancel		

Figure 194. Select Components

After the install begins you will be prompted to optionally set up the accounts that will have access to SQL. In our case we clicked **Assign Account(s)** to set up the administrator user ID.

Administrator and Service Accounts for BackOffice Server Programs Assign accounts and passwords to each program.			
Note: If the account you want to assig Administration tools.	n does not exist, you can	create it using Windows	
BackOffice Programs		Accounts	
SQL Server Administrator Account (D SQL Server Agent Account (Optional SQL Server MSDTC Account (Option	)	<b>*</b>	
More Information	<u>C</u> lear Account(s	s) <u>A</u> ssign Account(s)	
	Back	<u>N</u> ext Cancel	

Figure 195. Account Access

Assign Account for Administrator Account (Optional) 🛛 🗙			
Account name:	administrator		
Domain:	BARRYPS2		
Password:	******		
	OK Cancel	]	

Figure 196. Password Setup for the Administrator ID

If you want more details about the purpose of the IDs you can click **More Information** in Figure 195 on page 99.



Figure 197. What the IDs Are Used For

You should also verify that the protocols that are used are the ones you need. In our case the default TCP/IP protocol and the default sockets were fine.


Figure 198. Named Pipes and TCP/IP Sockets

You have one last chance to make any changes before the customization is performed. The following window shows a summary of what you selected to be installed:

Your BackOffice Installation Confirm your BackOffice installat	ion choices shown below.
BackOffice Programs	Properties
🗉 SQL Server	D:\MSSQL7
Server Components	
<ul> <li>Management Tools Client Connectivity</li> <li>Books Online</li> <li>BackOffice Suite Components BackOffice Help Files Microsoft Management Console</li> </ul>	C:\Program Files\Microsoft BackOffice
More Information	Click Back to modify choices.
	<u>B</u> ack <u>N</u> ext Cancel

Figure 199. Final Options



Figure 200. Restart

After the system restarts it completes the rest of the installation process and SQL 7.0 is ready to use.

### 6.2 Tivoli Inventory

Now that the framework is in place and the SQL database has been chosen it's time to install Tivoli Inventory. During the installation of Tivoli Inventory you are going to have to indicate which database (for example, Oracle, Sybase or SQL) you are going to use. After the code is installed you have to create the SQL database and then run some scripts that are provided with Tivoli Inventory.

After inserting the CD-ROM or downloading the install image you can use the Tivoli desktop to install Tivoli Inventory. From the desktop click **Desktop -> Install** -> Install Product. After you point to the correct media and directory you get the following window:



Figure 201. Tivoli Inventory Components

When you click **TME 10 Inventory, Version 3.6** you are prompted to specify the database install options. We used the ones in Figure 202. Note that the *Instance Home* field is left blank since that is only for DB2. Also, the Server ID field is not the server's name but *tcpip*.

🐝 Install Options	
	Set Install Options
-General Installation Options	
Database Vendor:	MS_SQL 🔽
RIM Host:	ALI_host
Database ID:	inv
Database Home:	d:/mssql7
Server ID:	tcpip
User Name:	administrator
Instance Home (DB2 Only):	
Set	Close Help

Figure 202. Database Options

For security reasons, make sure you set the password of the default system administrator ID in SQL. The ID is sa.

SQL Server Logi	n Propertie	s - sa		×
General Server	Roles Data	abase Access		
				1
Name	: sa			
••				
Authentication -				
O 🖄	(indows NT a	authentication		
D	o <u>m</u> ain:			<b>V</b>
Si	ecurity acces	IS:		_
	O <u>G</u> rant a	iccess		
	O Deny a	iccess		
ତ ହ	QL Server au	thentication		
_	assword:	******		_
Defaults		-		
	the default i	anguage and da	tabase for this lo	igin.
Datab	oase:	master		•
Langu	lade:	English		-
Earligh	ago.	Lengian		-
	ок	Cancel	Apply	Help
	OK .	Cancer		

Figure 203. Login Password

### 6.2.1 Setting Up the Inventory Database

After Tivoli Inventory is installed there are several post installation tasks that need to be performed. You have to allocate the physical database and then there are a few scripts that have to be run that create the database tables. It is easiest to use

the database wizard to allocate the database. To get the list of wizards from the SQL Enterprise Manager click **Tools -> Wizards**. To create the database click **Create Database Wizard**.



Figure 204. Wizards

Create Database Wizard - BARRYPS2				
	Welcome to the Create Database Wizard			
	<ul> <li>This wizard helps you create a new database. With this wizard you can:</li> <li>Name the database.</li> <li>Create one or more files that make up the database.</li> <li>Specify database file growth information.</li> <li>Create one or more files that make up the transaction log.</li> <li>Specify transaction log file growth information.</li> </ul>			
	< Back Next > Cancel			

Figure 205. The Initial Wizard Window

Specify the same information in the database wizard that you supplied to the Tivoli Inventory installation application.

Create Database Wizard - BARRY	PS2
Name the Database and Speci Specify a name for the database the database.	ify its Location e, following the rules for identifiers. Type or select a location for
<u>D</u> atabase name:	Inventory
Database file location:	D:\MSSQL7\data\
Transaction log file location:	D:\MSSQL7\data\
	< <u>B</u> ack <u>N</u> ext > Cancel

Figure 206. Database Details

Make sure the database is large enough to hold all of your configuration data. See the Tivoli Inventory manuals for database sizings.

reate Database Wizard - BARRYPS2	×
Name the Database Files Specify the name of one or more files within which the data	hase is contained. Also specify the
initial file size for each of the files.	Ű
Database files:	
File name	Initial size (MB)
Inventory_Data	50

Figure 207. Database Size

You can restrict the size of the database or indicate how fast you want it to grow.

Create Database Wizard - BARRYPS2	×
Define the Database File Growth Specify whether the database files should grow enlarge them.	automatically, or grow only when you explicitly
<ul> <li>Do not automatically grow the database files.</li> <li>Automatically grow the database files</li> <li>Grow the files in megabytes:</li> <li>Grow the files by percent:</li> <li>Maximum file size</li> </ul>	
Unrestricted file growth <u>Restrict file growth to (MB)</u> :	907

Figure 208. Database Growth Patterns

In addition to the database, there is a transaction log file that needs to be allocated. Provide a name for it and then specify its size.

reate Database Wizard - BARRYPS2		×
Name the Transaction Log Files Specify the name of one or more files that th the initial file size for each of the files.	e transaction log is contained with	in. Also specify
Iransaction log files:		-1
File name Inventory Log	Initial size (MB) 10	-

Figure 209. Transaction Log

Create Database Wizard - BARRYPS2	×
Define the Transaction Log File Grow Specify whether the transaction log files explicitly enlarge them.	wth should grow automatically, or grow only when you
<ul> <li>Do not automatically grow the transaction log</li> <li>Automatically grow the transaction log</li> <li>Grow the files in megabytes:</li> <li>Grow the files by percent:</li> <li>Maximum file size</li> <li>Unrestricted file growth</li> <li>Restrict file growth to (MB);</li> </ul>	

Figure 210. Growth Patterns for the Transaction Log File

That is all that is required from SQL to set up the initial database tables. There are still a few scripts that have to be run from the Tivoli Inventory application.



Figure 211. Wizard Finishing



Figure 212. Creation Completed

The isql scripts that have to be run are:

- \tivoli\bin\w32-ix86\TME\INVENTORY\SCRIPTS\RDBMS\tivoli\_ms\_sql\_admin.sql
- \tivoli\bin\w32-ix86\TME\INVENTORY\SCRIPTS\RDBMS\tivoli\_ms\_sql\_schema.sql



Figure 213. isql Script

There are also some query shell scripts that need to be run under the bash interpreter:

- bash \tivoli\bin\w32-ix86\TME\INVENTORY\SCRIPTS\queries\inventory\_queries.sh
- bash \tivoli\bin\w32-ix86\TME\INVENTORY\SCRIPTS\queries\subscription\_queries.sh

👚 Polic	Policy Region: barryps2-region					
<u>R</u> egion	<u>E</u> dit	⊻iew	<u>C</u> reate	<u>P</u> roperties	<u>H</u> elp	
	Ť	MP/NT parrynt			TMP/NT barryps2	VINDOUS 95 barryip
IN	VENTO	RY_G	DERIE:	S SUE	SCRIPTION_QUERIES	

Figure 214. Policy Region Updated with Queries

 Finally you run wfilesig -a -f swsigs.ini from the \tivoli\bin\w32-ix86\TME\INVENTORY\SCRIPTS\signatures directory.

```
D:\tivoli\bin\w32-ix86\TME\INVENTORY\SCRIPTS\SIGNATURES>wfilesig -a -f swsigs.in
i
Lines of data processed: 12472
D:\tivoli\bin\w32-ix86\TME\INVENTORY\SCRIPTS\SIGNATURES>wgetrim inventory
RIM Host: barryps2
RDBMS User: tivoli
RDBMS Uendor: MS_SQL
Database ID: inventory
Database Home: d:/mssql7
Server ID: barryps2
Instance Home:
D:\tivoli\bin\w32-ix86\TME\INVENTORY\SCRIPTS\SIGNATURES>
```

Figure 215. File Signatures

If you look in the SQL database you should see the items Tivoli Inventory adds to the inventory database and which are owned by the user tivoli. You will see the UM Services tables after you have installed the Plus module and run the ums\_ms\_sql\_schema.sql script.

SQL Server Group\BARRYPS2 (\	₩indows	NT)\Databases	\Inventory\Tables
🖪 🛛 🖅 🖸 😫 🛛 🔆 🖄	N 👂 (	) 💽 🔽	
107 Items			
Name	Owner	Туре	Create Date
ASSET .	tivoli	User	9/23/99 9:03:34 AM
CDROM_DRIVE	tivoli	User	9/23/99 9:02:57 AM
COMMERCIAL_APPLICATION	tivoli	User	9/23/99 9:03:29 AM
COMPONENT_MONITOR	tivoli	User	9/23/99 9:03:16 AM
COMPONENT_MONITOR_PR	tivoli	User	9/23/99 9:03:16 AM
COMPUTER_SYSTEM	tivoli	User	9/23/99 9:03:11 AM
COMPUTER_SYSTEM_MEM	tivoli	User	9/23/99 9:02:56 AM
CONFIG_CHANGE_HISTORY	tivoli	User	9/23/99 9:02:55 AM
CONTROLLER_CARD	tivoli	User	9/23/99 9:02:59 AM
T DESKTOP_PC	tivoli	User	9/23/99 9:03:25 AM
DEVICE_CARD	tivoli	User	9/23/99 9:03:00 AM
DEVICE_DRIVER	tivoli	User	9/23/99 9:03:31 AM
DEVICE_DRIVER_SOFTWARE	tivoli	User	9/23/99 9:03:00 AM
III DISK_FARM	tivoli	User	9/23/99 9:03:24 AM
DOCKING_STATION	tivoli	User	9/23/99 9:03:35 AM
FAXMODEM_CARD	tivoli	User	9/23/99 9:03:04 AM
E FLOPPYDRIVE	tivoli	User	9/23/99 9:03:20 AM
III HARDDISK	tivoli	User	9/23/99 9:03:19 AM
HARDWARE_SYSTEM	tivoli	User	9/23/99 9:03:22 AM
INHOUSE_SOFTWARE	tivoli	User	9/23/99 9:03:28 At
INST_SW_VERSION	tivoli	User	9/23/99 9:03:40 At
INSTALLED_BIOS	tivoli	User	9/23/99 9:03:39 At
INSTALLED_CDROM_DRIVE	tivoli	User	9/23/99 9:02:54 At
INSTALLED_CONFIG_FILE	tivoli	User	9/23/99 9:02:42 At
INSTALLED_COPROCESSOR	tivoli	User	9/23/99 9:03:09 At
INSTALLED_DEVICE_CARD	tivoli	User	9/23/99 9:02:43 At
INSTALLED_FLOPPYDRIVE	tivoli	User	9/23/99 9:02:53 At
INSTALLED_HARDDISK	tivoli	User	9/23/99 9:02:52 At
INSTALLED_KEYBOARD	tivoli	User	9/23/99 9:02:46 At
INSTALLED_MONITOR	tivoli	User	9/23/99 9:02:47 At
INSTALLED_MONITOR_PRO	tivoli	User	9/23/99 9:03:09 AM
INSTALLED_MOUSE	tivoli	User	9/23/99 9:02:45 AM
INSTALLED_OS_DETAILS	tivoli	User	9/23/99 9:02:32 AM
INSTALLED_PRINTER	tivoli	User	9/23/99 9:02:33 Ał
INSTALLED_PROCESSOR	tivoli	User	9/23/99 9:03:08 AM

Figure 216. Inventory Tables

## 6.3 TEC

Our environment consisted of two Managed Nodes and one PC Managed Node. We could only install the TEC Server on one system so we chose to put it on the same system as the framework. This is not a requirement. Unless you have a high-end server you would probably consider separating out the framework, the TEC Server and the database. In this case we used Microsoft SQL V7.0.

👫 Ins	tall	Product		×
<u>م</u>	) <b>†</b> @	Ir	nstall Product on Administrator's Desktop	
Select	Pro	duct to Install:	:	
TME	10	Enterprise	Console Server 3.6	1
[			Console Console 3.6	1
TME	10	Enterprise	Console Adapter Configuration Facility 3	3
TME	10	Enterprise	Console NetView 6000 Adapter 3.6	
TME	10	Enterprise	Console HP OpenView Adapter 3.6	
TME	10	Enterprise	Console SunNet Manager Adapter 3.6	
TME	10	Enterprise	Console Spectrum Enterprise Manager Adap	
TME	10	Enterprise	Console EIF 3.6	
				ł.
	-			1
Clier	ntsi	to Install On:—	Available Clients:	
bar	ry	082		

Figure 217. First Install the Server

After installing the server we added the console to the same system. We could have installed the console in multiple places, but there was no need to in this case.

We also installed the TEC NT Adapater and the SNMP adapter so that events and SNMP traps would flow into TEC. The most important thing to know about that installation is that it uses port 5529.



Figure 218. TEC Adapter Port Number on Windows NT

Once TEC was installed we had to reboot our system. It was not enough to just shut down and restart the GUI. After the reboot we went through the same basic installation process for TME 10 Software Distribution V3.6.

In our environment (managed nodes and PC managed nodes) it was not really necessary to install the Inventory and Software Distribution Gateway products. However, since UM Services is a client-side application, we stress the importance of endpoints when using the UM Services Plus module and even include it as an install option on the client side for Tivoli users. In most cases we expect users to be operating against endpoint clients which requires them to install the above products as well as create an endpoint gateway as part of the install process.

Sanstall Product		_ 🗆 ×
	Install Product on Administrator's Desktop	
Select Product to Insta	all:	
TME 10 Software	Distribution, Version 3.6 Distribution Gateway, Version 3.6 Distribution TEC Integration, Vers	*ion 3.▼
-Clients to Install On: barrynt barryps2	Available Clients:	
	Install Options	
Install	I & Close Install Close Help	

Figure 219. Install TME 10 Software Distribution

The final piece of Tivoli software that we installed before the UM Services Plus module was Distributed Monitoring.

🕌 Install Product	_ 🗆 ×
Install Product on Administrator's Desktop	
Select Product to Install:	
THE 10 Distributed Monitoring 3.6 THE 10 Distributed Monitoring TEC Monitors 3.6 THE 10 Distributed Monitoring THE Monitors 3.6 THE 10 Distributed Monitoring NT Monitors 3.6	▲ 
Clients to Install On: barrynt barryps2 Darrynt barryns2 Darrynt barryns2 Darrynt Darryn	
Install Options Select Media Install & Close Install Close Help	

Figure 220. Distributed Monitoring

Once all the components are installed we created a TEC Console by using the Create pull-down menu. Since the machine it was running on was called barryps2 and the user ID was root, the console was built using those values.

🎆 ТМЕ	Deskt	op for	Adminis	strator	Root	_barryps2	-region	(BARRYP	S2\Admi	nistr	_ 🗆 ×
<u>D</u> esktop	<u>E</u> dit	$\underline{V} iew$	<u>C</u> reate	<u>H</u> elp							
A	<b>I</b> minis	Strators	3		Notice	es	Root	Lbarryps2	region	/	1
I	EventS	Berver		TE	C36R	egion	b	arryps2-rej	gion		Ŧ
Find N	Jext	Find	AII		-						

Figure 221. Tivoli Eesktop Interface

### 6.4 Preparing for UM Services Plus Module

There were three patches to the Tivoli Framework that we needed to install before we installed the Plus module. They were downloaded from

ftp://ftp.tivoli.com/support/patches\_3.6/.

1. 3.6-TMF-0033

- 2. 3.6-TMF-0034
- 3. 3.6-TMF-0038

After you uncompress the image you can install the patch just like any other Tivoli patch. You have to install them one at a time.

🐝 Install Patch		_ 🗆 ×
2	Install Patch	
Select Patch to Install:		
TME 10 Framework	Version 3.6 Patch 3.6 TMF 0033	(3.6 - bu
•		F
Clients to Install On:- barrynt barryps2	Available Clients:	

Figure 222. Patches to be installed (1 of 3)

🐝 Install Patch	
2	Install Patch
Select Patch to Install:	
Tivoli Framework	Version 3.6 patch 3.6-TMF-0034
•	
-Clients to Install On:	Available Clients:
	Available Clients.
barrynt barryps2	

Figure 223. Patch 34 (2 of 3)

Install Patch	
	Install Patch
elect Patch to Install:	
Tivoli Framework Versi	on 3.6 patch 3.6-TMF-0038
Clients to Install On:	Availab
barrynt	
barryps2	

Figure 224. Patch 38 (3 of 3)

If you upgrade to Tivoli Framework V3.6.1 you do not need these three patches as they are incorporated into that update.

### 6.5 UM Services Tivoli Plus Installation

Now that the infrastructure is in place you can begin the installation process for the UM Services Plus module. When you install the product there are two options:

- 1. UM ServicesPlus Module for Tivoli
- 2. Plus Module Support

You need to install the Plus Module Support option first. You should install both of them on the systems that you will be providing integrated management with UM Services and Tivoli.

Sinstall Product		
2	Install Product on Administra	itor's Desktop
Select Product to Inst	tall:	
	Module for Tivoli, Ver:	
Plus Module Sup	port (Link binaries) - 3	3.1.j
Clients to Install Or	Availat	ole Clients:
barrynt		
barryps2		
	Install Options Select Me	dia
Instal	I & Close Install Clos	e Help

Figure 225. Tivoli Plus Support

When you click **UM ServicesPlus Module for Tivoli** the following window appears:

🐕 Install Options 📃 🗖 🗙	
Set Install Options	
-Selectable Installation Options:	
🗖 Uninstall	
🔽 Install Tasks 🔫	
🔽 Install Monitors 🔸	
🔽 Install File Packages 🗲	_
🗖 Install All	
Set Close Help	

Figure 226. Installation O ptions

We left the three default options as they were and the installation proceeded smoothly. If you want to look at the install log go to %DB\_DIR%\tmp. The files that are of interest are:

- umsinstall.log
- UM\_SERVICES\_PLUS.log

- ums\_inv.log
- umsinst.log

Even before the installation was completed the icon for TivoliPlus appeared on the TME desktop. While it was not a requirement to shutdown the desktop after the install, we rebooted our system.



Figure 227. TivoliPlus Icon Added to the Desktop

After the plus module was installed our Tivoli environment consisted of the following products:

Installed Products	
	Installed Products
Installed Products:	
TME 10 Distributed Monitoring Unix Monitors 3.6	
TME 10 Distributed Monitoring Universal Monitors 3.6	
UM ServicesPlus Module for Tivoli, Version 1.0	
TME 10 Distributed Monitoring TME Monitors 3.6	
TME 10 Inventory PC Scanning Program, Version 3.6	
TME 10 Distributed Monitoring TEC Monitors 3.6	
TME 10 Enterprise Console Server 3.6	
TME 10 Enterprise Console Console 3.6	
TME 10 Software Distribution Historical Database, Version 3.6	
TME 10 Distributed Monitoring 3.6	
TME 10 Distributed Monitoring SNMP Monitors 3.6	
TME 10 Distributed Monitoring NT Monitors 3.6	
Plus Module Support (Link binaries) - 3.1.j	
TME 10 Inventory Gateway, Version 3.6	
THE 10 Inventory, Version 3.6	
TME 10 Enterprise Console EIF 3.6 TME 10 Software Distribution Gateway, Version 3.6	
TME 10 Software Distribution, Version 3.6	
TME 10 Software Distribution, Version 5.6	
TME 10 Framework	

Figure 228. Products Installed on our System

### 6.5.1 UM Services Plus Module Usage

To begin to customize the plus module double-click the **TivoliPlus** icon shown in Figure 227.



Figure 229. UM Services Plus

To see what services are available, double-click UM Services Plus for Tivoli.



Figure 230. UM Services Integration

#### 6.5.1.1 Inventory

The first option we investigated related to the integration between the inventory function in Tivoli and the UM Services inventory function. We double-clicked the **UM Services Inventory Queries** icon. The icons in Figure 231 relate to the SQL database table entries. In addition to using Tivoli Inventory or the icons to query the inventory data you could also write standard SQL queries to extract the data. The key here is the merging, in one location, of all the inventory data.

The installation of the queries is done automatically for you during the plus module installation, but if you want to take a look at the scripts that did the customization you can find them in the following directory: \tivoli\bin\generic\_unix\TME\PLUS\UM\_SERVICES.



Figure 231. Inventory Icons

To see what systems are subscribed to the UM Services Profile Manager you can click the Subscribers of UM Services icon in Figure 230 on page 116. To populate the profile managers you should add the systems that have the UM Services client code installed. This is done by clicking the systems under the heading **Available to become Subscribers**, then click the arrow that is pointing to the left. If you click the Query button it will only find systems that are already in the database from a previous software inventory scan.



Figure 232. UM Services Subscribers

To configure the Tivoli inventory database for UM Services inventory data for systems that did not have the UM Services Plus module installed on them, you have to run the ums\_ms\_sql\_schema.sql script (or the corresponding script for your DB2, Oracle or Sybase database). That script is automatically run for your systems that had the initial Plus module installed on them.

To initially populate the database we selected the Managed\_node **barryps2** and made it a current subscriber. Then we had to do a hardware scan followed by a software scan. To complete your first scan double-click **UM Services Inventory** 

from the UM Services Plus for Tivoli window. That brings up the Profile Manager shown in Figure 235. In addition to selecting the HW Scan you have to select the subscribers. After you have set up the subscribers you can customize the hardware scan. Using the right mouse key select **UM Services PC HW Scan**. That brings up the following window:

Profile Name:       UM Services PC H\       Profile Manager:       UM Services Inventory         Execute at Target       Read Results       Save Results in Database       Replace with Current Results         Software Scan       Image:       Hardware MIF File       Replace with Current Results         Software Scan       Image:       Custom MIF File       Replace with Current Results         Software Scan       Image:       Custom MIF File       Update with Differences         Software Scan       Scan Software Files       File Extensions       Image:Imag	🚾 Customize Inventory Profile		
Image: Second	Profile Name:	UM Services PC H\ Profile	e Manager: UM Services Inventory
Start Soluvate Files       File Soluvate Files         C Enable       C All Files         O Disable       Files with Extension in List         UNIX Scan       Files with Extension Not in List         © Executables Only       Files with Extension Not in List         © All Files       Add Delete         Scan Directories       Search These Directories         © Only Specified Directories       \$\frac{1}{2} \cdot cos \$\frac{1}{	Hardware Scan Software Scan	Hardware MIF File     Software MIF File	Replace with Current Results
All Directories     Search These Directories     Do Not Search These Directories     Add Directories     Add Delete     Add Delete     Add Delete     Save Configuration Files     Configuration files     Custom MIF Files To Be Read     Store As ASCII     AUTOEXEC. BAT     CONFIG. SYS     C: /umativoli.mif	C Enable C Disable UNIX Scan C Executables Only	<ul> <li>All Files</li> <li>Files with Extension in List</li> </ul>	.dl1 .drv .exe .nlm .sys ▼
C Store As ASCII AUTOEXEC.BAT C Store in RCS CONFIG.SYS C:/umativoli.mif	C All Directories		*/cdrom * */css */dev */dev */devices
Add Delete Add Delete	C Store As ASCII	OEXEC.BAT	C:/umativoli.mif C:/umsinv.mif

Figure 233. Hardware Scan Customization

Select the ... next to the box called Script that is checked off. Click that and it brings up the following screen:

```
&UMS_DRIVE&
@cd "&UMS_HOME&\inventory"
@jview -d:WINDIR="&WINDIR&" -cp:a
.\cim2mif.jar;"&UMS_HOME&\httpserv\cimdre.jar";"&UMS_HOME&\httpserv\cimxml.jar";"&UMS_HOME&\
httpserv\guitools.jar";"&UMS_HOME&\httpserv\mswmi.jar";"&UMS_HOME&\httpserv\xml4j.jar"
com.ibm.sysmgt.cim.cim2mif.cim2mif /TME c:\
"&UMS_HOME&\inventory\dmi2tiv.exe" @dmi.lst
```

Figure 234. UMS Drive

Go look in that script before you use it. By default, it assumes that your UM Services agent code is stored on your C drive. If it is on another drive you will have to modify it.

Make sure that you select the Custom MIF file. Click Save & Close.

Then click the **Profile Manager** pull-down menu and then **Distribute**.

Since it's only one system that you are initially performing the hardware inventory for it should not take too long.

After you perform the hardware scan you can perform the software scan to populate the database. This requires you to distribute that profile as well.

👬 Profile Man	ager				
Profile Manager		⊻iew	<u>C</u> reate	<u>H</u> elp	
			Pr	ofile Manager: UM Services Inve	ntory
Profiles:					
	PC H	łW Sca	ın UN	I Services PC SW Scan	
Find Next	Find	AII			
Subscribers:					
banypoz					

Figure 235. Software Scan

If you look in the SQL database you can see the inventory tables. Then you can use the Tivoli desktop (or SQL) to look at the data.

<b>F SQL Server Enterprise Manager</b>					
Console Root\Microsoft SQL Servers\		Vindows NTI\	Databases	inventoru/Views	- 0
		N   🗗 🚺			
	<u>IN</u>   40   <b>A</b>   11   12   176   1	∾  <b>≫</b> 00	8 40		
		-	[ <del>-</del>		
Console Root     Microsoft SQL Servers	Name	Owner	Туре	Create Date	
⊡	60°CHECK_CONSTRAINTS	INFORMATI	System	11/13/98 3:07:17 AM	
BARRYPS2 (Windows NT)	60 COLUMN_DOMAIN_USAGE	INFORMATI	•	11/13/98 3:07:12 AM	
	60 COLUMN_PRIVILEGES	INFORMATI		11/13/98 3:07:13 AM	
inventory	Got COLUMNS	INFORMATI		11/13/98 3:07:12 AM	
	60 COMPUTER_VIEW	tivoli	User	9/24/99 9:22:01 AM	
	60° CONSTRAINT_COLUMN_US	INFORMATI		11/13/98 3:07:18 AM	
- 60 Views	60 CONSTRAINT_TABLE_USAGE	INFORMATI	-	11/13/98 3:07:17 AM	
Stored Procedure	60 DOMAIN_CONSTRAINTS	INFORMATI		11/13/98 3:07:14 AM	
- 🔀 Users	66 DOMAINS	INFORMATI	System	11/13/98 3:07:14 AM	
- 💏 Roles	60'INSTALLED_CONFIG_FILE_VI	tivoli	User	9/24/99 9:22:13 AM	
	60'INSTALLED_COPROCESSOR	tivoli	User	9/24/99 9:22:09 AM	
Defaults	60'INSTALLED_FILE_VIEW	tivoli	User	9/24/99 9:22:07 AM	
🔤 🕵 User Defined Dal	60'INSTALLED_FLOPPYDRIVE	tivoli	User	9/24/99 9:22:08 AM	
🚊 🕕 🚺 master	60'INSTALLED_HARDDISK_VIEW	tivoli	User	9/24/99 9:22:06 AM	
📰 Tables	60'INSTALLED_KEYBOARD_VIEW	tivoli	User	9/24/99 9:22:09 AM	
- 60 Views	60'INSTALLED_MOUSE_VIEW	tivoli	User	9/24/99 9:22:08 AM	
- 🛃 Stored Procedure	66'INSTALLED_NETWORK_CAR	tivoli	User	9/24/99 9:22:14 AM	
Extended Stored	60'INSTALLED_OS_DET_VIEW	tivoli	User	9/24/99 9:22:17 AM	
💽 Users	60'INSTALLED_PC_SOFTWARE	tivoli	User	9/24/99 9:22:18 AM	
- 🐼 Roles	60'INSTALLED_SIGNATURE_FILE		User	9/24/99 9:22:04 AM	
- Rules	MINSTALLED SOFTWARE CO		User	9/24/99 9:22:04 AM	
Defaults	60'INSTALLED_SOFTWARE_VIE		User	9/24/99 9:22:05 AM	
🔤 🖸 User Defined Dal	60'INSTALLED_VIDEO_CARD_V		User	9/24/99 9:22:15 AM	
🖻 🛛 🚺 model	60'INVENTORY_SYSTEM_VIEW	tivoli	User	9/24/99 9:22:07 AM	
	60'INVENTORYDATA	tivoli	User	9/24/99 9:22:01 AM	
	60'KEY COLUMN USAGE	INFORMATI		11/13/98 3:07:15 AM	
	60'LASTSCAN_CONFIG_FILE_VI	tivoli	User	9/24/99 9:22:16 AM	
- Sers	60 LASTSCAN SW FILE VIEW	tivoli	User	9/24/99 9:22:15 AM	
	60°LOGICALDRIVE_VIEW	tivoli	User	9/24/99 9:22:05 AM	
Defaults	60 LOGICALDHIVE_VIEW	tivoli	User	9/24/99 9:22:02 AM	
🖉 User Defined Dat	60 MEMORY_VIEW	tivoli	User User	9/24/99 9:22:02 AM	
	ON MEMORY VIEW				
		tivoli Kurti	User	9/24/99 9:22:10 AM	
	60"NETWORK_NODE_VIEW	tivoli	User	9/24/99 9:22:06 AM	
	60 NOSIG_FILES_VIEW	tivoli	User	9/24/99 9:22:19 AM	

Figure 236. SQL UMS Inventory Tables

From the UM Services Inventory Queries window if you right mouse click any of the icons you can look at that particular piece of inventory data. For example, clicking **Memory Details** then **Run Query** produces the following output.

	Man Query	Results fo	r Query : Mem	iory Details		
		Number	ofRows: 6			
	TME_OBJECT_LABEL	Device_Locator	siz_	Form_Factor	Туре	Speed 🔺
	barryps2	DIMM 0	268435456	SIMM	SDRAM	66
	barryps2	DIMM 1	0	SIMM	SDRAM	0
	barryps2	DIMM 2	0	SIMM	SDRAM	0
?	barrynt	DIMM 0	268435456	SIMM	SDRAM	66
Edit Query Memory Run Query		1	1	1		
	_	Export	Close			
T	,					

Figure 237. Query the Inventory

If you want you can also export the data to a file on any of your systems. Just click the **Export** box. You can save the information as a comma-separated file, a file with tabs between the fields, or any character you wish (CUSTOM).

🚾 Export Query Resu	ults	_ 🗆 ×	
?	Export results of Query : Memory Details		
File Host and Name	,		
Host	File		
Delimiter			
⊙ Comma O Tal	b C CUSTOM		
Print Headers 🔽			
	Save & Close Close		
		///	
th barryps2,DIMM ( barryps2,DIMM ;	xports.dat mory Details EL,Device_Locator,siz_,Form_Fa 0,268435456,SIMM,SDRAM,66, <emp 1,0,SIMM,SDRAM,0,<empty>,<empt 2,0,SIMM,SDRAM,0,<empty>,<empt< th=""><th> ty&gt;,≺em<u>r</u> y&gt;</th><th>-</th></empt<></empty></empt </empty></emp 	 ty>,≺em <u>r</u> y>	-

Figure 238. Export Data to a File

### 6.5.2 Software Distribution

You can distribute the UM Services agent using the UM Services Tivoli Plus module. The source can either be on a CD-ROM or on a disk drive. We did our installations from our local hard drive. Basically, as with other Tivoli software distribution functions, you configure the file package and then install it.

The first thing you need to do is double-click Prepare for UM Services install.



Figure 239. Software Distribution Setup

That brings up a window from which you can configure the file package.

🜆 Prepare_for_UM_Services_install 💶 🗖	×
Source Host:	]
Source Path:	]
Destination Path:	]
Set and Close Cancel Help	
	1

Figure 240. Location of Code

After filling in the location where the installation image is located and the path where you want the UM Services code to be installed click **Set and Close**.

🖗 Prepare_for_UM_	_Services_install (UM_SERVICES) Output	
<b>H</b>	Formatted output from task execution	
••••••	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
	pare_for_UM_Services_install	
Task Endpoint:		
Source Host : bar		
Source_Path_: e:/u		
Destination_Path_:		
	gured FilePackage 'Install UM Services for NT' 2.db/tmp/E3 Filepack Client cdf filepackage.fp	
	gured FilePackage Install UM Services for Win95'	
d:/Tivoli/db/barryps2	2.db/tmp/_filepackage.fp	
II ( 2	gured FilePackage Install UM Services for Win98'	
Standard Error	2.db/tmp/_filepackage.fp r Output	
	******	
	Save to File Close Help	

Figure 241. Output from Software Distribution Preparation

Now that the package is prepared you are ready to distribute it.

#### 6.5.2.1 Installing the Package

To install the package right-click the Install UM Services for XX (where XX= the operating system) and select subscribers.

~	🚰 Subscribers		
Open Install UM Ser Subscribers		Subscribers for Profile Manager:	Install UM Services for NT
	Current Subscribers:		Available to become Subscribers:
	barrynt (Managed_Node)	< Query <<	INV_PM (ProfileManager) Tivoli/Sentry Defaults-barryps2-region UM Services Inventory (ProfileManager barryps2 (Managed_Node) barryip (Pc_Managed_Node) Subscribers of UM Services#barryps2-re

Figure 242. Install UM Services Icon

Then click **Set and Close**, the button at the bottom of the subscribers window. Back at the Install UM Services for NT icon, right-click it again and select **Distribute**. A silent install of UM Services will occur. The default setup.iss file looks like:

[InstallShield Silent] Version=v3.00.000 File=Response File [Application] Name=UMS Version=2.0 Company=IBM [DlgOrder] Dlg0=SdOptionsButtons-0 Dlg1=SdAskOptions-0 Dlq2=AskDestPath-0 Dlg3=AskSecurInfo-0 Dlg4=SdFinishReboot-0 Dlg5=MessageBox-0 Count=6 [SdOptionsButtons-0] Result=101 [SdAskOptions-0] Component-type=string Component-count=4 Component-0=Basic Services Component-1=&Web Based Access Component-2=System Health & Monitoring Component-3=&SNMP access and trap forwarding Result=1 [AskDestPath-0] szPath="C:\Program Files\IBM\UMS" Result=1 [AskSecurInfo-0] svUser=ums svPassword=ums svConfirm=ums svPort=411 Result=1 [SdFinishReboot-0] Result=1 BootOption=0 [MessageBox-0] Result=1

If you want to do some customization of the package you can click **Open** instead of Distribute.

	Flie Package Name.	Install OW Bervices for NT
	in Profile Manager:	Install UM Services for NT
Source Host Source Host barryps2 Source Directories & Files Directories & Files "e: /ums/." "e: /ums/.ms_fp_after.bat"		General Options Stop distribution on error Descend into directories Append source path to remote path Perform compression on distribution File Mode at Destinations
-Nested File Packages	Remove	Preserve mode of source files     Change mode of source files to:     chmod options:
File Packages		Log Information Options           Image: Send to Software Distribution notice group           Image: Send E-mail to:           Image: Send to log file on:
	Remove	Host barryps2 Path d:/Tivoli/db/barryps2.db/tmp/umsin

Figure 243. Package Properties

Reboot your remote client and the UM Services code is installed and operational.

### 6.5.3 Tivoli Distributed Monitoring

As with the other Tivoli products there is integration provided for Tivoli Distributed Monitoring and UM Services. From the UM Services Plus for Tivoli window double-click **Monitors for UM Services**.

	💑 Distribute Profiles	_ 🗆 ×
Monitors for UM Services	Distribute Pro	
	Distribute Now Schedule	Cancel Help

Figure 244. Distributed Monitors

The plus module provides monitors for the HTTP server processes and for the SNMP subagent. You can use the default monitoring values or easily make changes to them. The default polling interval shown in the following window is five minutes. You can change that as well.

VIII Subscrip		file: Monitors	s for UM Services	Profile Manager	: Monitors for UM S	ervice
- 💽 odpacnip	otion Path	: /Monitors for	r UM Services/Mor	nitors for UM Servi	ces	
			2 Entries			
	Status	Subscribers:	Schedule	Response: fatal	Response: critical	Resp
HTTPCheck ()	enabled	can edit	Every 5 minutes		icon,event	
SNMPCheck()	enabled	can edit	Every 5 minutes		icon,event	
	-					
		<u> </u>				

Figure 245. Default Monitors

If you are satisfied with the defaults you can distribute them the same way you distributed the other profiles, by right-clicking the **Monitors for UM Services** icon. Just make sure the subscriber list is what you want it to be. If a threshold is reached you might see a window like the following:



Figure 246. Threshold Alert

In addition to the alert you can also log the event, or run a command line script. You can also provide further integration by routing the alert to the Tivoli Enterprise Console (TEC).

To see if any of the thresholds have been reached you can also look at the UM Services indicators icon. Double-click that followed by double-clicking the **Monitors for UM Services** icon to see the list of events.

🚴 UM Services Plus for Tivoli				
Collection	<u>E</u> dit	⊻iew	<u>C</u> reate	<u>H</u> elp
Indicators for UM Services Monitors				
Indic	ators	tor UN	I Service	es monitors

Figure 247. Indicators

	🗊 Indicator Log: Monitors for UM Services		<u>- 🗆 ×</u>
	What Caused Alarm	New State	Endpoint
		created	normal
	barryps2	SNMPCheck:	critical
	barryps2	SNMPCheck:	critical
(a _ a)	<b></b>		▶
1	Reset Clear Close Help		
Ionitors for UM Services			

Figure 248. Monitors and Logs for SNMP

**Note:** Distributed monitors do not work against WIN9x endpoints. Also, using the monitors against endpoints requires that the user add the SentryProxy managed resource to his or her PolicyRegion.

### 6.5.4 Tivoli Event Console

To prepare for the TEC integration, double-click the icon **Setup TEC Event Server for UM Services**. It will run a job to perform the integration. If you want to see what the job is you can use the right mouse button.

The Plus module is configured to forward events from your distributed monitors as well as UM Services SNMP traps for abnormal fan, temperature, voltage and chassis intrusion environment conditions. The latter requires that the user install the Tivoli SNMP adapter and configure it to recongize UM Services SNMP traps and convert them to TEC events. To do this, you must open the file tecad\_snmp.cds (which comes with the SNMP adapter) and copy the contents of UMStecad\_snmp.cds to the end. In addition, you need to open the file tecad\_snmp.oid and copy the contents of UMStecad\_snmp.oid to the bottom of that file. Then you have to restart the adapter.

	🕉 Edit Job 📃 🗖
	Job Options:
	Setup TEC Event Server for UM Services Task Name:
	Execution Mode: Execution Parameters: Output Format: Output Destination:
	🔽 Parallel 🛛 Timeout: 0 🔽 Header 🔽 Display on Desktop
	Serial Staging Count.
	Staged     Staging Interval:     Standard Dutput
	Execution Targets:
	Selected Task Endpoints: Available Task Endpoints:
	barryps2#barryps2-region (ManagedNode) barryip (PcManagedNode) barrynt (ManagedNode) barryps2 (ManagedNode)
	Selected Profile Managers: Available Profile Managers:
	INV_PM (ProfileManager) Subscribers of UM Services (ProfileMana Tivoli/Sentry Defaults-barryps2-region
etup TEC Event Server for UM Services	Change & Close Change Close Help

Figure 249. UM Services and TEC Integration Task

Double-clicking the icon brings up the following window:

Setup_TEC_Event_Serve	r_for_UM_Services
Rule Base Name (new or exi	sting): plus
Rule Base to clone (if new):	Default
Path for Rule Base (if new):	barryps2:d:/Tivoli/bin/w32-ix86/TME/TEC/Plus
Name of Event Console to co	onfigure (optional):
Set a	nd Close Cancel Help

Figure 250. TEC Setup

We were using the default rule base and we preallocated the directory for the new *plus* rule base. We did not specify an event console name since we only had one and it was running on the machine we were running the TEC integration task on. The output follows:

#### Setup\_TEC\_Event\_Server\_for\_UM\_Services (UM\_SERVICES) Output



Formatted output from task execution



Figure 251. TEC Output

Looking at the event servers rule bases we can see that in addition to the icon for the default there is now one called *plus*. To activate it you have to use the right mouse button on the current rule base. Then click **Load**. You can either load it right away or have it load the next time the event server restarts.



Figure 252. Changing Rule Bases

In addition to setting up the new rule base you have to configure the event groups. Right mouse click the **Event Console** and select **Assign Event Groups**. The following window shows you one way to set up the event group for the UM\_Services\_plus predefined event group.

Root_barryp Configure	ver	
🤣 Assig	n Event Groups in TME 10 Enterprise Cr	onsole Server
Unassigned Event Groups Software Distribution UM_Services_Plus	Assigned Event Groups          A11         Network         Performance         Security         System	Admin Role super senior admin user none Reset Roles
Assigned Event Groups Performance Security Software Distribution System UM_Services_Plus	Close Set Reset Close	Help

Figure 253. Assign Event Groups

If you start the event console you can see if any alerts have flowed from UM Services to TEC.

<u>E</u> vent Groups <u>O</u> ptions <u>H</u> elp			
<b>8</b>			Event Groups
UM_Services_Plus	Software Distribution	System	Security

Figure 254. Events

Once you have an event you will see an additional icon. The icon will be dependent upon what went wrong and how severe an error it was.

TME 10 Enterprise Console Event Groups Options Help UM_Services_Plus CRITICAL UM_Services_Plus				
Event View Lask Automated Tasks	<u>H</u> elp			
<b>2</b>	Update	Number of Messages	0 📕 👯 0 🛛 🗕	
FA	TAL 🔽 CRITICAL 🔽 MINOR	WARNING MARMLESS	JNKNOWN	
	PEN	🗹 ACK 🔽 CLOSED		
Class	Status Hostname	Message	Date	
CRITICAL UMS_SNMP_Subagen	t_St OPEN barryps2	Distributed Monitoring Monitor	s for UM Ser Sep 24 14:24:05 1999	3

Figure 255. Critical SNMP Event from the Dstributed Monitor

Figure 255 shows integration among UM Services, Tivoli Distributing Monitors and TEC. If you click **View Message** you can see some details about the problem.



Figure 256. Event Error Message

### 6.5.5 Launching the UM Services Browser

The final piece of integration we show in this chapter is the ability to launch your UM Services browser from within the Tivoli desktop. There are other functions (for example, rebooting a UM Services system, shutting down and waking up UM Services) available from the UM Services Plus for Tivoli window.

UNIX users must make sure their Netscape browser is at least at V4.5, their JDK is at a minimum of V1.1.7b, their Swing at V1.1 and their XML at V1.1.14. In addition, make sure the enviornment variables CLASSPATH and MOZILLA\_HOME (AIX only) are set up. Those variables are case-sensitive.

There should be a separate icon for each of your UM Services systems. To launch it double-click the icon and either press Enter or enter the host name and port number (the default port is 411).

Launch UM Services@barryps2	Launch UM Services
	hostname barryps2
	port 411
	Set and Close Cancel Help

Figure 257. Launch UM Services Browser on Your Own System

#### 6.5.6 Tivoli Endpoint Configuration

UM Services clients can be configured to fit into a Tivoli Enterprise environment by checking the Tivoli Management Agent install option and configuring a gateway and port. Since the installation of the endpoint is silent, users do not have an opportunity (by default) to configure a gateway and port interactively. However, the InstallShield silent install script for the endpoint is included as part of the UM Services install files and can be edited and changed before you begin the installation.

[InstallShield Silent] Version=v3.00.000 File=Response File [Application] Name=Lcfd Version=4 Company=Tivoli [DlqOrder] Dlg0=SdWelcome-0 Count=5 Dlg1=SdComponentDialog-0 Dlg2=SdShowDlgEdit3-0 Dlg3=SdShowInfoList-0 Dlg4=SdFinish-0 [SdWelcome-0] Result=1 [SdComponentDialog-0] szDir=C:\Program Files\Tivoli\lcf Component-type=string Component-count=1 Component-0=TME 10 Endpoint Result=1 [SdShowDlgEdit3-0] szEdit1=9494 szEdit2=9494 szEdit3=-d1 -D login\_interval=86400 -D udp\_interval=300 -D udp\_attempts=2 Result=1 [SdShowInfoList-0] Result=1 [SdFinish-0] Result=1 bOpt1=0 bOpt2=0

If you look at the block near the end there is a variable called szEdit3. Change it to:

szEdit3=-d lcs.login\_interfaces=<gatewayname?+<gatewayport>

where gatewayname? and <gatewayport> are sZedit1 and sZedit2 (9494), respectively.

# Chapter 7. CA Unicenter Upward Integration Module

Installing the UM Services integration with Unicenter TNG Framework configures Unicenter TNG with:

- · New objects for classifying IBM hardware
- · Creates a business process view for grouping IBM systems
- Modifies AimIT's umclient.bat to automate the collection of inventory data from UM Services systems
- Provides a batch file for creating IBM UM Services file packages that can be distributed using the ShipIT tool
- Adds a start menu item for easy access to utilities for reclassifying already discovered systems as IBM systems
- Adds a tool to remove and readd UM Services configuration data for those cases when you have to rebuild your repository

After installing the CA Unicenter upward integration module for the first time, run the reclassify utility mentioned above to reclassify systems that are already in the repository that have UM Services installed. The new classifications are:

- IBM\_NTServer
- IBM\_WindowsNT
- IBM\_Windows95

The upward integration module installs a Windows NT service that runs in the background and automatically converts the classification for any future UM Services systems discovered by Unicenter TNG.

Systems that are reclassified as IBM\_NTServer, IBM\_WindowsNT or IBM\_Windows95 are placed in the IBM Business Process view for easy navigation. Right-clicking these systems provides a menu with a launch point for UM Services.

The following are the minimum hardware requirements to install the CA Unicenter TNG framework:

- Intel Pentium Processor (or equivalent) with 64 MB of RAM
- · 200 MB of free hard disk space in one partition
- Microsoft Windows NT server installed
- Windows NT Service Pack 3 or higher installed
- A TCP/IP connection
- To use 3-D Maps, an 8 MB graphics accelerator card for optimal 3-D performance

### 7.1 Installing the CA Unicenter TNG Framework

For machines that are configured to support CD-ROM autoplay, when the CD-ROM is inserted into the drive, the Setup Wizard screen appears automatically. If autoplay is not set up, double-click **setup.exe** in the Winows NT directory on the CD-ROM.

The first screen asks you about the platform you are installing it on. We chose Microsoft Windows NT (Intel) and clicked **Next**.



Figure 258. TNG Framework Welcome

The next screen is for the setup options. Choose **Install a Manager on this Windows NT system** and click **Next**.

Unicenter TNG Framework Set	up Wizard
UNICENLET THE	Welcome to the Unicenter TNG Framework installation wizard. The installation Wizard Method presents a series of easy-to-use dialogs designed to install the Unicenter TNG Framework. Press NEXT to continue.
Unicon	Install a Manager on this Windows NT system     Install an Event Agent on a remote server (requires a
Associates Associates Associates	Install an Event Agent on a remote server (requires a Manager installed locally)
	Copyright (c) 1997 Computer Associates International All rights reserved.
	< Back Next > Cancel ReadMe

Figure 259. TNG Framework Installation Option

The next screen is for the license agreement and identification. Fill in the fields with the correct data and click **Next**.

To install the system, you'll need approximately 200 MB of free space on the hard disk. You can select on which drive the system will be installed.

Unicenter TNG Framework Installa		igible for the installation	of Unicenter TNG Fra	amework.	×
10 207 02.25 20 256 02.25 125	ailable Drives — Name C: \ C: \ C: \ C: \ C: \ C: \ C: \ C: \	Type Local Disk Local Disk Local Disk Network Conne Network Conne	Total Size 1,077,478,912 3,248,951,296 4,096,155,648 20,957,720,576 20,957,720,576	Free Space 688,496,128 3,201,961,984 3,268,583,424 4,812,726,272 4,812,726,272	
		< <u>B</u> ack	Next > Car	ncel	

Figure 260. Selecting the Drive for Installation

After choosing the drive, you can select optional features, such as **3D Map Components** and **Books On-line**. If you intend to install them, just check the box for each one.

The next screen asks about the directory locations. The wizard shows the default locations, which can be changed by clicking the **Change directory** button.

Unicenter TNG Framework Insta	allation Wizard			×
Unicenter TNG Framework Inst	Allation Wizard Click Next to confirm the follow to edit. Directories Directory D:\TNGFW D:\TCA_APPSW I	ving directory locations or c Component Unicenter TNG Frame Common Application S	lick on the directory name Space Required 189,129k None, already installed	X
	Change directory Note: To change the directory you must first uninstall it. Then directory.	n use the wizard to install it		

Figure 261. TNG Framework Directory Location

After choosing the directory location, a new screen will inform you that the system is ready for installation. Click the **Finish** button. After copying the files, the system will launch the services and create the folders. The services that will be started are:

- CA-Autodiscovery
- CA-IPXDiscovery (if this protocol is installed)
- CA-Unicenter
- CA-Unicenter (NR-Server)
- CA-Unicenter (Remote)
- CA-Unicenter (Transport)
- CA-Unicenter Worldview Agent
- TNG DB Server

Unicenter TNG Framework Ins	tallation Wizard	×
	The wizard is ready to install the required files and configure Unicenter TNG Framework. To continue, click Finish. To exit without installing, click Cancel. Status	
	Launching WorldView Setup Functions Launching Unicenter TNG Framework Setup Function Stopping Active Enterprise Management Processes Setting Registry Building Server Map Adding User caunint Creating Services Preparing Unicenter TNG Framework Program Group. Setup Complete, standby for demonstration of Unicen Populating TNG Repository NTSRV101_TNGDB	
	< Back Finish Cancel	

Figure 262. Installing the System and Launching the Services

#### 7.1.1 Launching from a UM Services Browser

To launch the browser from the TNG Framework it is recommended to use Internet Explorer 5.0 plus the recommended Microsoft security patches. In our installation we used Internet Explorer 5.0.

After installing TNG framework, choose the first option on the menu: 2-D Map.


Figure 263. Opening 2-D Map on TNG Framework

The TNG Framework will ask you to select the repository name. The repository is the database (developed by CA as an internal file), where all the information is stored.

Unicenter TNG		×
<u>Select Repository</u>		OK
NTSRV101_TNGDB	▼ Find	Cancel
		<u>H</u> elp

Figure 264. Choosing the Repository

If it is the first time that you are launching the TNG Framework , you will have only one repository. If not, you can choose which repository you will use by clicking the arrow in the box.

After a few seconds, the TNG Framework will show the objects that can be managed. Choose **TCP/IP Network**.

🐼 Unicenter TNG Map (NTSRV101_TNGDB)	_ 🗆 ×
<u>File M</u> odes <u>E</u> dit M <u>a</u> p Report <u>V</u> iew <u>D</u> isplay <u>W</u> indow <u>H</u> elp	
H Managed Objects	
ntsrv101.itso.ral.ibm.com-Unis TCP/IP Network IPX_Network	
System Mes BOX BOX Repository BOX	
Ready	Run Mode

Figure 265. Managed Objects on 2-D Map

The system will build a network map. Choose the subnet in which you are going to work on by double-clicking the icon. In our example, we chose subnet 9. You can also manage your own system, by clicking the icon with the system name (the red icon). Be sure about what you want to manage, selecting only the segment to be analyzed. If you select the whole network, it will generate a lot of traffic on your subnets.



Figure 266. TCP/IP Network Map

Opening the subnet gets you more details about the servers and their segments. For our example, we chose the segment 9.24.106.0.



Figure 267. The Segment Details



To view all the computers in the segment, double-click the Segment Viewer.

Figure 268. Options Visible by Clicking the Left Mouse Button

By clicking with the left mouse button on any machine, a yellow box will appear with the name and the IP configuration.

By clicking the right button you get a pop-up menu. This menu allows you to ping the machine, open a Telnet session, view the machine details, and more. But, it will not allow you to launch the UM Services browser yet. To do that, you have to configure the machine as an IBM machine.



Figure 269. Options Visible by Clicking the Rght Mouse Button

To launch the UM Services browser you need to indicate to the TNG Framework that the machine selected is an IBM machine.

**Note**: This is done *after* you have installed the UM Services code on the TNG system.

To change the specification for a system to be an IBM UM Services-managed machine, click with the right button the machine you want to launch and choose **Reclassify Object**. A window called Class Transfer Dialog will be opened and you have to scroll down through the screen until you reach the object class Workstation.

Class Transfer Dialog	×
The Current Class Name: Unclassified_TCP	
Select a new managed object class:	
ManagedDbjectRoot Memory_banks Memory_banks Node OperatingSystem OtherDevices Performance Printers Probe Processor Router Segment SoftwareDelivery SoftwareDelivery Subnet Switch Uniclassified_Class UnicenterManager Unispace	
⊕- UPS ⊡- Workstation	
OK Cancel <u>H</u> elp	

Figure 270. The Class Transfer Dialog

When you open the Workstation class (clicking the + sign), a list with subclasses appears. You can choose between the IBM\_Windows95 or IBM\_WindowsNT classes. Click your choice and then click **OK**. Another screen will be opened. This screen looks like a notebook and has information about that system. Just click **OK** again to confirm after you update the fields.

Managed O	bject Notebook	Unclassified_TCP	>	IBM_	WindowsNT		×
Name:	WTR05312						
Label:	WTR05312						
æ						, m, V	
	Uuid:	17811ed6-07cb-11d3-91	22-0006;	29b3d55	53	Main	
67	Location:					Status	
	Description:					Comments	]
	Contact:					Interface	
66	Address:	9.24.106.66				Inclusion	
22222222222222	Alarmset name:		Instal	l date:	May 11 1999 1:58PM	Link	
66	Interface type:	ethernet-csmacd	Modif	y date:	May 11 1999 1:58PM	SNMP	
	mondes (pp.		The day	y da.o.	may 11 1000 filder fil	Others	
ြာ Syst	tem Main Group				4		
<u> </u>	<u>C</u> ancel				<u>H</u> elp		

Figure 271. Reclassifying a Class

After clicking  $\mathbf{OK},$  a confirmation message appears and the icon for that system changes to an IBM icon.

Reclassify Objects	×
CAEC018:Reclassify to the class "IBM_WindowsNT "is successful!	
<u>Ok</u> <u>H</u> elp	

Figure 272. Message Indicating the SuccessfulReclassification

Now, if you click the system with the right button, the pop-up menu will show one more option : *UMS*.



Figure 273. The New Option UM Services on the Pop-Up Menu

It's very important to know that this option will be available only for IBM systems. After clicking the **UMS** option, the system will launch your browser with all of the UM Services functions.



Figure 274. Browser with UM Services

# 7.1.2 Inventory

The inventory on a CA environment will depend on the system configuration:

- 1. If you have CA Unicenter TNG installed, the Asset Management Option (AMO) is the core of desktop management, including inventory.
- 2. If you have Unicenter Framework installed, you need the CA AimIT product, which is a tool used to gather inventory information.

For both of them CA provides a batch file (UMClient.BAT) which runs every time a system logs on a server (through the login script). This batch file is responsible for gathering and updating all the hardware and software information about each machine.

The integration of the CA Unicenter with UM Services is done by using this batch file. UM Services modifies this file in order to run a Java Program, which generates the MIF files and stores them into the client machine. When CA Unicenter TNG (through AMO) or Framework (through CA AimIT) needs the information about IBM systems, they can reach them and update the database.

If you already have AMO or AimIT installed, then the umclient.bat modifications are done automatically at installation time. Otherwise, you have to do it manually.

```
      @ECHO OFF

      REM
      Unicenter TNG Asset Management Client

      REM
      UMCLIENT.BAT

      REM
      Uer. 2.0

      REM
      Copyright (c) Computer Associates International, Inc. 1995/1997

      REM
      REM

      REM
      This is a template file, any customizations can be made here.

      @echo off
      if not exist "%UMS_HOME%\inventory\cim2mif.jar" goto umaskip

      %UMS_DRIVE%
      DRIVE%
```

```
cd "%UMS_HOME%\inventory"
@jview -cp:a .\cim2mif.jar;"%UMS_HOME%\httpserv\cimdre.jar";"%UMS_HOME%\httpserv\cimx
s:
cd\agents
```

:umaskip

REM Detect the Operating System, and call the appropriate module...

```
UMDTCDOS.EXE %1 %2 %3 %4 %5 %6 %7 %8
IF ERRORLEVEL 255 GOTO EXIT
IF ERRORLEVEL 144 GOTO STARTW95
IF ERRORLEVEL 132 GOTO NORUNW16
```

IF ERRORLEVEL 128 GOTO STARTW16 IF ERRORLEVEL 64 GOTO RUNOS2

Figure 275. The UMClient.BAT File

After installing the UM Services, the first lines of the UMClient.BAT are changed. UM Services adds some lines in order to call the Java program. These lines can be seen in the square in Figure 275.



Figure 276. MIF and MNV File Generation

🔯 Exploring - Agents					_ <b>8</b> ×
<u>File E</u> dit <u>V</u> iew <u>G</u> o F <u>a</u> vorites <u>T</u> ool	s <u>H</u> elp				Ê
(↓. →. ⊡ )		- L)	X		
Back Forward Up C	ut Copy Pasti	e Undo	Delete Properties	Views	
Address 🚞 C:\AIMIT30\Agents					
All Folders	× 🖪	Product.dat	🛄 Swmwnt.exe	🛅 Umdtodos.exe	🔃 Umtplw16.exe
🔗 Desktop	▲ S	Psapi.dll	🐻 Synclist.inf	🛅 Umedit.exe	🔜 Umtplw32.exe
🔄 🗐 My Computer		Psapi351.dll	🔊 Tihelpnt.dli	🛅 Umedos2.exe	🛅 Umwhat.exe
3½ Floppy (A:)		RegIT.exe	🥝 Tngremoexe	🛅 Umiswdos.exe	👔 Umwhat.hlp
🖻 📻 (C:)		Scredit.exe	📳 TNGRemov.exe	🛅 Umiswos2.exe	
🚊 💫 Aimit30	8	Scredit.hlp	폐 Umcinst.dat	📚 Umisww16.exe	
		Setinst.exe	🛅 Umcinst.exe	🛸 Umisww32.exe	
🕀 🧰 Console		Setstub.exe	👅 Umclidos.bat	S Inc. Startell	
- Domain	N 10	Shelhk16.dll	Umclient.bat	🔄 Umos2lan.dll	
Engine	N 10	Shelhook.dll	🛅 Umclios2.exe	🔊 Umos2lib.dll	
i ⊡ Sector		Silent.bat	👔 Umclios2.hlp	🔊 Umos2nb.dll	
Setup		Silent.exe	🛃 Umclisvc.exe	🔊 Umos2nw.dll	
andy		Swmdos.exe	🛃 Umcliw16.exe	🔊 Umrscw16.dll	
Ca_appsw		Swmntdog.exe	🛃 Umcliw95.exe	🔊 Umrscw32.dll	
Ca_lic		Swmntw16.exe	🛃 Umcliwnt.exe	🔊 Umset.dll	
		Swmos2.exe	🛃 Umclogin.exe	🛅 Umsetdos.exe	
		Swmspdos.exe	🛅 Umcrem.exe	🚮 Umsetw16.exe	
⊕ 🖂 Multimedia Files		Swmspos2.exe	🛃 Umostub. dat	🎇 Umspawn	
		Swmspw16.exe	🔜 Umostub. exe	🛅 Umsyndos.exe	
		Swmspw95.exe	🐻 Umostub.ini	Umsynos2.exe	
	<b>D</b>	Swmspwnt.exe	💳 Umdifdos.exe	🕌 Umsynw16.exe	
🗄 🔁 Tngfw	<b>1</b>	Swmstat.exe	🛅 Umdifos2.exe	🔡 Umsynw32.exe	
🕀 🛅 Trigsd		Swmw16.exe	🗢 Umdifw16.exe	Umtpldos.exe	
🗈 😜 Winnt	<b>b</b> (	Swmw95.exe	🗢 Umdifw32.exe	Umtplos2.exe	
🕀 投 990413_1557 (D:)				-	
Printers					•
1 object(s) selected	2.81KB			🛄 My Compute	it.

Figure 277. The Location of the bat File in the AimIT Folder on the Server

The file *UMclient.bat* is launched every time the machine logs on to the network and it updates all the hardware and software information. A screen informing you that the data is being collected is shown.

**Note:** The UM Services version we tested didn't allow us to gather information without logging on to the network.



Figure 278. Collecting the Inventory Information

After collecting the data, a MIF file is generated and stored on the client machine with a .MIF extension. When CA needs to update its database, it get this information and converts it automatically into a .MNV extension. The MNV format is CA's standard.

Statute - Clineton			
Exploring - Clientws	-1		
<u>File Edit View Go Favorites Too</u>			<b>e</b>
	K Dopy Paste		
	Cut Copy Paste	Undo Delete Prop	erties Views
Address C:\CLIENTWS	10		
All Folders Ca_appsw Ca_ic Ca_ic Ca_ic Cientus Cien	Bak     Sector     C     Ign.inv     Ignet.inv     Ignet.inv     Ignet.inv     Isd.inv     Iws_gen     Ncclient     Umback     Umback     umsinv.MNV		
1 object(s) selected	42.1KB	🛄 My Computer	

Figure 279. MIF File Localization on the Client System

The MIF and the MNV files have the same information but in different formats. The MIF file is generated by a Java program installed by UM Services. The MNV file has the same information as the MIF, but in CAs format.

<mark>≣ umsiny-Notepad</mark> File <u>E</u> dit <u>S</u> earch <u>H</u> elp	_ & ×
Start Component Name = "UMS Inventory"	
Name - ons inventory	
Start Group	
Name = "AssetID"	
Class = "IBM-PCCo UMA MIF AssetID 001"	
ID = 2	
Key = 1	
Start Attribute	
Name = "Index"	
Id = 1	
Type = Integer	
Value = 1	
End Attribute	
Start Attribute	
Name = "System Name"	
Id = 2	
Type = String(255)	
Value = "WIN95"	
End Attribute	
Start Attribute	
Name = "System Model"	
Id = 3	
Type = String(255)	
	•

Figure 280. Example of a MIF File Format

📕 umsiny - Notepad	_ & ×
<u>File E</u> dit <u>S</u> earch <u>H</u> elp	
000101[UMS Inventory]	<b></b>
000202[UMS Inventory AssetID]	
00010201Index 1	
00020500System Name WIN95	
00030500System Model 686227U	
00040500LCCM Image Profile	
00050500LCCM Image Date 1980 01/01 00:00:00 UTC:0000	
00060500System Serial Number/78HMYZF	
00070500System GUID DCE01384-1EF1-2012-97AE-0004ACEEB2B2	
00080500System Asset Number  00090500AssetID Taq 686227U78HMYZF	
000A0500Last Inventoried 1980 01/01 00:00:00 UTC:0000	
000B0500Purchase Date 1980 01/01 00:00:00 UTC:0000	
000C0500System Location	
000302[UMS Inventory BIOS Details]	
00010201Index   1	
00020500BIOS Manufacturer IBM	
00030500BIOS Version NVKT37AUS	
00040500BIOS Release Date 1998 09/10 00:00:00 UTC:0000	
00050500Supports SMBIOS true	
00060201SMBIOS Major Version 2	
00070201SMBIOS Minor Version 1	
000402[UMS Inventory Cache]	
00010201Index   1	
00020500Level Primary	
00030201System Cache Size 32	<u> </u>
4	F

Figure 281. Example of a MNV File Format

There are two different ways to use the UM Services inventory in CA Framework. The first is using the Admin Console on the AimIT menu.



Figure 282. Accessing the Admin Console on AimIT Menu

Click the Admin Console option to get the user validation screen.

AimIT User	Validation					
	Enter a user name and password that is valid for this Domain.					
	<u>U</u> ser name:	ADMIN				
	Password:					
		<u>0</u> K	C <u>a</u> ncel			

Figure 283. Validation Screen on Aimlt Admin Console

After logging in, the next screen will be the main screen for AimIT. It shows the entire domain and its machines.

🖗 AimlT 3.0 - Admin Console - [Domain - DOMAIN]					_ 8 ×
∰D Eile Edit ⊻iew Iools Settings Window Help					_ 8 ×
Search         Goto         Mark         Encircle         Encircle         Line         Mark         Mark	New Query	Jo <u>b</u> List	New Job	Module List	
DOMAIN     DOMAIN:WIN95     DOMAIN:WIN95     DOMAIN:WIN95     DOMAIN:WIN95     DOMAIN:WIN95     DOMAIN:WIN98     OOMAIN:WIN98     WSER					
3 object(s) found					
Ready	<mark>i (2)</mark> (2)	0 🕕	() 0 () A	ADMIN 5/13/99	6:21 PM

Figure 284. The AimIt Main Screen

After selecting a machine, click the **Inventory** option.



Figure 285. Options on Inventory

The inventory option will show the main characteristics of each component in the selected computer. Clicking the **Inventory Browser** opens up a window with detailed information.



Figure 286. Detailed Options on Inventory Browser

Open the detailed window. In the left-hand paneof the window you can see the components; on the right-hand pane you can see the status. At the bottom of the left pane, there is a button called Additional. By clicking this button other information can be accessed; for example, the UMS option with all the information about the IBM machine. This information will be displayed in the AimIT standard - the topic in the left pane and the detailed information in the right pane.



Figure 287. UM Services Inventory Showing the Port Connectors

There is another way to get the UM Services option. By using the 2D-Map option (from TNG Framework TNG), you can see an icon called AimIT Network.

Unicenter TNG Map (NTSERV_TN)         Image: A state of the state			_ 8 _ 8,	××
NTSERV - Unicenter Common	TCP/IP Network NTSERV - Uni	icenter Event Manag IBM_U	AimIT Network	
Software Delivery-NTSERV	Software Delivery-NTWORK	Software Delivery-WIN98	Software Delivery-WIN95	
Ready			Run Mode	

Figure 288. The AimIT Network Icon

Of course, the AimIT Network icon will just be available when the AimIT is installed on the TNG Framework machine.

Access the AimIT Network by double-clicking the icon in Figure 288. A new menu will appear, such as the menu on the AimIT Admin Console.

Wnicenter TNG Map (NTSERV_TNGDB)         Eile Modes Edit Map Report View Display Window Help         Image:	_ & ×
AinIT Network	
AimiT Unispace DOMAIN	
🎇 System Mes 🖗 🗆 🗶 Update Log 🛛 🖗 Repository 🖗 🗆 🗶	
資用 Managed D 『日本』 (注意 IBM_UMS 『日本』  Ready	Run Mode

Figure 289. Accessing the Inventory Using 2-D Map

On the domain you can see the icon *domain:computer*. Accessing this icon, the 2-D Map will show all the computers configured on that domain.

✓ Unicenter TNG Map (NTSERV_TNGDB)         File Modes Edit Map Report View Display Window Help         □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	[=[#]×
	Ainl T Network
	AimiT Unispace DOMAIN
System Mes	огу 81Х
	Bun Mode

Figure 290. The Computers in the Domain

By clicking one of the objects you will receive the same options that you had on the AimIT Admin Console, including the inventory.

Unicenter TNG Map (NTSERV_TNGDB) Ele Modes Edit Map Report View Display Window Help Ele Modes Edit Map Report View Display Window Help	<u>-</u> @	×
	Image: AimIT Network       Image: AimIT Network	
Intel Pentiumii N/A 64 Mb Inventory obs Remote Control		
Policies Software	AimIT Unispace DOMAIN	
192 c		
🞇 System Mes 🗗 🗙 🧱 Update Log 🛛 🗶 🞇 Reposit	itory 🗗 🗙	
HE Managed O FOX HE IBM_UMS FOX	Run Mode	

Figure 291. Accessing the Inventory on 2-D Map

Accessing the inventory, you will have the same options as shown in Figure 286.

### 7.1.3 Software Distribution

To distribute software, another CA module called ShipIT is used. It has a simple interface, using libraries and the drag and drop concept to launch the distribution.



Figure 292. ShipIT Main Screen

To add the UM Services library, we had to copy all of UM Services content to the folder \TNGFW\ibm\sw\_distribution. In this folder, there were two files: procedure.bat and rr\_swdistrib.bat.

In fact, the file rr\_swdistrib.bat calls the procedure.bat. These two files were installed when the UM Services UIM was installed.

**Note**: Actually, all the files needed should be copied automatically during the UM Services installation. The next UM Services releases will do that. For our tests, we had to copy them manually.



Figure 293. Software Dstribution Folder with The bat Files



Figure 294. The rr\_swdistrib.bat File

The file rr\_swdistrib.bat uses CA commands to include a new path and calls the file procedure.bat.



Figure 295. The procedure.bat File

After running procedure.bat (after closing ShipIT and using an MS-DOS window), it creates the Library UM Services agent install. This library must be used to perform the distribution of UM Services software. To distribute other software, new libraries must be created.

Command Prompt	
C:\INGFW\ibm\sw_distribution>rr_swdistrib.bat	
C:\TNGFW\ibm\sw_distribution/sdcmd regsw item="IBM UMS agent install" version= Ø path=c:\Tngfw\ibm\sw_distribution\ procedures=procedure.bat SD Command Line v1.2 Copyright (c) 1996, 1998 Computer Associates Intl. Connecting to Server OK	1.
Command is processed SDCMD<0>: OK	
C:\TNGFW\ibm\sw_distribution>	

Figure 296. Running the rr\_swdistrib.bat File

To start software distribution, run the SD Explorer on the ShipIT menu and you will see the UM Services library created by the batch files.



Figure 297. Running Software Distribution Explorer on ShipIT

After the login screen, the system will show the main screen of the software distribution Explorer.



Figure 298. The Software Distribution Explorer with the UM Services Library

There are three main options:

- 1. Computers Will show all the computers that can receive any installation.
- 2. Software Library The libraries where the programs to install are stored.
- 3. Jobs Shows the installation progress or schedule.

To install an application, just drag this application and drop in the computer selected. You can also configure groups and schedule the installation.



Figure 299. Job Status during an Installation

To create a new library, you may have to use the ShipIT menus.

🚔 NTSERVL - ShipIT Explorer	
<u>File</u> Edit <u>V</u> iew <u>H</u> elp	
<u>D</u> elete Properties	Item
- Tohenes	🝠 IBM UMS agent install 1.0
E <u>x</u> it <sup>S</sup>	🝠 SD Admin Console for Win95 2.0
📑 🕀 🖳 NISERVL	🝠 SD Admin Console for WinNT 2.0 (I386)
🖶 🗐 NTWORK	🝠 SD Agent for Win95 2.0
	ヺ SD Agent for WinNT 2.0 (1386)
	ヺ SD Server for WinNT 2.0 (I386)
🗄 🗝 Software Delivery Server	
🚍 📲 🖍 Software Library	
庄 🗂 IBM UMS agent install 1.0	
🗄 🖷 🕤 SD Admin Console for Win95 2.0	
吏 🖷 🕤 SD Admin Console for WinNT 2.0 (1386)	
庄 🗂 SD Agent for Win95 2.0	
庄 – 🗂 SD Agent for WinNT 2.0 (I386)	
🗄 🗂 SD Server for Win NT 2.0 (1386)	
🗄 📲 Jobs	
📖 🕒 IBM UMS agent install 1.0:UMS SWdistribution	
Create new object of selected type	

Figure 300. Adding a Software Library

The creation of an unattended installation library requires you to write a script with all the steps to install the software, including answers such as yes, no and path.

After it is created, this library can be stored and launched as you need it.

Register p	rogram			X
General				
	Name:	test		
	Version:	1.0		
Based o	in:			
Filed by:		Local Administrator		
Register	red:	05/18/99 05:37 PM		
Supplier	:			
Commen	nt:			
		ОК	Cancel	Help

Figure 301. Creating a New Library



Figure 302. Steps for Library Creation

#### 7.1.4 Alerts and SNMP

The Unicenter TNG upward integration module configures the Unicenter TNG Event Manager with message records and actions customized to UM Services SNMP traps. When the Unicenter server receives a UM Services SNMP trap of severity level that is *critical*, by default it displays a banner showing a description of the trap.

UM Services installs two SNMP V1 MIB files that can be viewed with Unicenter TNG's Object View tool. The names of the MIB files are ums.mib and umsagent.mib.

# Chapter 8. Intel LANDesk Upward Integration Module

UM Services provides some integration into the Intel LANDesk Management Suite. In this chapter we show you how to set up your environment for the integration. We also show you how the integration works from an inventory perspective. We do not go into a lot of detail on how to customize Intel LANDesk. Also, we chose to use the default Microsoft Access database instead of SQL V7.0.

# 8.1 Installing Intel LANDesk V6.2

You can install the suite directly from the CD-ROM or a LAN image of it. You just need to have a license key ready. For the integration with UM Services you need to install the Intel LANDesk Desktop Manager component.



Figure 303. Desktop Manager

As with most product installation on Windows NT you are advised to close other applications to prevent any problems during the installation. You should be logged in as a user with administrator privileges. In this case we were running Windows NT Server Enterprise Edition V4.0 with Service Pack 4 installed.

You might want to list your environment variables and your services before the install so you can see what changes on your system. In some cases, you might have security issues for some tasks and who can start or stop them.



Figure 304. Initial Welcome Message

Click **Next** and you get a prompt for the license. After acknowledging that window you choose the LANDesk features that you need. For purposes of integration we installed only the Core Server and the Management Console.



Figure 305. Components to Be Installed

The next part of the install is related to the database. There is an option to use the default built-in database or another database like SQL V7.0. We chose to use the default database in this case since we didn't have a lot of data to store.



Figure 306. Microsoft Access of SQL V7.0

You need to provide a user ID to which the service can log on to. We used our administrator user ID.

Management Database:	Data Source Information
	Select a "System" ODBC data source (DSN) that connects to your Management database.
	Data source name: LocalServer Edit Sources Login name: administrator Password: **********
	< <u>B</u> ack <u>N</u> ext > Cancel

Figure 307. Data Source Information

After the database access was set up the rest of the code was copied to our system and Intel LANDesk Desktop Manager was installed. You still need to set up the client interface. You need to execute <code>ipsetup.bat</code>.

🔝 Client Setup Utili	ty		×
Target computer:	BARRYPS2		 [nstall
<u>C</u> omponents to install:			Cancel
Common Base Age Common Base Age Software Distribution Custom Data Forms Virus Protect Network Settings CUP/IP	n	C Neibios	Hep
Exec /NT	ntory Scanner uting "LDISCN32.6 "=BARRYPS2:500 appl.ini /NOUI /N(	07 /S="BARRYPS2"	

Figure 308. ipsetup.bat Creates the Client Directory

That creates a directory on your C: drive called \LANCLIENT. You then need to reboot your system.

Running ipsetup.bat will make generically discovered systems an LDMS client. It will push down the Common Base Agent (CBA). This makes it unnecessary for the user to choose the LANDesk Management Suite Integration option during the install of UM Services (which would also install the CBA). If you try to install it twice it will cause problems.

You get Idinv.bat and the inventory scanner with the UM Services installation. They are not contingent upon checking the LDMS integration box during the installation of UM Services. Some customization of Idinv.bat is still required and you should add it to your startup if you want to automate the generation of UM Services-specific MIF files.

Client Se	tup Utility 🛛 🕅
?	In order to complete this client configuration, this computer will need to be restarted. Restart Windows now?

Figure 309. Reboot after the Desktop Manager and the Client Code Are Installed

Upon rebooting you should look in your Startup folder. There should be two new icons placed there. One of them is called Custom Data Forms and the other is called Inventory Scan.



Figure 310. LANDesk Startup Tasks

You need to remove the Inventory Scan icon from the startup. You are going to replace that with a batch file that comes with the UM Services installation later on.

🧰 Startup 📃 🗖 🗙	📴 Startup 📃 🗖 🗙	
<u>F</u> ile <u>E</u> dit <u>V</u> iew <u>H</u> elp	<u>F</u> ile <u>E</u> dit <u>V</u> iew <u>H</u> elp	
🔄 Startup	🔄 Startup	New startup
	Custom Data Shortcut to	procedure from UM Services
Custom Data Forms	Custom Data Shortcut to Forms Idinv	
1 object(s) 35 //	2 object(s)	

Figure 311. Remove the Inventory Scan

You are now ready to install UM Services and its integration code for Intel LANDesk.

# 8.1.1 UM Services Installation for Intel LANDesk

As with all product installations you should stop all other tasks that you can on the system and you should also have a backup of the registry and the system. We did not have any problems with the installation process and did not need to restore anything.



Figure 312. UM Services Welcome

The integration of UM Services and Intel LANDesk is different from the other integration components. For all of the others in this redbook you need to click the Workgroup/Enterprise Integration button. For LANDesk you need to click the top button, **Universal Manageability Services**.



Figure 313. UM Services Plus Intel LANDesk

By default the LANDesk component is not checked. We clicked the check box LANDesk(TM) Management Suite Integration.



Figure 314. Integrated Install

You need to decide in which directory the code gets installed. We used the default installation directory. On our system, Windows NT was installed on the D: drive so that's where UM Services points to by default.



Figure 315. Install Directory

Enter the user ID and password for an ID that has administrator privileges.

Edit Data	X
$\checkmark$	Please enter the administrator's User ID and Password for Web access to the Universal Manageability Services.
	User ID administrator
	Password
	Confirm Password
<b>~</b>	IP Port number for Web access to Universal 411 💌 Manageability Services (default is 411):
	< <u>B</u> ack <u>N</u> ext > Cancel

Figure 316. Administrator ID

Click Yes so that updates can be made to your start menu for UM Services.



Figure 317. Start Menu Modifications

If you run the inventory scanner automatically or the ldinv.bat file that comes with the UM Services integration you should see a pop-up window similar to the following:

Shortcut to Idiny
A subdirectory or file dmi already exists.
A subdirectory or file dos already exists.
A subdirectory or file mifs already exists.
IBM CIM to MIF Generator, version 1.10
Creating MIF files in D:\dmi\dos\mifs
Processing aol
Processing assetid
Processing bios
Processing cache
Processing chassis
Processing cim
Processing config
Processing ipconfig
Processing ipxconfig
Processing lease
Processing memory
Processing network
Processing personalization
Processing ports
Processing processor
1
1

Figure 318. Gathering Inventory

All of the MIF files are updated or created in \dmi\dos\mifs. An example of one of them follows:

```
Start Component
  Name = "UM Services Inventory"
   Start Group
     Name = "DMI"
      Class = "IBM-PCCo|UMA MIF DMI|001"
     Key = 1
     Start Attribute
        Name = "Index"
        Id = 1
        Type = Integer
        Access = Read-Only
        Storage = Common
        Value = 1
      End Attribute
      Start Attribute
        Name = "Version"
        Id = 2
        Type = String(64)
        Access = Read-Only
        Storage = Common
        Value = "Intel DMI Service Provider (Win32) V2.54"
      End Attribute
      Start Attribute
        Name = "Product"
        Id = 3
        Type = String(64)
        Access = Read-Only
        Storage = Common
        Value = "Win32 DMI Service Provider"
      End Attribute
      Start Attribute
        Name = "Win32 DMI Directory"
        Id = 4
        Type = String(18)
        Access = Read-Only
        Storage = Common
Value = "C:\\DMI\\Win32\\MIFDB"
      End Attribute
   End Group
   Start Table
     Name = "DMI"
      Class = "IBM-PCCo|UMA MIF DMI|001"
```

```
Id = 2
{ 1, "Intel DMI Service Provider (Win32) V2.54", "Win32 DMI Service Provider",
"C:\\DMI\\Win32\\MIFDB" }
End Table
```

End Component

You need to make a modification to the Idinv.bat file before you can use it. You need to remove a rem statement (which makes it a comment card), and you also need to make sure you are pointing to the right hard drive. By default, the system assumes that you have installed the code and Windows NT on the C: drive.



Figure 319. Inventory Scanner Batch Update

After you have run the inventory scanner routine you can access UM Services using either MMC or a Web browser. In this case we chose to use a Web browser.

Enter Network Password				
<u> (</u>	Please type your user name and password.			
₿°.	Site:	9.89.41.190		
	Realm	IBM UMS		
	<u>U</u> ser Name	administrator		
	<u>P</u> assword	*****		
	Save this password in your password list			
		OK Ca	incel	

Figure 320. Accessing UM Services Data Using a Web Browser

In addition to bringing up the UM Services interface we brought up the Intel LANDesk Desktop Manager to show the inventory integration. There is much inventory-related data that LANDesk captures. The following two figures show some of it:



Figure 321. Desktop Manager (Part 1 of 2)

The MIF data contains the integrated UM Services inventory information.

	Attribute	Value
🚊 🗐 UM Services Inventory	🔊 Build Number1	WMYT27AUS
🧇 🕺 Cache	🛃 HTTPD Port1	true
📃 Alert On LAN Settings	🔊 🔊 Index1	UMServices
📃 AssetID	🔊 🔊 Name1	UMServices
📕 BIOS Details	🔊 SNMP Traps Enabled1	true
📃, CIM	🔊 Trap Destinations1	9.89.41.191
🖳 DMI	w Version1	2.0
📙 IBM UM Services		

Figure 322. Desktop Manager (Part 2 of 2)

Figure 323 shows you the discovery process for Intel LANDesk agents:

Desktop Manager - CBA Discovery     Eile Edit View Device Tools Options Window Help	
	ਡ ] in ∰ ⊖ 😃 🗗 X 1
Network View	
Network     Device     ABRRYPS2	one level
En CBA Discovery	
This tool searches the network for computers supporting the Common Base Agent (CBA) and adds them to the database. However, no inventory information is collected for those machines.     CBA Discovery     Search status: Waiting to start     Protocols using: TCPIP, NetBIOS     Machines found: 0     Machines added: 0     When complete press the F5 key to refresh the Network View to see new computers.	Start Gpp ⊆lose Help
For Help, press F1	

Figure 323. Discover Intel LANDesk Agents




Figure 324. Integrated UM Services Inventory Information

#### 8.1.2 Monitor the Inventory

One interesting task to try is to pick a field in the inventory and monitor it so that if the data changes an event can be created. For simplicity we picked the user data field. The following setup would be true for any of the inventory data fields.



Figure 325. User Data

If we right mouse click any of the attribute	e fields in the left-hand pane you get a
pull-down menu. Select Properties.	

Properties X	Properties X
Characteristics Value	Characteristics Value
<u>A</u> ttribute name: Index1	Attribute name:
Attribute flags           Liser Defined           Primary key           Notify event log on change           Irack changes in database history	Attribute flags ☐ ∐ser Defined ☐ Brimary key ☑ Notify event log on change ☑ Irack changes in database history
<u>G</u> enerate AMS alert <u>Event log/alert severity:     [None]     [None]     Information     Warning     Critical </u>	☑ Generate AMS alert         Event log/alert severity:
OK Cancel Help	OK Cancel Help

Figure 326. Data Property Characteristics

After you click **Notify event log on change** you should try to change the field and rerun the inventory scan. You could also use the Desktop Manager interface to turn on many different attribute bytes on a single screen.

Figure 327. Alert Settings

Pesktop Manager He	
Help <u>T</u> opics <u>B</u> ack	<u>Options</u>
Inventory Change	a Settings dialog
computers, and to dete	nge Settings dialog to choose which inventory attributes are logged when changes occur at individual ermine where those changes are logged. Inventory changes can be logged to a Desktop Manager i the Windows NT event log, or to AMS <sup>2</sup> for immediate alerting. You can log changes to some or all
The Inventory Change	Settings dialog contains the following features:
Feature	Description
Current inventory	Lists all objects stored in the Management database. Click an object to display its attributes in the Log Event In list. Expand an object group to see the data objects contained within it.
Log event in	Lists the attributes of the inventory object selected in the Current inventory list. To set where inventory changes are logged, select an attribute and mark one or more options.
	Mark the Inventory option to log inventory changes in the Inventory Changes History dialog.
	Mark the NT Log option to log inventory changes to the Windows NT event log.
	Mark the AMS <sup>2</sup> option to send inventory changes as an alert via AMS <sup>2</sup> . Configure AMS <sup>2</sup> alerts from the Alert Configuration window.
Log/Alert severity	Select an alert priority. This combo box is dimmed until an attribute is selected in the Log Event in window, and the NT Log or AMS <sup>2</sup> options are marked.

Figure 328. Help for Inventory Alerts

There are other types of alerts that you can set up with Intel LANDesk Manager. The following section shows you the settings.

#### 8.1.2.1 Alert Settings in LANDesk Manager

From the main Desktop Manager interface click View -> Alerts -> Settings.



Figure 329. Alert Settings

Using the right mouse to click the Intel Inventory Scanner then click Configure.



Figure 330. Configure the Alert

You are presented with a window that lets you set up the action to take. We chose to write to the event log when the scanner was run.

Select Action			×
Actions:			
Message Box	Send SNMP Trap		
Send Page	Write to Event Log		
Send Internet Mail	🔊 Load an NLM		
Run Program	-		
((+)) Broadcast			
	< <u>B</u> ack <u>N</u> ext>	Cancel	Help
L			

Figure 331. Write to the Event Log

Click Next after you select your option.

Select Action Computer	Select computer to perform action.	Qptions Discover
	< <u>B</u> ack <u>N</u> ext > Cancel	Help

Figure 332. Discovered Systems

After you select your system click Next.



Figure 333. Default Settings Updated

Now that all your alerts are configured you can change your original data in the UM Services Asset ID window to generate an event. You could just have easily turned the monitor on for the amount of memory in a system.

2 9.89.41.190 - Microsoft Inte	ernet Explorer	- U ×
<u>F</u> ile <u>E</u> dit <u>V</u> iew F <u>a</u> vorites	<u>I</u> ools <u>H</u> elp	
Back Forward Stop	😰 🚮 🔞 💽 🧭 🎼 🕼 - 🎒 Refresh Home Search Favorites History Mail Print	
🛛 Address 🙋 http://9.89.41.190:41	11/index2.html 🔽 🔗 Go	Links »
iem. 🔤	Next System	?
Information Tasks 9,89,41.190 Configuration Aleft On LAN Asset ID Asset ID Network SNMP User Security Tools Multiple Links Web Links System Updates	Asset ID         Serialization       System       User       Lease       Asset       Personalization       Warranty         Name       barry nusbaum         Phone       781-895-1276         Location       Raleigh         Department       hz8d         Position	
¢]	🔰 🚺 👔 Internet	1.

Figure 334. Asset ID User Data

After you change any field and click **Apply** rerun the inventory scan.



Figure 335. Rerun Inventory Scan

If you look in the Windows NT Event Viewer you should see several events.

R Event Viewer - Application Log on \\BARRYPS2						
Log ⊻iew <u>I</u>	<u>D</u> ptions <u>H</u> elp					
Date	Time	Source	Category	Event	User	Computer
3 8/4/99	8:24:22 AM	Intel Inventory	ServeNone	4098	N/A	BARRYPS2
🐵 8/4/99 👘	8:24:22 AM	Intel Inventory	ServeNone	4098	N/A	BARRYPS2
🐵 8/4/99	8:24:22 AM	Intel Inventory	ServeNone	4098	N/A	BARRYPS2
🐵 8/4/99	8:24:18 AM	Intel Inventory	ServeNone	4098	N/A	BARRYPS2

Figure 336. Events as a Result of Changing the Data Felds

Figure 337 shows the event detail for each of the events. It indicates the original value in each field and the new value:

vent De	etail		Event Deta	il		
<u>D</u> escrip Attribut ID:{CD )' modif (ID: {CI Previo		2	ver Time: User: Computer: Description Attribute " BARRYPS (ID: (CD9) Previous	Jser Name1' of comp	Type: Category: oonent 'User Details	Intel Inventory Server Error None s' modified for node
I NEW V	alue, DAMITTI 52					
vent D		_	Event De			
1		Event ID: 4098	Date:	8/4/99	Event ID:	
Date: Time:	etail 8/4/99 8:24:22 AM	Source: Intel Inventory Ser	Date: rver Time:	8/4/99 8:24:18 AM	Source:	Intel Inventory Serve
Date: Time: <u>U</u> ser:	etail 8/4/99 8:24:22 AM N/A	Source: Intel Inventory Ser Type: Error	Date: rver Time: <u>U</u> ser:	8/4/99 8:24:18 AM N/A	Source: Type:	Intel Inventory Serve Error
Date: Time: <u>U</u> ser:	etail 8/4/99 8:24:22 AM	Source: Intel Inventory Ser	Date: rver Time: <u>U</u> ser:	8/4/99 8:24:18 AM	Source:	Intel Inventory Serve Error
Date: Time: <u>U</u> ser:	etail 8/4/99 8:24:22 AM N/A ter: BARRYPS2	Source: Intel Inventory Ser Type: Error	Date: rver Time: <u>U</u> ser:	8/4/99 8:24:18 AM N/A r: BARRYPS2	Source: Type:	Intel Inventory Serve Error

Figure 337. Event Details

You could also go back to the property values and select the **Value** tab to see a history of changes for that field.

Properties	Properties
Characteristics Value	Characteristics Value
Attribute name:	Attribute value:
Attribute flags	Historical values:
🗖 User Defined	Date Modified Value
Erimary key     Erimary key     Notify event log on change     Irack changes in database history     Generate AMS alert	8/4/99 8:24:22 AM barry nusbaum
Event log/alert severity:	
OK Cancel Help	

Figure 338. Property Values

## **Appendix A. Special Notices**

This publication is intended to help systems management professionals implement UM Services in their existing environment. The information in this publication is not intended as the specification of any programming interfaces that are provided by UM Services. See the PUBLICATIONS section of the IBM Programming Announcement for UM Services for more information about what publications are considered to be product documentation.

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- Universal Management Agent: Functions and Integration, SG24-5294
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