UM Services Plus

For

Tivoli

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Understanding UM Services Plus for Tivoli

UM Services Plus for Tivoli is a Tivoli Plus module that integrates UM Services software with the Tivoli Management Environment (TME 10).
This chapter describes the following:

- Features of UM Services Plus for Tivoli
- UM Services software
- Planning considerations
- Installation overview
- Management overview

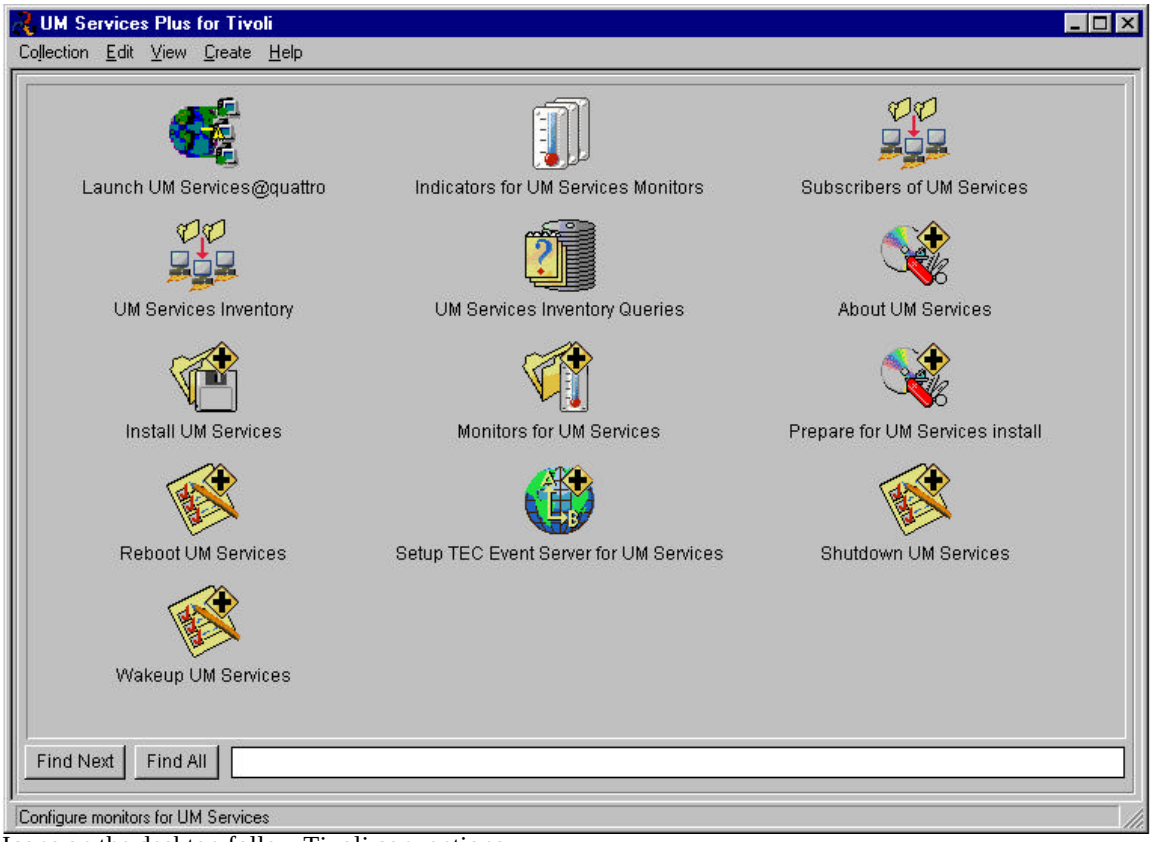
Features of UM Services Plus for Tivoli

UM Services Plus for Tivoli is a Tivoli Plus module that adds administration of UM Services to the Tivoli Management Environment. With UM Services Plus for Tivoli, system administrators can:

- **Deploy**: Distribute the Plus module and the UM Services software for supported operating systems.
- **Monitor** : Monitor UM Services availability for potential problems through either Tivoli Sentry or the Tivoli Enterprise Console (TEC). Receive hardware-related events from UM Services into the TEC.
- **Manage**: Launch UM Services against a client machine, wakeup/reboot and shutdown client machines, acquire hardware and software inventory information.

The UM Services Plus Desktop

Administrators work with UM Services Plus from the UM Services Plus for Tivoli window:



Icons on the desktop follow Tivoli conventions.

- **Profile Manager** icons are provided for UM Services clients. The profiles can be used as subscriber lists for tasks and inventory scans.
- **Configure** and **Install** icons are provided for performing software distribution.
- **Task** icons are provided for management operations. A task operates on subscribers.

- **Monitor Collection** icons are provided for setting up and deploying distributed monitors.
- **Indicators** are provided for viewing Distributed Monitor conditions.
- A **Setup TEC Event Server for UM Services** icon is provided for integrating event classes and rule definitions into the TEC server.
- An **Inventory Query Library** is provided for obtaining hardware and software inventory from UM Services client hosts.

UM Services Software

UM Services software provides hardware manageability compliant with the WBEM 2.2 Specification. It also provides tasks such as Remote Control. For a complete description of UM Services software, see the UM Services User Guide.

Planning Considerations

The following sections identify special issues pertinent to planning for UM Services Plus installation.

Platform and Path Considerations

The Plus module enables management of a multi-platform UM Services installation. Some restrictions apply to the installation and configuration of UM Services software.

Adding UM Services Plus for Tivoli Software

After adding the UM Services Plus module, the following operations can be performed from the Plus module's window on the TME desktop:

- ***Install UM Services***. The Plus module employs the services of Tivoli Software Distribution software to install UM Services on Windows 2000, Windows NT, or Win9x clients.
- ***Monitor UM Services***. The Plus module employs Tivoli Distributed Monitoring software to poll the monitored resources and display their condition. Monitors are provided for the UM Services http daemon and SNMP subagent processes.
- ***Configure the Tivoli Enterprise Console (TEC) to accept UM Services events***. Configuration includes adding and/or updating classes, rules, and an event group. The source of UM Services events is its distributed monitors or the TEC SNMP adapter, which can be configured to send TEC events for UM Services SNMP traps.
- ***Manage UM Services hosts***. A Profile Manager is provided to enable management of UM Services. Tasks are provided on the desktop to perform management operations, including running jobs against the subscribers of the Profile Manager.
- ***Scan Inventory Invormation.*** A Profile Manager is provided to hold software and hardware inventory scan profiles. A query library is provided to query for the information collected by the inventory scan from the subscribing endpoints.

Installation Overview

This section summarizes the steps required to install UM Services Plus for Tivoli and set up all of its services.

UM Services Plus for Tivoli

1. Be sure that Tivoli is running the Tivoli Object Dispatcher process.
2. From the TME desktop, install the Plus module on the TMR server, the TEC server, and any other desired managed nodes.
3. Configure the TEC server. Configure event consoles to access UM Services events.
4. Set up and distribute the distributed monitors (Sentry monitors).
5. Configure the Tivoli Inventory database with UM Services tables.
6. Configure a filepackage for distributing UM Services to all of its supported platforms.

Management Overview

Once UM Services Plus for Tivoli is installed, management and monitoring operations from the Plus module window can be performed on the TME desktop:

- Launch UM Services against a particular client.
- Distribute and install UM Services on a new Windows 2000, NT, Win95, or Win98 client.
- Shutdown, reboot, or wakeup a UM Services client.

- Run a hardware or software inventory scan on Tivoli endpoints with UM Services installed.
- Monitor UM Services process status from the Tivoli Enterprise Console.

Installation

This chapter outlines UM Services Plus for Tivoli installation, which includes the following tasks:

- Check requirements.
- Using the Tivoli Desktop, install the Plus module on the desired Tivoli managed nodes.
- Launch the Plus module from the TME desktop.

These steps are the first in deploying UM Services Plus for Tivoli.

Check Requirements

Systems must meet the following pre-installation requirements:
The Plus module must be installed on the following hosts:

- Tivoli Management Region (TMR) server host
- TEC Server host (can be the same as the TMR host but usually is not)

Area Requirement

Tivoli Software AIX version 4.2x or later
HPUX version 9 or 10 or later
Solaris version 2.5 or later
Windows NT 4.0 or later
TME Framework 3.6 (Solaris, HP, AIX, NT) or later
TME 10 Software Distribution and Software Distribution Gateway 3.6 or later
TME 10 Distributed Monitoring 3.6 or later
Tivoli Enterprise Console (TEC) 3.6 or later
Tivoli Inventory and Inventory Gateway 3.6 or later
Tivoli Management Agent (endpoint)
UM Services Software

Disk Space The Plus module requires the following disk space:

Binaries 1716 KB (TMR server)
Binaries 1528 KB (client)
Message Catalogs 113 KB including Link Libraries 30KB

(This only pertains to an initial Plus module installation. If other plus modules exist, these link libraries are shared among Plus modules.)

Privileges

The installer must have a *fully qualified* Tivoli administrator name (name@domain). The **install_product**, **senior** , **super**, and **admin** roles for the **TME** context are required to install the module.

Selecting a Source

The Plus module can be installed directly from CD-ROM or from a staging area.

Installing from CD-ROM

To install the Plus module directly from CD-ROM:

1. Mount the Netfinity Director with UM Services CD-ROM in a drive that is accessible from the host that is running the installation.
2. Use the mount path when selecting media in the Install Product dialog.

Installing from a Staging Area

It is common practice to set up source staging areas on the TMR server. To set up a staging area:

1. Mount the installation CD-ROM on a drive that is accessible from the TMR server.
2. Create a directory for the files.
3. Copy the contents of the CD-ROM to the directory.
4. Use the directory path when selecting media in the Install Product dialog.

Installing the Plus Module on All Managed Nodes

The Plus module can be installed on all desired managed nodes at the same time. It must be installed on the TMR server and the TEC server. Use the following steps to install the Plus module from the TME desktop:

1. **Back up the Tivoli database**. If a problem is encountered during Plus module installation, the database may have to be restored. *Do not proceed without backing up the database!*

2. **Start the Install**: From the **Desktop** menu, choose **Install**, and from the submenu, choose **Install Product.**
   The **Install Product** window appears.
   If the **UM Services Plus for Tivoli** module is listed in the Select **Product to Install** list in the **Install Product** window, *skip to Step 4*. If it is not listed, proceed to Step 3.

3. **Locate the Installation Media:**
   1. Press **Select Media...** to display the **File Browser** window.
   2. Either type in or browse to the path containing the media:

Typing the Path

   a. Enter the path in the **Path Name** field
   b. Press **Set Path**
   c. Press **Set Media & Close**

   The **Install Product** window returns, showing a list of products available for installation.

Browsing to the Path

   a. From the **Hosts** list, choose the host on which the install media is mounted
   b. From the **Directories** list, choose the directory that contains the install media
   c. Press **Set Media & Close**

   The **Install Product** window returns, showing a list of products available for installation.

4. **Select the Product to Install**:
   Select the Plus Module Support (Link binaries) – 3.1.j from the **Select Product to Install** list.

5. **Specify Where to Install**:
   To specify the managed nodes on which the module will be installed, click the left and right arrow keys to move machine names between the **Clients to Install On** list and the **Available Clients** list. Move the TMR server, the TEC server, and any other desired managed nodes to the **Clients to Install On** list.

6. **Start the Install**:
   Click **Install & Close** to install the supporting libraries and close the **Install Product** window.

7. **Select the Product to Install**:
   Select the UM Services Plus for Tivoli module from the **Select Product to Install** list.

8. **Specify Where to Install**:
   To specify the managed nodes on which the module will be installed, click the left and right arrow keys to move machine names between the **Clients to Install On** list and the **Available Clients** list. Move the TMR server, the TEC server and any other desired managed nodes. They should be the same systems that the link libraries were installed on.

9. **Start the Install**:
   Click **Install & Close** to install the module and close the **Install Product** window.

Launching the Plus Module Desktop

To view the UM Services Plus desktop, do the following:

1. Start Tivoli. The **TME Desktop** appears.
2. Double-click the **TivoliPlus** icon. The **TivoliPlus** window appears.
3. Double-click the **UM Services Plus for Tivoli** icon. The **UM Services Plus for Tivoli** window appears.

Populating the Profile Managers

For maximum ease of use with the Plus module, check the profile managers before proceeding. A profile manager should contain a list of hosts (and/or other profiles) to be used as targets for profiles. The UM Services Plus Module provides the **Subscribers of UM Services** profile manager and the **UM Services Inventory** profile manager. Both profile managers are dataless, which means that endpoints may subscribe to them but other profile managers may not. If the **Subscribers of UM Services** profiler manager does not display with a 'dataless' icon, please apply 3.6.1-TMF-0031 and 3.6.1-TMF-0051. Then take the following steps:

1. From the Desktop console, open the Navigator window.
2. Under the Navigator window, check the Profile Manager box.
3. In the Resources window, double click **Subscribers of UM Services** or highlight **Subscribers of UM Services** and press the Go To button.
4. The Profile Manager window will appear. Select the Edit menu, then select the Profile Manager menu item.
5. In the Edit Profile Manager window, ensure that the Dataless Endpoint Mode box is unchecked.
6. Press the Change & Close button.
7. From the Profile Manager window, re-select the Edit menu and the Profile Manager menu item.
8. In the Edit Profile Manager window, make sure the Dataless Endpoint Mode box is checked.
9. Select Change & Close.
10. In order for the changes to take effect, you have to close all windows and go back to the Tivoli Desktop window.
11. The next time you open the **UM Services Plus for Tivoli** window, the icon will display the correct image.

The UM Services Inventory profile manager must be hand-populated. The **Subscribers of UM Services** profile manager can be hand-populated, or it can be populated by using an inventory query. The **Subscribers of UM Services** profile manager should be populated as follows:

- UM Services Managed Nodes: includes the hostname of each host that runs UM Services.
- UM Services endpoints: includes the hostname of each endpoint that runs UM Services. To auto-subscribe UM Services endpoints:
    1. Right-click the **Subscribers of UM Services** profile manager and choose **Subscribers** from the pop-up menu. The **Subscribers** window appears.
    2. Press the button labeled **Query.** The **Execute a Query** window appears.
    3. Select **UM Services Inventory Queries** from the left-hand list. Select **Installed UM Services** from the right-hand list.
    4. Press the **Execute** button.
    5. The results of the query will add hosts running UM Services to the **Current Subscribers** list.
    6. Click **Set Subscriptions & Close** when done.

Note: Only systems that have been subscribed to the **UM Services Inventory** profile manager and scanned with the **UM Services PC SW Scan** inventory profile will be returned by the inventory query.

- PC Managed Nodes must be hand-populated. To change the population of a profile manager:
    1. Right-click the desired profile manager and choose **Subscribers** from the pop-up menu. The **Subscribers** window appears. (Subscribers for **UM Services** are shown below.)
    2. In the **Available to Become Subscribers** list, locate a host that should be a subscriber.
    3. Click on the host, then click on the left-arrow button to add the host to the **Current Subscribers** list.
    4. Repeat for all hosts that should make up the profile.
    5. Click **Set Subscriptions & Close** when done.

Note: If a host that should be in the **Available to Become Subscribers** list can't be found, confirm that it is a managed node (or PC managed node, in the case of clients).

Launch

This chapter outlines the launch function of the UM Services Plus for Tivoli and includes the following tasks:

- Check requirements
- Execute the launch task

Check requirements

The requirements for executing the launch task concern the make and version of the browser, the level of java runtime, the level of java swing libraries, and the level of java xml libraries. If the system you are launching *from* is a Windows NT system, as long as a supported browser is installed, i.e. Netscape 4.5 and above or Internet Explorer 4.01 and above, UM Services will handle the upgrade of the java runtime, the java swing library install, and the xml parser library install. Otherwise, these items must be upgraded or installed manually. For instance, if you are using the Plus Module from AIX, you must download and install the following components:

- Netscape 4.5 or above
- Java Runtime 1.1.7b or above (available from Sun or IBM)
- Swing library 1.1 or above (available from Sun or IBM)
- XML Parser 1.1.14 or above (available from IBM Alphaworks)

Execute the Launch Task

Once the browser requirements have been met, the launch task can be used to remotely manage any UM Services client. To execute the task, double-click on the **Launch UM Services@<local machine>** where local machine is the hostname of the system you are launching *from.* There may be several launch icons depending on how many managed nodes the Plus Module has been installed on; always choose the one that was created for the local system. When the **Launch UM Services** dialog comes up, enter the hostname of the system to be managed in the box labeled **hostname** and the UM Services http port in the box labeled **port**. The UM Services web-based interface will launch in the context of the remote system.

Note: Tasks are run in the context of the environment configured by setup_env.sh, setup_env.csh, or setup_env.cmd, *not* in the environment configured by the operating system. So, even if the CLASSPATH variable is set in the .dtprofile or .profile files, it still must be exported or set from the necessary setup_env.* file. For AIX systems, the MOZILLA_HOME variable must also be defined in both places. If these steps are not taken, the launch task WILL NOT WORK.

Inventory

This chapter demonstrates how to use UM Services Plus for Tivoli to scan and retrieve inventory information from UM Services clients. The following topics are discussed:

- Configuring the Tivoli inventory database for UM Services inventory data
- Using the UM Services Inventory Profile Manager
- UM Services inventory queries

Configuring the Tivoli Inventory database for UM Services inventory data

The UM Services Plus Module provides SQL scripts for each of the four relational databases supported by the Tivoli Inventory application: ums_db2_schema.sql, ums_ms_sql_schema.sql, ums_oracle_schema.sql, and ums_sybase_schema.sql. These scripts add database tables and views specific to UM Services inventory data to the inventory database. The first time the Plus Module is installed, the corresponding script must be copied to the RDBMS host and executed in the context of the **inventory** database user id against the **inventory** database. Once the database is configured, UM Services Plus' inventory profiles may be distributed to subscribers.

Using the UM Services Inventory Profile Manager

The UM Services Plus Module provides two InventoryProfile-type profiles in the UM Services Inventory profile manager: PC SW Scan and PC HW Scan. These profiles can be customized and distributed to Managed Nodes, PC managed nodes, or endpoints running UM Services. When

they are distributed, they trigger the Tivoli inventory scan program to run on the subscriber. To access the profiles, double-click the **UM Services Inventory** icon from the Plus Module window.

PC HW Scan

The PC HW Scan profile is configured to execute a custom script on the target machine that will use a UM Services program to generate DMI MIF files specific to the machine's hardware. To edit the script, press the PC HW Scan icon in the **Profiles** window, and select the **Customize** item from the popup menu. The **Customize Inventory Profile** window will appear. Look for the **Script** checkbox in the Execute **at Target** group. Press the **ellipsis** button next to the **Script** checkbox. The following script appears:

```
%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_HOM
E%\httpserv\guitools.jar";"%UMS_HOME%\httpserv\mswmi.jar";
"%UMS_HOME%\httpserv\xml4j2.jar"; "%UMS_HOME%\httpserv\xml4j.jar"
com.ibm.sysmgt.cim.cim2mif /TME c:\
"%UMS_HOME%\inventory\dmi2tiv.exe" @dmi.lst
```

The script is pre-configured to place the generated MIF files in the c:\ directory on the target system. To change this, scroll right to the where the drive letter and directory is listed, and change it to the desired location. Then press **Save&Close.**

The PC HW Scan profile is configured such that the MIF files umativoli.mif and umsinv.mif are generated on the target system and picked up by the scan program. The data from the MIF files is added to the proper UM Services-specific database table in the inventory database.

PC SW Scan

The PC SW Scan profile is configured to read the **useradd.mif** file provided by Tivoli for Win32 systems. This MIF file will contain entries for the software signatures of common Win32 software packages. UM Services software is detected by virtue of the *.MOF file extension.

Note: The Inventory Gateway product *must* be installed on a managed node in the TMR for inventory profiles to be distributed to systems running only the endpoint.

UM Services Inventory Queries

When the UM Services Plus Module is installed, a query library with a collection of inventory queries is added to the TMR. To see the queries, double-click on the **UM Services Inventory Queries** icon in the Plus module window. The window will appear with 23 separate queries to choose from. Note that the queries will only return data for systems that have been scanned using one of the above inventory profiles. To execute a query, select one of the query icons, right click, and select **Run Query** from the popup menu. The query will return data for *all* systems in the inventory database for which there is that particular data item. To retrieve inventory information for a *particular* system, open the UM Services Inventory profile manager, select a subscriber, right click on the subscriber's icon, and select **Execute Query** from the popup menu. The **Execute Query** will appear. Select the **UM Services Inventory Queries** entry from the list of **Query Libraries**, then select the particular query from the **Queries** list.

Software Distribution

This chapter demonstrates how to use UM Services Plus for Tivoli to distribute the UM Services software. The following topics are discussed:

- Overview of Software Distribution
- Checking Requirements
- Distributing UM Services

Overview of Software Distribution

Deploying the UM Services software is a three-stage process.

1. **Choose a source for distribution**. Whether installation takes place directly from CD-ROM or by creating a staging directory for distributing the files, the source files must be accessible from a host running the Plus module. A path to the source files must be specified when configuring a file package.
2. **Configure the file package**. Use the **Prepare for UM Services** install icon for the software to be distributed. During configuration, options are set that determine how the software is be installed (source host, source directory, destination directory).
3. **Install the file package**. Use the Install icon for the software to be distributed. Right-clicking the icon and choosing **Distribute** runs a job that installs the software and distributes it to all subscribers listed in the **Subscribers of UM Services** profile manager.

Checking Requirements

Check that these requirements are fulfilled before setting up source file directories for Tivoli software distribution:

- **Source host**: The host chosen as a source of files must meet these requirements:
  - A Tivoli managed node. The TMR server is recommended as the source host.
  - Has Tivoli Software Distribution running on it.
- **Source Path:** Absolute path of the UM Services setup.exe file on source host.
- **Destination Path**: All distribution target hosts must be Tivoli managed nodes, PC managed nodes, or endpoints. Type the absolute path for the UM Services setup.exe file or targetted systems.
- **Software Distribution Gateway**: The Software Distribution gateway product must be installed on a managed node in the TMR to distribute filepackages to systems running only the Tivoli endpoint.

Distributing UM Services

Distributing UM Services includes:

1. Configuring the InstallShield silent install script for UM Services, setup.iss.
2. Configuring the file package.
3. Installing the file package.
4. Removing the distributed file package from remote hosts.

If distributing from CD-ROM, be sure to:

- Specify the correct drive letter in the Source Directory field when the file package is configured.
- Have the CD-ROM loaded in the drive when installing the file package.

Configuring the InstallShield silent install script

To configure such things as the UM Services install options, the directory to which the UM Services product will be installed to on the targets, and the initial user id and password to UM Services, open the setup.iss file included with the UM Services install files. Note that this is not the same thing as configuring the file package. The filepackage determines the settings used during deployment, not the settings used by the UM Services install program.

Configuring the File Package

1. In the UM Services Plus for Tivoli window, double-click **Prepare for UM Services install**. The **Prepare for UM Services install** window appears:
   Specify arguments necessary to ready the software distribution process:
   - **Source Host**: Specify the host where installation media resides (CD-ROM drive or on a hard disk) and from which to copy the installation files.

- **Source Path**: Specify the drive letter and directory where the Netfinity Director setup.exe file resides on the source host (e.g., d:/Win32/Install/en if using the Netfinity Director CD). Do *not* point to ibmsetup.exe.
- **Destination Path**: Specify the directory on the distribution endpoint where the UM Services install files will be copied (e.g., C:/temp). The Netfinity Director Console, Server, and Agent files are not distributed, only UM Services.

2. Click **Set & Execute**

The files are configured and made ready for distribution. Note that the use of forward slashes, long file names in directory paths, and spaces in directory paths is supported. The afterscript for the FilePackage profile is ums_fp_after.bat. It is designed to execute from **Destination Path**\Win32\Install\en once the install files are distributed. If the filepackage will be distributed from a file server, and \Win32 will no longer be at the root of a drive letter, the afterscript should be modified accordingly. For example, if the Netfinity Director cd is copied to f:\MyApps, add the statment **cd MyApps** after the statement **cd "%CURDIR%"** and before the statement **cd Win32.**

Installing the File Package

1. Right-click the **Install UM Services** icon and choose **Subscribers** from the pop-up menu
2. Specify the subscription lists to distribute to
3. Click **Set Subscriptions & Close**
4. Right-click the **Install UM Services** icon, and choose **Distribute** from the pop-up menu to distribute files to the specified subscribers
5. By default, the FilePackage profile represented by the **Install UM Services** icon is not configured to reboot the system after install. To set this option, right-click on the **Install UM Services** icon and select **Open....** From the **File Package Properties** dialog, select **Edit->Platform-Specific Options-><OS>Options**. From the **File Package <OS> Options** dialog, press the **After Distribution** button and select the **Reboot machine** radio button.

Installation Process

For each host:

1. The file package is copied to **Destination Path** specified
2. A silent InstallShield install runs according to the parameters set in the **Setup.iss** file

Removing the distributed file package from remote hosts

For each file package configured and deployed:

1. From the TME Desktop, select the **Desktop** menu and the **Navigator...** menu option. The Navigator window appears
2. Check the F**ilePackage** checkbox
3. From the **Resources** list, select the file package that was distributed. Then press **Go To**. The **File Package Properties** window appears
4. From the **FilePackage** menu, select the **Remove From Hosts...** menu item. The **Remove File Package** window appears
5. Select the hosts from which to remove the file package from the **Available Subscribers** list, and move them to the **Remove File Package From:** list
6. Press **Remove&Close**

Distributed Monitoring

This chapter shows how UM Services Plus for Tivoli uses Tivoli Distributed Monitoring to provide resource monitoring capabilities. This chapter describes the following:

- UM Services monitors
- Distributing monitors
- Changing monitor properties
- Viewing monitor status
- Properties of the preconfigured UM Services monitors that are provided with the Plus module

UM Services monitors send TEC events as part of their response. See *Chapter 6, "TEC Events"* for more information.

UM Services Monitors

The following monitors are provided with the Plus module:

- **HTTPCheck:** monitors the availability of UM Services' HTTP server processes.
- **SNMPCheck:** monitors the availability of UM Services' SNMP subagent process.

Default Properties

By default the monitors are enabled. It is possible to disable them and to configure responses when you edit monitor properties.
Note: You should analyze the preconfigured monitor properties as a set before changing them.

Responses

The following list identifies the possible responses for monitors and indicates whether the response is on by default for UM Services monitors.

- ***Popup***: **NO**
- ***Tivoli Notice***: **NO**
- ***TEC Event***: **YES**
- ***Sentry Indicator***: **YES**
- ***Automated Actions***: **YES**

Distributing Monitors

Monitors must be distributed to make them active. The following procedure uses UM Services Monitors as an example, but is applicable to the other monitors as well.

1. **Distribute**: In the **UM Services Plus** window, right-click the **Monitors for UM Services** icon, then choose **Distribute** from the menu. The **Distribute Profiles** dialog appears.
2. Choose **Schedule** to distribute the monitors at another time. Otherwise, click **Distribute Now**.

The monitors are distributed:

• Monitors for UM Services are distributed to UM Services clients.

Note: SentryProxy must be a **Current Resource** in the policy region for distribution of monitors to machines running only the endpoint to work.

Changing Monitor Properties

The Monitors for UM Services are preconfigured for immediate use. Use the following information to customize properties.

1. Right-click on the Monitors for UM Services icon, then choose **Properties**. The **Distributed Monitoring Profile Properties** window appears.
2. Select the desired monitor, then click **Edit Monitor**. (In this case assume the **HTTPCheck** monitor was chosen.) The **Edit Sentry Monitors** window appears.
3. You can change trigger levels and responses for each monitor. Initally, only the **critical** response level has pre-configured settings. To change those settings, change the **Response level** to critical first.
4. Modify the properties as desired then click **Change and Close**. In the **Distributed Monitoring Profile Properties** window, note that a change bar has been added next to the monitor that you edited.
5. In the Profile menu, choose **Save**.
6. Distribute the monitors. (Right-click on the Monitors icon, then choose **Distribute**. In the dialog that appears, click **Distribute Now** or schedule the distribution.)

Polling Intervals

UM Services monitors are preconfigured to poll at 5-minute intervals. Polling intervals can be set for each individual monitor, as illustrated in the Edit Distributed Monitoring Profile window above.

Viewing Monitor Status

Monitor status may be viewed in any of several ways. Each monitor can be configured to use one or more ways to signal its status.

- Popups
- Tivoli Notices
- TEC Events
- Sentry Indicators

Popups

When enabled, a popup dialog appears on the administrator's screen whenever a monitor trigger is activated.

Tivoli Notices

When enabled, a notice is posted to Tivoli Notices whenever a monitor trigger is activated. To view notices:

1. On the TME Desktop, double-click **Notices**. A list of notice groups appears. Each item in the list identifies a group and the number of unread notices for the group.
2. Double-click the desired group. A message window appears. **Select**, **View**, or **Respond** to notices in this window.
3. Click **Close** when finished.

TEC Events

Some triggers have TEC events associated with them. If the sending of a TEC event is enabled for the trigger, then an event is sent to the TEC server whenever the trigger is activated.

Sentry Indicators

When Change Icon is enabled, changes in a thermometer icon on the Plus desktop indicate the severity level of a trigger whenever a trigger is activated. To use the Sentry indicators when they are enabled:

1. In the **UM Services Plus for Tivoli** window, double-click the **Indicators for UM Services Monitors** icon. A window with a sentry indicator appears.
2. Double-click on the indicator to see a log of monitor alarms. A log window appears.
3. Click **Reset** to reset the indicator. Click **Clear** to clear all entries in the log.
4. Click **Close** when finished.

Monitored Conditions

The following tables show the relationship of monitored conditions to triggered actions as the monitors are provided. Triggers and responses can be customized as required.

Summary

This is a summary list of monitored conditions:

- UM Services Monitors
  - UMS**NMP DLL Status**: monitors the load status of the umsnmp.dll process on UM Services clients.
  - **HTTP Daemon Status**: monitors the status of the UM Services http daemon on UM Services clients.

The tables on the following pages correspond to the tables of conditions and responses that appear for the monitors when you edit their properties. Monitors can have a trigger and response for each of six severity levels.

- **Severity**: Individual triggers can be configured for each severity. In the table, the severity's columns identify each level of severity for Distributed Monitoring (Sentry) and for TEC.
- **Trigger When**: Entries in this column indicate whether a trigger has been configured and what condition activates the trigger.
- **Default Action**: Entries in this column indicate what the monitor does when it is triggered. There are five possibilities: Popup dialog, Send Event to TEC, Change Indicator, Send Notice, and Automated Action.

UM Services Monitors

UMSNMP DLL Status

This monitor is enabled by default.

Severity Level		Trigger When	Default Actions
Sentry	**TEC**		
Critical	Critical	Service becomes unavailable	Send critical event UM_Services_SNMP_Subagent_Status Restart attempt
Severe	Critical	N/A	None
Warning	Warning	N/A	None
Reset	Unknown	N/A	None
Normal	N/A	N/A	None
Always	N/A	N/A	None

HTTP Daemon Status

This monitor is enabled by default.

Severity Level		Trigger When	Default Actions
Sentry	**TEC**		
Critical	Critical	Service becomes unavailable	Send UM_Services_HTTP_Server_Status Restart attempt
Severe	Critical	N/A	None
Warning	Warning	N/A	None
Reset	Unknown	N/A	None
Normal	N/A	N/A	None
Always	N/A	N/A	None

TEC Events

This chapter describes how to set up the TEC Server to receive and process events sent by the distributed monitors and the Tivoli SNMP Adapter. It describes the following:

- Setting up the TEC Server for UM Services
- Viewing UM Services events in a TEC console
- Listings of events, rules, and automatic actions

The Event Server processes events that are sent to it by distributed monitors and UM Services via SNMP traps. It processes the events according to a rule base. Depending on the event and the rule used to handle it, the server can forward the event to a Tivoli Event Console (TEC) or perform actions in response. At least one event console must be installed before the event server can be set up.

Setting up the TEC Server for UM Services

The TEC Server must be configured to use the UM Services Plus event classes and rule base before UM Services events can be monitored from the Tivoli Enterprise Console. To configure the server, do the following:

1. In the **UM Services Plus for Tivoli** window, double-click **Setup TEC Event Server for UM Services**. The **Setup_TEC_Event_Server_for_UM_Services** window appears.
2. Fill in the information:
   - **Rule Base Name**: Enter a unique rule-base name, for example **umsrb**. *Do not use "Default."*
   - **Rule Base to Clone**: Enter the name of your current rulebase. If one has not been defined, use **Default.**
   - **Rule Base Path**: Enter a directory to hold the rule-base files.
   - **Event Console**: Use the **Choose** button to select the desired Event Console in your TME. An Event Console must exist before the Event Server can be configured.
3. Click **Set & Execute**. The rule-base files will be configured. An output window appears; check it for errors.

Configuring the TEC SNMP adapter

To configure the TEC SNMP adapter to receive traps, the following files must be copied to the adapter's conf directory or appended to the existing tecad_snmp OID and CDS files.

- $BINDIR/../generic_unix/TME/PLUS/UM_Services/UMStecad_snmp.oid
- $BINDIR/../generic_unix/TME/PLUS/UM_Services/UMStecad_snmp.cds

The adapter must then be restarted for the changes to take effect.

Viewing UM Services Events

When the **Setup TEC Event Server for UM Services** task is executed, it sets up the following on the TEC server:

- An event group for UM Services events: UM_Services_Plus

The task also configures the event console selected to subscribe to the UM_Services_Plus event group. However, the Admin Role for the group must be configured by the user. All administrators are subscribed to all sources by default.

Viewing Events

To view UM Services events:

1. On the TME desktop, double-click the event console configured in the **Setup TEC Server** task. Two windows appear: **Event Groups** and **Event Sources.**
2. Click the button for the events to view. An Events window appears. (The window for the UM_Services_Plus event group is shown.) UM Services events can be viewed and managed in this window. See Tivoli documentation for more details.

Configuring Other TEC Consoles

The UM_Services_Plus event group may be assigned to other TEC consoles. Consult Tivoli documentation for information about how to assign them.

TEC Events and Rules

The Sentry monitors send events to the Tivoli Enterprise Console (TEC). The "Event Listing" section below lists all of the event classes used. In the previous chapter, the section "Monitored Conditions" lists the severity of the events. When the TEC event server receives an event, a rulebase is consulted to determine how to handle the event. The "TEC Rules and Actions Listing" section below lists the rules and actions that can be triggered by an event or combination of events. The rule base can be customized. Consult Tivoli Enterprise Console documentation for details.

TEC Events Listing

Event Class	Condition
UM_Services_SNMP_Subagent_Status	From monitor: sent when UMSNMP.DLL is not loaded into SNMP service or the SNMP service stops.
UM_Services_HTTP_Server_Status	From monitor: sent when the UM Services httpd.exe process becomes unavailable.
UMS_TemperatureCriticallyOutOfRange	From SNMP adapter: sent when the motherboard in a UM Services system exceeds its temperature specification.
UMS_VoltageCriticallyOutOfRange	From SNMP adapter: sent when the motherboard in UM Services system exceeds its voltage specification.
UMS_ChassisIntruded	From SNMP adapter: sent when a UM Services system's chassis is removed.
UMS_FanOutOfOrder	From SNMP adapter: sent when the fan in a UM Services system malfunctions.

Event Class	Condition
UMS_StorageVeryLow	From SNMP adapter: sent when the drive space of a UM Services system is less than 3% available
UMS_SMARTEvent	From SNMP adapter: sent by a SMART drive if it is going to fail.
UMS_LANLeashEvent	From SNMP adapter: sent by a UM Services client if its host system is removed from a LAN.
***Netfinity_Director_Event**	From SNMP adapter: sent from Netfinity Director management server.

* Requires Netfinity Director

Note: UM Services Plus will also filter SNMP traps from the Alert On Lan Proxy tool if it is installed in the environment. See Chapter 2 of the UM Services User Guide for more information.

TEC Rules and Actions Listing

Event Class/Rule	Event/Action
UM_Services_SNMP_Subagent_Status	If event message #2 of severity CRITICAL is received, reload UM Services SNMP subagent.
UM_Services_HTTP_Server_Status	If event message #1 of severity CRITICAL is received, re-start UM Services HTTP server.

Task Operations

In the course of day-to-day management, UM Services Plus for Tivoli can be used to perform management operations. Task operations can be performed as jobs or tasks from the task icons in the UM Services Plus for Tivoli window. The following topics are described:

- **UM Services Plus Tasks**: lists each operation and any required arguments for the task.
- **Overview of Jobs and Tasks**: describes how to run the operations as jobs or as tasks.
- **Jobs**: describes how to run an operation as a job and how to modify job options.
- **Tasks:** describes how to run an operation as a task and how to modify task options.

UM Services Plus Tasks

This is the list of management operations that can be performed from the UM Services Plus desktop and the arguments that each operation requires. If an operation requires that argument values be supplied, it pops up a dialog before executing. Otherwise, it simply executes, as described in later sections.

Reboot Client

This task performs a reboot on UM Services clients subscribed to the Subscribers of UM Services profile manager. To run the task:

1. Select the **Reboot UM Services** icon from the Plus Module window.
2. Right-click and select **Modify Job.** Ensure that a Task Endpoint other than the local system is selected so that the local system is not rebooted. Select **Change&Close.**
3. Right-click and select **Run Job.**

Upon execution, a task output window appears.

Shutdown Client

This task performs a shutdown on UM Services clients subscribed to the Subscribers of UM Services profile manager. To run the task:

1. Select the **Shutdown UM Services** icon from the Plus Module window.
2. Right-click and select **Modify Job.** Ensure that a Task Endpoint other than the local system is selected so that the local system is not shut down. Select **Change&Close.**
3. Right-click and select **Run Job.**

Upon execution, a task output window appears.

Wakeup Client

This task wakes up an individual UM Services system or a group of UM Services systems. This task works only on systems with Wake-on-LAN NICs installed. Note: Because the task relies on MAC Address information, at least one inventory scan must have been performed on a system prior to waking it up since this data is stored in the Inventory database. Also, on AIX 4.x systems, a limitation of the Java Virtual machine requires that a system be ping'ed at least one time before attempting to wake it up. To run the task:

1. Select the **Wakeup UM Services** icon.
2. Right-click and select **Run Job.**
3. Enter a particular node to wake up or a group of nodes via a profile manager to wake up.
4. Choose **Set&Execute.**

Upon execution, a task output window appears.

Overview of Jobs and Tasks

Management operations are represented as *task icons* in the **UM Services Plus for Tivoli** window. From a task icon, operations can run as *jobs* or *tasks.* A *job* is intended to be run repeatedly as a routine operation or as a means of controlling an entire service. It is typically executed on multiple subscribers. A *task* is intended to be run as a special one-time operation on one or more selected hosts or task endpoints.

- **Job**: To run an operation as a job, double-click the task icon, or right click the task icon and choose **Run Job** from the menu. If options must be supplied, a dialog appears to prompt for them. To specify how the job will be executed, right-click the task icon and choose **Modify Jobs** from the menu before running the job.
- **Task**: To run an operation as a task, right-click the task icon and choose **Run on Selected Hosts** from the menu. A dialog appears that asks how the task is to be run and what hosts to run it on. When the task executes, another dialog will ask for options, if needed.

Jobs

When an operation is run as a job, it usually is run on a set of default subscribers and it normally produces output in a window on the desktop.

Modifying Job Configuration

To modify a job, follow these steps *before* running the job:

1. Right-click the desired task icon, then choose **Modify Job** from the menu. The **Edit Job** window appears.
2. Change the parameters as desired then click **Change & Close**. The job parameters will be effective each time the job is run.

The example shown is for the **Shutdown UM Services** operation. The profile for UM Services Servers is the target for execution. Note that the default output is sent to a window, from which it can be saved.

Running a Job

To run a job:

1. Right-click the desired task icon and choose **Run Job** from the menu. If job options are required, a prompt will appear.
2. Set the options as desired, then click **Set & Execute**. An output window appears.
3. Click **Save to File** to save the output.
4. Click **Close** when finished.

Creating Scheduled Jobs

Sets of operations can be scheduled to run at a particular time. Consult Tivoli software documentation for details.

Tasks

To run an operation as a task:

1. Right-click the task icon, then choose **Run on selected subscribers**. The **Execute Task** window appears.
2. Select the desired **Task Options** , then click **Execute & Dismiss**. Note that for a task there are no default subscribers, and that no output is specified by default.
3. If job options are required, a prompt will appear.
4. Set the options as desired, then click **Set & Execute**. An output window appears. Save the output if desired.
5. Click **Save to File** to save the output, and **Close** when finished.

Troubleshooting

This chapter describes how to analyze problems that may be encountered in running UM Services Plus for Tivoli. Try the procedures recommended here before contacting technical support.

Analyzing Problems

It is useful to keep in mind that distributed-systems services are interdependent. In the following depiction, each service is shown as a layer. Each layer depends on the health and well being of the layer underneath it.

UM Services Plus
UM Services clients
Tivoli Servers
TCP/IP Network Servers
Host

The most common reason for an interruption of service is a server failure or server hang, both of which can be cleared by stopping and restarting the server. Another common cause is a host problem that can be cleared by rebooting the host. When diagnosing a problem with UM Services Plus for Tivoli, first confirm that layers of system services are operating correctly, in particular the Tivoli servers.

Answers to Common Questions

The following list contains common questions and answers.

No Icons on Plus Desktop

The UM Services Plus module is inconsistently or incorrectly installed. Check that the following conditions are true:

- The Plus module is installed on the TMR server.
- The administrator does not have a fully qualified Tivoli login (for example, **root** instead of **root@***domain*).
- Tivoli has run out of memory (encountered most often on hosts with the minimum required memory to run).
- $DBDIR is full. Other symptoms will be apparent if this condition holds.

Blank Output from Job or Task

Check that the job or task had both **Execution Targets** and **Output Destinations** specified.
For jobs, right-click on the task icon and choose **Modify Jobs** then inspect the **Edit Job** window. For tasks, right-click on the task icon and choose **Run** on selected hosts then inspect the **Execute Task** window.

No systems in the Subscribers of UM Services Profile Manager

Systems must first have their software inventory scanned in order to determine if UM Services is installed. Once that is determined, select the 'Inventory Query' item in the context menu of the Subscribers of UM Services icon. Then

Unable to add endpoints as subscribers to Install UM Services profile manager

Install UM Services is a non-dataless profile manager. In order to distribute UM Services to endpoints, add them as subscribers to a dataless profile manager such as 'Subscribers of UM Services', and then add the profile manager as a subscriber to Install UM Services.

Unable to launch web browser in AIX

Make sure you've downloaded the requisite java, swing, and xml jar files and added them to your CLASSPATH. Also make sure MOZILLA_HOME is set in setup_env.sh.

Unable to run WakeOnLan against a system

Make sure the system has been scanned for its MAC Address using the UM Services PC HW Scan profile in the UM Services Inventory profile manager.

Unable to distribute UM Services monitors to a Win9x endpoint

Tivoli only supports Distributed Monitoring to Windows NT endpoints, and Windows 2000 endpoints as of version 3.6.2 of Distributed Monitoring.

Not getting any UM Services events into the TEC

Make sure you've run the Setup TEC Event Server for UM Services task.

When running Reboot or Shutdown task, the local system is rebooted or shutdown

Select 'Modify job' from the context menu of these tasks and make sure the 'Task Endpoint' is not the local system.

Glossary

This chapter defines special terminology used in the manual.

Term	Definition
UM Services	A Windows 2000, WinNT, Win95, or Win98 machine that runs the services that manage and display data for IBM hardware and processes.
class	See **event class**.
Distributed Monitoring	A Tivoli product that provides active monitoring of system and application resources.
event	A message carrying information about the state of equipment, systems, or applications.
event class	In Tivoli TEC, used to define an event. An event class is defined for each type of event. Event classes are hierarchical; classes can be defined as members of a higher-order superclass.
event console	In Tivoli, a user interface provided for viewing and managing events. Users select the events to see by **event group** and **event source**.
event filter	A filter on the TEC server that passes events based on the contents of one or more slots in the event. Event filters are used to define **event groups** .
event group	A configured logical area of responsibility defined on the Tivoli TEC server. An event group i s made up of one or more **event filters**. The event group is used in assigning sets of events to TEC **event consoles**. The event group is constructed based on logical areas of responsibility, such as geography or type of resource managed (network, database, servers, etc.). Compare to **event source**.
event server	In Tivoli, the central repository for all events in the Tivoli Managed Region (TMR). There can be only one event server in the TMR.
event source	In Tivoli, a configured logical area on the Tivoli TEC server that is defined by one or more **event filters**. The event source is used in assigning sets of events to TEC event consoles. The event source is generally constructed based on the source of events; compare to **event group**.
job	A means of running an administrative action on a set of machines. Jobs are run on **subscribers** , which can be one or more profiles and/or hosts.
managed node	Any system on which the Tivoli TME 10 Framework is installed.

monitor	In Tivoli **Distributed Monitoring** , a program that periodically checks the condition of a resource: for example, whether a particular daemon is running or how much CPU it is consuming.
monitor collection	In Tivoli **Distributed Monitoring** , an icon on the desktop that represents a set of monitors. Monitors are distributed and their properties are edited through the monitor collection.
package	In UM Services, a program that is run on clients. Action packages are used to set reconfigure desktop settings and run recurring operations (for example, virus scans). Configuration packages are used to perform configuration tasks for a client, such as configuring several printers.Software Installation packages are used in install and configure operating systems on client PCs.
profile manager	In Plus modules, a collection of subscribers that can be used in the subscription list of a **task**.
rule	On the **TEC server**, a rule determines a course of action to take when one or more events are received that meet criteria specified in the rule.
Software Distribution	A Tivoli product that provides facilities for configuring, distributing, and installing software in a heterogeneous distributed system.
task	(1) In Tivoli, an operation initiated from the TME desktop or the Plus desktop. Icons represent tasks. (2) Operations run by using Run on selected hosts in the icon menu of any icon on the desktop.
Tivoli Enterprise Console (TEC)	A Tivoli product that provides centralized processing of events.
Tivoli Managed Region (TMR)	A set of systems running Tivoli TME 10 that share the same Tivoli server (TMR server, or oserv).