IBM Tivoli Monitoring
Version 6.3 Fix Pack 2

IBM i OS Agent Installation and Configuration Guide

SC27-5653-00

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Note
Before using this information and the product it supports, read the information in "Notices" on page 35.

This edition applies to version 6, release 3, fix pack 2 of IBM Tivoli Monitoring (product number 5724-C04) and to all subsequent releases and modifications until otherwise indicated in new editions.

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Chapter 1. Overview of the agent

The Monitoring Agent for IBM i OS provides you with the capability to monitor and perform basic actions on IBM i operating systems. IBM Tivoli Monitoring is the base software for the Monitoring Agent for IBM i OS.

IBM Tivoli Monitoring overview

IBM Tivoli Monitoring provides a way to monitor the availability and performance of all the systems in your enterprise from one or several designated workstations. It also provides useful historical data that you can use to track trends and to troubleshoot system problems.

You can use IBM Tivoli Monitoring to achieve the following tasks:

- Monitor for alerts on the systems that you are managing by using predefined situations or custom situations.
- Establish your own performance thresholds.
- Trace the causes leading to an alert.
- Gather comprehensive data about system conditions.
- Use policies to perform actions, schedule work, and automate manual tasks.

The Tivoli Enterprise Portal is the interface for IBM Tivoli Monitoring products. You can use the consolidated view of your environment as seen in the Tivoli Enterprise Portal to monitor and resolve performance issues throughout the enterprise.

Features of the Monitoring Agent for IBM i OS

The Monitoring Agent for IBM i OS offers a central point of management for IBM i OS systems. It provides a comprehensive means for gathering exactly the information you need to detect problems early and prevent them. Information is standardized across all distributed systems so you can monitor and manage hundreds of servers from a single workstation.

Use the Monitoring Agent for IBM i OS to easily collect and analyze IBM i OS-specific information, such as:

- Operating system and CPU performance
- Installed License Program Products and Program Temporary Fixes
- IBM i OS disk information and performance analysis
- Network performance and information, such as topology and status
- Virtual and physical memory statistics
- Disk and database capacity
- Paging information and swap statistics
- Historical data collection for trend analysis and capacity planning

Table 1 on page 2 lists the tasks that you can accomplish by using the Monitoring Agent for IBM i OS alone, in a network, and in combination with the Tivoli Enterprise Portal.

Table 1. Examples of Monitoring Agent for IBM i OS Tasks

Task	Monitoring Agent for IBM i OS	User Action	Tivoli Enterprise Portal
Detect library growth	✓		
Detect auxiliary storage pool growth	✓		
Detect security violations	✓		
Detect bad response time	✓		
Send alerts when specified system conditions are detected	✓		
Delete unused files	✓	✓	
Prioritize local jobs	✓	✓	
Limit local use to users temporarily		✓	
Control local job flow	✓	✓	
Take backup on a scheduled basis		✓	
Provide real-time graphical display of resource utilization problems			✓
Distribute situations and policies			✓
View and edit a situation graphically			✓
Specify user action to be taken			✓
Start a situation from the central site	✓		✓
Manage remote jobs	✓	✓	
Check the Monitoring Agent for IBM i OS log	✓		
Automate remote configuration changes	✓	✓	
Verify remote fix levels	✓		✓
Centralize monitoring of network conditions	✓		

The Monitoring Agent for IBM i OS provides the following benefits:

- Simplifies application and system management by managing applications, platforms, and resources across your system.
- Increases profits by providing you with real-time access to reliable, up-to-the-minute data that allows you to make faster, better informed operating decisions.
- Enhances system performance because you can integrate, monitor, and manage your environment, networks, console, and mission-critical applications. The Monitoring Agent for IBM i OS alerts the Tivoli Enterprise Portal when conditions in your environment meet threshold-based conditions. These alerts

notify your system administrator to limit and control system traffic. You can view data that is gathered in reports and charts, informing you of the status of managed resources.

- Enhances efficiency by monitoring diverse platforms and networks. Depending on your Tivoli Enterprise Portal configuration, you can collect and monitor data across platforms. The Monitoring Agent for IBM i OS gathers and filters status information at the managed resource rather than at the Hub, eliminating unnecessary data transmission and sending only data that is relevant to changes in status conditions. The Monitoring Agent for IBM i OS helps you monitor and gather consistent, accurate, and timely information that you need to effectively perform your job.

New in this release

For version 6.3 Fix Pack 2 of the monitoring agent, enhancements include:

- The Tivoli Common Reporting data model exposes the Managed System List. You can use the Managed System List in combination with, or as an alternative to, the Managed System Name. This capability is available for custom reporting only and the specified metrics are aggregated using the default aggregation function.
- Monitoring support for data queues, including the current number of messages and capacity of each data queue. A new attribute group, IBM i Data Queue, and new workspace, Data Queues, provide this capability.

For version 6.3 of the monitoring agent, enhancements include:

- The Tivoli Management Services DLA discovers resources and relationships and creates a Discovery Library Book file. The Book follows the Discovery Library IdML schema version 2.9.2 and is used to populate the Configuration Management Database (CMDB) and Tivoli Business System Management products. The Tivoli Management Services DLA discovers IBM i OS resources. For all IBM i OS systems that are active and online at the Tivoli Enterprise Portal Server, information is included in the discovery book for those resources.
- New attributes, Current Unprotected Storage Percent, System ASP Size, and Total AUX Storage, added to the System Status attribute group.
- New attribute, Temporary Storage Used, added to the Job attribute group.
- New attribute, Type, added to the Miscellaneous attributes group.
- New attribute, Feature, added to the Licensed Program Product attributes group.
- The System Status view of the System Status i5, 2 workspace displays data for the new attributes, Current Unprotected Storage Percent, System ASP Size, and Total AUX Storage. For agents before ITM V6.3, the data for these fields defaults to 0.
- The System Status view of the Job Resource Details, 2 workspace displays data for the new attribute, Temporary Storage Used. For agents before ITM V6.3, the data for these fields defaults to 0.
- Support for Tivoli Common Reporting feature.
- The Summarization and Pruning agent automatically creates and maintains the shared dimensions tables. For instructions to enable this feature, see "Configuring the Summarization and Pruning agent to maintain the dimension tables" in the *IBM Tivoli Monitoring Administrator's Guide*. To enhance this feature for the OS Agents Reports package, the installer now prompts you to provide JDBC connection details and credentials for the TDW database. This RegisterPackage script execution step inserts data into the WAREHOUSETCRCONTROL table. After this step, the MANAGEDSYSTEM table and the TIME_DIMENSION table are kept up to date automatically by the Summarization and Pruning agent. However, if you opt not to use this feature and prefer, instead, to manually maintain the dimensions tables, skip this step.

for instructions to perform any required manual steps, see "Manually creating and maintaining the dimension tables" in the *IBM Tivoli Monitoring Administrator's Guide*.

- The agent provides ComputerSystem and IPAddress resources for the Open Services for Lifecycle Collaboration Performance Monitoring (OSLC-PM) service provider. The service provider registers monitoring resources with the Registry Services. Registry Services is a Jazz for Service Management integration service that provides a shared data repository for products in an integrated service management environment.
- The IBM Tivoli Monitoring Infrastructure Management Dashboards for Servers is a web-based application that runs in the Dashboard Application Services Hub. The server dashboards give the overall status of the service areas in your managed network. Use the server dashboards to assess the event and system status of your managed network that is filtered by your area of responsibility. The information ranges from a high-level overview of all managed system groups and the situation events associated with them, to more detailed dashboards with key performance information about the selected group, managed system, or situation event.

Components of the monitoring agent

After you install and set up the Monitoring Agent for IBM i OS (product code ka4 or a4), you have an environment with a client, server, and monitoring agent implementation for IBM Tivoli Monitoring.

This IBM Tivoli Monitoring environment contains the following components:

- Tivoli Enterprise Portal client with a user interface based on Java for viewing and monitoring your enterprise.
- Tivoli Enterprise Portal Server that is placed between the client and the Tivoli Enterprise Monitoring Server and enables retrieval, manipulation, and analysis of data from the monitoring agents.
- Tivoli Enterprise Monitoring Server, which acts as a collection and control point for alerts that are received from the monitoring agents, and collects their performance and availability data.
- Monitoring agent, Monitoring Agent for IBM i OS, which collects and distributes data to a Tivoli Enterprise Monitoring Server.
- Operating system agents and application agents that are installed on the systems or subsystems you want to monitor. These agents collect and distribute data to the Tivoli Enterprise Monitoring Server.
- Tivoli Data Warehouse for storing historical data that is collected from agents in your environment. The data warehouse is on a DB2®, Oracle, or Microsoft SQL database. To collect information to store in this database, you must install the Warehouse Proxy agent. To aggregate and prune the data, install the Warehouse Summarization and Pruning agent.
- Tivoli Enterprise Console event synchronization component for synchronizing the status of situation events that are forwarded to the event server. When the status of an event is updated because of IBM® Tivoli Enterprise Console® rules or operator actions, the update is sent to the monitoring server, and the updated status is reflected in both the Situation Event Console and the Tivoli Enterprise Console event viewer. For more information, see *IBM Tivoli Monitoring Installation and Setup Guide*.

User interface options

Installation of the base IBM Tivoli Monitoring software and other integrated applications provides a variety of interfaces that you can use to work with your resources and data.

The following interfaces are available:

Tivoli Enterprise Portal browser client interface
The browser interface is automatically installed with Tivoli Enterprise Portal. To start Tivoli Enterprise Portal in your Internet browser, enter the URL for a specific Tivoli Enterprise Portal browser client that is installed on your web server.

Tivoli Enterprise Portal desktop client interface
The desktop interface is a graphical user interface (GUI) based on Java on a Windows workstation.

IBM i non-programmable terminal interface
The non-programmable terminal interface for the Monitoring Agent for IBM i OS provides commands, menus, and helps to start, stop, and configure the agent.

IBM Tivoli Enterprise Console
Event management application

Manage Tivoli Enterprise Monitoring Services window
The window for the Manage Tivoli Enterprise Monitoring Services utility is used for configuring the monitoring services and starting Tivoli® services that are not already designated to start automatically.

Chapter 2. Agent installation and configuration

Agent installation and configuration requires the use of the *IBM Tivoli Monitoring Installation and Setup Guide* and agent-specific installation and configuration information.

To install and configure the monitoring agent, use the "Installing monitoring agents" procedures in the *IBM Tivoli Monitoring Installation and Setup Guide*.

If you are installing silently by using a response file, see "Performing a silent installation of IBM Tivoli Monitoring" in the *IBM Tivoli Monitoring Installation and Setup Guide*.

In addition to the installation and configuration information in the *IBM Tivoli Monitoring Installation and Setup Guide*, use this agent-specific installation and configuration information to install the monitoring agent.

Requirements for the monitoring agent

Before installing this monitoring agent, review its specific requirements.

In addition to the requirements described in the *IBM Tivoli Monitoring Installation and Setup Guide*, the Monitoring Agent for IBM i OS requires the environment described in Table 2.

Table 2. System requirements

Operating system	**IBM i OS**
Operating system versions	• IBM i 5.4 • IBM i 6.1 • IBM i 7.1
Disk space	• 100 MB disk space for the monitoring agent • Historical data space varies, depending on the tables collected. Refer to general installation guidelines for disk space requirements in the *IBM Tivoli Monitoring Installation and Setup Guide* and "Disk capacity planning for historical data" in the *IBM Tivoli Monitoring IBM i OS Agent Reference*.
Other requirements	• IBM Tivoli Monitoring OS agents require that the hub monitoring server and portal server be at the same version or at a later version relative to the OS agent version. • TCP/IP Communication Utilities • IBM i Option 12, Host Servers, and Option 30, QShell must be installed

Note: For the most current information about the operating systems that are supported, see the following URL: http://publib.boulder.ibm.com/infocenter/prodguid/v1r0/clarity/index.html.

When you get to that site, click on the relevant link in the **Operating system reports** section.

Note that the IOA Cache Battery function requires specific IBM i PTFs to be installed. Table 3 lists the PTFs required for each release.

Table 3. PTFs required for each IBM i release

IBM i release	PTFs
V5R4M0	5722SS1 SI41535, 5722999 MF50979
V5R4M5	5722SS1 SI41535, 5722999 MF51609
V6R1M0	5761SS1 SI41679, 5761999 MF51621
V6R1M1	5761SS1 SI41679, 5761999 MF51622
V7R1M0	5770SS1 SI41680, 5770999 MF51664

Running as a non-Administrator user

The Monitoring Agent for IBM i OS jobs run under the QAUTOMON user profile that is created during installation. The QAUTOMON profile is created as a system operator class profile (*SYSOPR) and does not have all object authority (*ALLOBJ). So the agent does not run with UNIX 'root' or Windows 'Administrator' style authorities. For the special authorities for the QAUTOMON profile and the object authorities it is given during installation, see “Object access authority” in the *IBM Tivoli Monitoring IBM i OS Agent Reference*. This user profile can be configured using the IBM i OS Change User Profile (CHGUSRPRF) command.

Preparing for installation

Before installing the Monitoring Agent for IBM i OS, complete the following procedures if applicable:

- During installation, you are required to know whether or not the primary language of your iSeries® system is the English language. To determine this, complete the procedure described in “Determining the primary language of your iSeries system.”
- Verify that your TCP/IP network services are configured to return the fully qualified host name of the computer where you will install the monitoring agent as described in “Verifying the TCP/IP configuration” on page 9.
- If you have a previous version of a Candle or IBM Tivoli Monitoring v6.1 monitoring agent installed, delete it as described in “Deleting previous versions of the monitoring agent” on page 10.

Determining the primary language of your iSeries system

Objective

To determine the primary language of your iSeries system.

Background information

During the installation process, you are required to know whether the primary language of your iSeries system is the English language (language ID 2924). The installation procedure includes instructions for systems with and without the primary language set to the English language.

Required authorization role

QSECOFR

Before you begin

Not applicable

When you finish

Complete the appropriate procedures that are described in "Preparing for installation" on page 8 and then install the Monitoring Agent for IBM i OS as described in "Installing the monitoring agent" on page 11.

Procedure

1. From an IBM i OS command line, enter the following command:
   ```
   GO LICPGM
   ```
2. Enter **20** (Display installed secondary languages).
3. Note the primary language and description that is displayed in the upper left corner of the window. For an English language system, the primary language is 2924, and the description is English.

Verifying the TCP/IP configuration

Objective

To ensure that your TCP/IP network services are configured to return the fully qualified host name (for example, myhost.ibm.com).

Background information

The proper TCP/IP configuration is necessary to minimize the risk of inconsistent values being returned for the host name.

Required authorization role

*IOSYSCFG

Before you begin

Not applicable

When you finish

Complete the appropriate procedures that are described in "Preparing for installation" on page 8 and then install the Monitoring Agent for IBM i OS as described in "Installing the monitoring agent" on page 11.

Procedure

1. From an IBM i OS command line, enter the following command:
   ```
   CFGTCP
   ```

   Select **Work with TCP/IP host tables entries**.

2. Confirm that the first entry in the Host Name column is the fully qualified host name that is associated with the IP address of the IBM i OS where you plan to install the monitoring agent. If it is not, change the entry to the fully qualified host name.
3. Return to the Configure TCP/IP menu and select **Change TCP/IP domain information**.
4. Confirm that a host name and domain name are provided and that they match the entry you just confirmed in the TCP/IP Host Table.
5. Confirm that the first entry for **Host name search priority** is *LOCAL.

Deleting previous versions of the monitoring agent

Objective

To delete a previous version of a Candle or IBM Tivoli Monitoring v6.1 monitoring agent, if one is installed.

Background information

You must delete the previous Candle monitoring agent if one is installed before you can install the Monitoring Agent for IBM i OS.

Required authorization role

QSECOFR or a user with *ALLOBJ special authority

Before you begin

Not applicable.

When you finish

Complete the appropriate procedures that are described in "Preparing for installation" on page 8 and then install the Monitoring Agent for IBM i OS as described in "Installing the monitoring agent" on page 11.

Procedure

1. Determine if licensed program 0KA4430, 0KA4440, or 0KA4610 is installed by entering the following command:

   ```
   GO LICPGM
   ```

2. Select **10 Display installed licensed programs**. If licensed program 0KA4430, 0KA4440, or 0KA4610 is installed, continue to the next step. If licensed program 0KA4430, 0KA4440, or 0KA4610 is not installed, no further action is necessary.
3. Enter the following commands to create a save file and save the existing monitoring agent:

   ```
   CRTLIB CCCINST
   CRTSAVF CCCINST/PRE610KA4
   SAVLICPGM LICPGM(0KA4version_number) DEV(*SAVF)
      SAVF (CCCINST/PRE610KA4)
   ```

   where *version_number* is either 430, 440, or 610. You only need to enter the CRTLIB command if the library CCCINST does not exist.
4. Enter the following command to delete the licensed program:

   ```
   DLTLICPGM 0KA4version_number
   ```

   where *version_number* is either 430, 440, or 610.

Installing the monitoring agent

Objective

To install the Monitoring Agent for IBM i OS.

Background information

This procedure uses the Restore Licensed Program to complete installation of the Monitoring Agent for IBM i OS.

You can install the Monitoring Agent for IBM i OS from a PC or from an iSeries computer, whichever method is more convenient at your site. This procedure includes instructions for both methods.

Required authorization role

Sign on as QSECOFR or with a profile with an equivalent special authority (SPCAUT):

- *ALLOBJ
- *AUDIT
- *IOSYSCFG
- *JOBCTL
- *SAVSYS
- *SECADM
- *SERVICE
- *SPLCTL

Before you begin

Before beginning this procedure, install IBM Tivoli Monitoring and the Tivoli Enterprise Portal as described in the *IBM Tivoli Monitoring Installation and Setup Guide* and complete the procedures in "Preparing for installation" on page 8 if necessary.

When you finish

Configure the Monitoring Agent for IBM i OS as described in "Configuring the monitoring agent" on page 14.

Procedure

1. From an IBM i OS command line, ensure that the QALWOBJRST system value is set to *ALL. To do this, follow these steps:
   a. Enter the following command:
      ```
      WRKSYSVAL QALWOBJRST
      ```
   b. Select **5** (Display) and verify that the value is set to *ALL.
   c. Press **Enter** to continue.
   d. If the value of QALWOBJRST is set to *ALL, go to step 3 on page 12. If the value of QALWOBJRST is not set to *ALL, make note of the values and go to step 2.
2. If the value of QALWOBJRST is *not* set to *ALL, follow these steps:
   a. On the Work with System Values window, enter **2** to change the values.

b. On the Change System Value window, change the existing values to *ALL and press **Enter**.
c. Press **F3**.

3. From an IBM i OS command line, enter the following command to create an IBM i OS CCCINST library for the Monitoring Agent for IBM i OS installation if this library does not already exist:
   ```
   CRTLIB LIB(CCCINST)
   ```
4. Enter the following command to create a save file in the CCCINST library for the Monitoring Agent for IBM i OS:
   ```
   CRTSAVF CCCINST/A4520CMA TEXT('ITM 62 IBM i OS')
   ```

   Note: When pasting this command to an IBM i OS session, the single quote (') characters that enclose the text string might be missing. If this happens, manually add the single quote (') characters for the command to work.
5. Transfer the software for the Monitoring Agent for IBM i OS to the target IBM i OS. Do one of the following:
   - **From a PC, follow these steps:**
     a. Insert the IBM Tivoli Monitoring product CD into the PC CD-ROM drive.
     b. From a DOS command prompt, enter the following command to start an FTP session:
        ```
        ftp computer_name
        ```
        where *computer_name* is the name of the target IBM i OS.
     c. Enter the following command to change to the file type to binary:
        ```
        binary
        ```
     d. Enter the following command to transfer the software for the monitoring agent:
        ```
        put cdrom_drive_letter:\OS400\TMAITM6\A4520CMA.SAV
        CCCINST/A4520CMA (replace
        ```
     e. Enter the following command to end the FTP session:
        ```
        bye
        ```
   - **From an IBM i OS system, follow these steps:**
     a. Insert the IBM Tivoli Monitoring product CD into the CD-ROM drive.
     b. Enter the following command to create a work folder:
        ```
        WRKFLR
        ```
     c. Select **1** (Create Folder) and specify the following name for the folder:
        ```
        A4FLR
        ```
     d. Enter the following command:
        ```
        WRKLNK QOPT
        ```
        The Work with Object Links window displays the qopt object link.
     e. Select **5** (Next Level) at the qopt object link to select the next object link, the volume ID of the CD-ROM. Make note of this volume ID for use in the remainder of this procedure.
     f. Continue to select **5** for each link level until the /QOPT/*volume_id*/OS400/TMAITM6 path is displayed, where *volume_id* is the volume ID of the CD-ROM drive from step 5e.
     g. Look for the A4520CMA.SAV file and enter the following command to copy this save file to the QDLS directory:
        ```
        CPY OBJ('/QOPT/volume_id/OS400/TMAITM6/A4520CMA.SAV')
        TODIR('/QDLS/A4FLR')
        ```

where *volume_id* is the volume ID of the CD-ROM drive from step 5e on page 12.

h. Enter the following command to start an FTP session:

```
ftp computer_name
```

where *computer_name* is the name of the target IBM i OS system.

i. Enter the following command to change to the file type to binary:

```
binary
```

j. Enter the following command:

```
NAMEFMT 1
```

k. Enter the following command to transfer the software for the monitoring agent:

```
put /QDLS/A4FLR/A4520CMA.SAV /QSYS.LIB/CCCINST.LIB/A4520CMA.SAVF
```

l. Enter **F3** and select **1** to end the FTP session.

6. From an IBM i OS command line, install the software for the Monitoring Agent for IBM i OS. Do one of the following:
   - If you are installing the monitoring agent on a system that is set to the English language (language ID 2924), enter the following command:

     ```
     RSTLICPGM LICPGM(5724C04) DEV(*SAVF) SAVF(CCCINST/A4520CMA)
     ```

   - If you are installing the monitoring agent on a system that is not set to language ID 2924, enter the following two commands:

     ```
     RSTLICPGM LICPGM(5724C04) DEV(*SAVF) RSTOBJ(*PGM)
     SAVF(CCCINST/A4520CMA)

     RSTLICPGM LICPGM(5724C04) DEV(*SAVF) RSTOBJ(*LNG) LNG(2924)
     SAVF(CCCINST/A4520CMA) LNGLIB(QKA4LNG)
     ```

7. The Software Agreement display is shown. Use the function keys described along the bottom of the screen to select the appropriate language version of the agreement to display, and to accept or decline the agreement. The agreement must be accepted before the agent installation can continue.
8. If you plan to install other monitoring agents, leave the value of QALWOBJRST set to *ALL until you are finished. If you do not plan to install other monitoring agents, change the value of QALWOBJRST to the values you recorded in 1d on page 11.
9. Optional: Enter the following command to delete the installation library, which is no longer needed:

   ```
   DLTLIB CCCINST
   ```

10. **Optional:** Delete the A4520CMA.SAV file from your folder. Follow these steps:
    a. Enter the following command:

       ```
       WRKDOC FLR(A4FLR)
       ```

    b. Enter **4** for the A4520CMA.SAV file.
    c. Press **Enter** to return to the command line.
    d. Enter the following command to delete the installation folder:

       ```
       WRKFLR
       ```

    e. Enter **4** for the A4FLR folder.
    f. Press **F3** to return to the command line.

Configuring the monitoring agent

Objective

To configure or reconfigure the network connections between the Monitoring Agent for IBM i OS and the Tivoli Enterprise Monitoring Server (monitoring server).

Background information

You must use the IBM i OS non-programmable terminal interface to configure, start, and stop the Monitoring Agent for IBM i OS. Also use this interface to view the Monitoring Agent for IBM i OS message log.

For more information about using the non-programmable interface, refer to the online help. For more information about command and menu interfaces and working with message logs, refer to the documentation provided with your IBM i OS system.

If your environment includes a firewall between any IBM Tivoli Monitoring components, you must specify IP.PIPE as your communications protocol during configuration. For more information about firewall support including requirements for firewall configurations that use address translation, refer to the following sections in the *IBM Tivoli Monitoring Installation and Setup Guide*:

- "Security options" section in the "Installation and initial configuration of base components and agents" chapter
- "Firewalls" appendix

Required authorization role

*USER

You need authority to access the agent commands. By default, they all are *PUBLIC *EXCLUDE with some user group profiles given *USE authority as shown in Table 5 on page 16. Use the GRTOBJAUT command to add authorization for other users. Depending upon what options are specified for the CFGOMA, *ALLOBJ and *IOSYSCFG authorities might be required to successfully configure the Monitoring Agent.

Before you begin

Install the monitoring agent as described in "Installing the monitoring agent" on page 11.

When you finish

Start the Monitoring Agent for IBM i OS so you can begin using the monitoring agent to monitor your IBM i OS resources. For information about how to start the Monitoring Agent for IBM i OS, see "Starting the monitoring agent" on page 16.

Procedure

1. From an IBM i OS command line, enter the following command:
   ```
   GO OMA
   ```
2. Enter **4** (Configure Tivoli Monitoring: IBM i OS Agent).

The Config IBM i OS Monitoring Agent (CFGOMA) window is displayed.

3. Enter your site's values for the configuration parameters using the guidelines in Table 4.

Table 4. Configuration parameters

Parameter	Description
TEMS TCP/IP address	The TCP/IP address or host name of the computer where the monitoring server resides, such as 127.0.0.1 or RALEIGH. If you use the IP.PIPE or IP.SPIPE parameters, enter *NONE. If the correct TCP/IP address or host name was previously defined, enter *SAME to retrieve this setting.
TEMS IP.PIPE address	If the monitoring agent must connect to the monitoring server through a firewall, you must use the IP.PIPE communication protocol. Specify the IP.PIPE address or host name of the computer where the monitoring server resides. If you are not using the IP.PIPE communication protocol, enter *NONE.
TEMS IP.SPIPE Address	You can change the local Secure Socket Layer (SSL) IP.SPIPE location in an enterprise network that is using SSL IP.SPIPE communications. Configuration on the agent and the Tivoli Enterprise Monitoring Server must be completed for SSL communications to function.
Secondary TEMS IP address	The TCP/IP address or host name of the computer where the secondary monitoring server resides. The monitoring agent communicates with the secondary monitoring server if it cannot communicate with the primary monitoring server at startup.
Secondary TEMS IP.PIPE address	The IP.PIPE address or host name of the computer where the secondary monitoring server resides. The monitoring agent communicates with the secondary monitoring server if it cannot communicate with the primary monitoring server at startup.
Partition name	(Required only by sites with firewalls that use address translation.) The name of the partition (up to 32 alphanumeric characters) in which the monitoring agent resides.
Firewall in use	If the monitoring agent must connect to the monitoring server through a firewall, enter *YES. If the monitoring agent does not connect through a firewall, keep the default value, *NO.
TEMS TCP/IP port address	The listening port for the monitoring server. The default number is 1918. If the correct port was previously defined, enter *SAME to retrieve this setting.
TEMS IP.PIPE port address	The listening port for the monitoring server. The default is 1918.
TEMS IP.SPIPE Port Number	The Secure Shell port number.
TCP/IP Server	Specifies whether or not the Tivoli Monitoring: IBM i OS Agent is defined as a TCP/IP server. If it is a TCP/IP server then it can be started and stopped using the STRTCPSVR and ENDTCPSVR commands. The agent will also be automatically ended when TCP/IP is ended. If the agent is not defined as a TCP/IP server then you must start it after TCP/IP is started and end it before TCP/IP is ended.
Action user profile	The user authority under which user action must be administered. Keep the default value, QAUTOMON, to grant user system operator authority.

4. **Optional:** Customize the data collection intervals by changing the values of the following configuration variables in the QAUTOTMP/KMSPARM[KBBENV] file, which are listed with their default values:
   - KA4_JOB_DATA_INTERVAL=15
   - KA4_IOP_DATA_INTERVAL=30
   - KA4_DISK_DATA_INTERVAL=30
   - KA4_POOL_DATA_INTERVAL=15
   - KA4_COMM_DATA_INTERVAL=60

   Valid values for these configuration variables are 15, 30, 60, 120, and 240. These configuration variables follow the rules of the collection interval parameter of the IBM i OS QPMWKCOL API. Keep the following items in mind:
   - Disk and IOP-related data require a minimum of 30 seconds between collection intervals.
   - Communication-related data requires a minimum of 60 seconds between collection intervals.
   - Collect job-related data as infrequently as possible to minimize the impact on system performance.
   - The IBM i OS collection services performance data collector supports data collection at one-minute intervals, not at two or four-minute intervals. Therefore, when using the API and requesting data at two or four-minute intervals, the data is collected at one-minute intervals but reported back every two or four minutes.

Starting the monitoring agent

Objective

To start the Monitoring Agent for IBM i OS.

Background information

When the Monitoring Agent for IBM i OS is started, you can use the associated CLI commands. The table shows the group profiles that are authorized to these commands by default when the Monitoring Agent for IBM i OS is first installed. A check mark in a column indicates that users associated with that group profile can use the command.

To determine which group profile a user is associated with, use the Display User Profile (DSPUSRPRF) command. The group profile to which the user is associated is listed in the group profile field. A user profile without *ALLOBJ authority can start and stop the Monitoring Agent for IBM i OS. As indicated in Table 5, QSYSOPR must be specified as either the group profile name or in the list of supplemental groups for the user profile configured to start or stop the Monitoring Agent.

*Table 5. Commands owned by QSYS with *PUBLIC *EXCLUDE*

Command	QSYSOPR	QPGMR
CFGOMA		
DSPOMALOG	✓	✓
ENDOMA	✓	
STROMA	✓	

Required authorization role

*USER or, in some cases, *JOBCTL special authority if authorities for QAUTOMON were changed after installation

You need authority to access the agent commands. By default, they all are *PUBLIC *EXCLUDE with some user group profiles given *USE authority as shown in Table 5 on page 16. Use the GRTOBJAUT command to add authorization for other users.

Before you begin

Configure the monitoring agent as described in "Configuring the monitoring agent" on page 14.

When you finish

To determine if the monitoring agent is started, check the log file as described in "Displaying the log" on page 18. If the monitoring agent started successfully, the following message is written in the log file:

```
Tivoli Enterprise Monitoring Server located
```

Procedure

1. From an IBM i OS, enter the following command:

   ```
   GO OMA
   ```

2. Enter **2** (Start Tivoli Monitoring: IBM i OS Agent).

   The greater than character (>) preceding option 2 indicates that the monitoring agent is not started. When the monitoring agent is started the greater than character (>) is not displayed.

Stopping the monitoring agent

Objective

To stop the Monitoring Agent for IBM i OS.

Background information

Not applicable

Required authorization role

*USER

You need authority to access the agent commands. By default, they all are *PUBLIC *EXCLUDE with some user group profiles given *USE authority as shown in Table 5 on page 16. Use the GRTOBJAUT command to add authorization for other users.

Before you begin

Not applicable

When you finish

Not applicable

Procedure

1. From an IBM i OS, enter the following command:
   ```
   GO OMA
   ```
2. Enter **3** (End Tivoli Monitoring: IBM i OS Agent).
3. Specify one of the following options:

   ***IMMED**
   Stops the monitoring agent immediately.

   ***CNTRLD**
   Performs a controlled shutdown. With a controlled shutdown, you can also specify the following options:

   Delay time
   Shutdown is delayed for the time interval (in seconds) that you specify, enabling the monitoring agent to complete operations.

   Allow abnormal end if needed (YES, NO)
   If you enter YES, any jobs that have not ended after 10 minutes are shut down.

Displaying the log

Objective

To display the log for the Monitoring Agent for IBM i OS.

Background information

Messages related to the Monitoring Agent for IBM i OS while it is running are written in the KMSOMLOG message queue in the QAUTOMON library.

Required authorization role

*USER

You need authority to access the agent commands. By default, they all are *PUBLIC *EXCLUDE with some user group profiles given *USE authority as shown in Table 5 on page 16. Use the GRTOBJAUT command to add authorization for other users.

Before you begin

Not applicable.

When you finish

Not applicable.

Procedure

1. From an IBM i OS, enter the following command:
   ```
   GO OMA
   ```

2. Enter **1** (Display Tivoli Monitoring: IBM i OS Agent Log).

Deleting the monitoring agent

Objective

To delete the Monitoring Agent for IBM i OS.

Background information

Not applicable.

Required authorization role

QSECOFR or a user with *ALLOBJ special authority

Before you begin

Ensure that no other users are displaying the 'Tivoli Monitoring: IBM i OS Agent' menu, displayed using GO OMA, or displaying any of the associated CLI commands: CFGOMA, DSPOMALOG, ENDOMA, STROMA.

When you finish

Not applicable

Procedure

1. Stop the Monitoring Agent for IBM i OS.
2. From an IBM i OS, enter the following command:
   ```
   GO OMA
   ```
3. Enter **3** (End Tivoli Monitoring: IBM i OS Agent).
4. Wait until the OMA menu is redisplayed and the agent has stopped.
5. Press **F3** to exit the OMA menu.
6. From an IBM i OS command line, enter the following command:
   ```
   DLTLICPGM LICPGM(5724C04)
   ```

Support for SSL communication with the Monitoring Agent for IBM i

The Monitoring Agent for IBM i OS supports communication with the monitoring server using the SSL communication protocol (Secure Socket Layer).

In IBM Tivoli Monitoring, SSL communication is managed through the use of digital certificates. You have two options for managing certifications:

- iKeyman, a Java-based utility available as part of IBM iSeries Client Encryption licensed program. Key ring files to hold certificates can be created using the iKeyman GUI. Both Server and Client certificates can be created and stored in key ring files.
- Digital Certificate Manager (DCM), a free iSeries feature, to centrally manage certificates for applications. DCM enables managing certificates that are obtained from any Certificate Authority (CA). Also, you can use DCM to create and operate your own local CA to issue private certificates to applications and users in your organization.

Current SSL configuration does not use the key ring files on the Monitoring Agent for IBM i OS, unlike other OS monitoring agents. Instead, DCM is used to create a local certificate store, if it does not already exist on the system where IBM i OS is installed. Local certificates are created in the certificate store. Certificates obtained from a 3rd party Certificate authority also can be imported to the local certificate store. Complete the following steps to configure the SSL for the Monitoring Agent for IBM i OS using the Application Identifier to associate certificates to the Monitoring Agent for IBM i OS application and SSL services provided by iSeries.

The following procedure provides the high-level summary of the steps to configure this support:

1. Install the Monitoring Agent for IBM i OS on System i®.
2. Open the Configure Tivoli Monitoring: IBM i OS screen by running the **GO OMA** command and selecting Option 4.
3. Set the monitoring server DNS or IP address using the **TEMS IP.SPIPE Address** parameter.
4. Set the port number using the **TEMS IP.SPIPE Port Number** parameter. 3660 is the default port.
5. Configure the Certificate and Application ID using the steps in "Configuring DCM" on page 21.
6. Configure the monitoring server to communicate with the IP.SPIPE protocol on the port set in step 4. You can set this communication protocol in the Monitoring Tivoli Enterprise Monitoring Services utility.
7. Start the monitoring server and the Monitoring Agent for IBM i OS.

If there are connection problems, first configure the agent to communicate using the IP.PIPE protocol. If that is successful, then try with the SPIPE protocol.

If the agent does not connect, to troubleshoot the problem, set the agent trace as follows:

1. Add the line KDE_DEBUG=A somewhere in QAUTOTMP/KMSPARM(KBBENV)
2. Stop and restart the agent to generate more trace.
3. FTP the file QAUTOTMP/KA4AGENT01 to a PC and send to IBM Software Support.

Prerequisites

The documentation on the SSL and DCM are taken from the iSeries Information Center Web site. Refer to the iSeries documentation for more details on these topics. iSeries documentation can be obtained using the following link: http://publib.boulder.ibm.com/iseries/. After selecting the appropriate IBM i OS release, you can search for DCM or SSL to find related information.

Note: IBM i OS product numbers are specific for each OS release. Replace the 57** references with the product ID for the IBM i OS release you are using: V5R4 5722, V6R1 5761, or V7R1 5770.

The following are prerequisites for the SSL support on IBM i OS:

- IBM Digital Certificate Manager (DCM), option 34 of OS/400® (57**-SS1)
- TCP/IP Connectivity Utilities for iSeries (57**-TC1)
- IBM HTTP Server for iSeries (57**-DG1)

- If you are trying to use the HTTP server to use the DCM, be sure you have the IBM Developer Kit for Java(TM) (57**-JV1) installed, or the HTTP admin server will not start.
- The IBM Cryptographic Access Provider product, 57**-AC3 (128-bit). The bit size for this product indicates the maximum size of the secret material within the symmetric keys that can be used in cryptographic operations. The size allowed for a symmetric key is controlled by the export and import laws of each country. A higher bit size results in a more secure connection.

Optional: You might also want to install cryptographic hardware to use with SSL to speed up the SSL processing.

Configuring DCM

The following sections provide the steps to configure DCM.

Starting DCM

Before you can use any of its functions, you need to start Digital Certificate Manager (DCM). Complete these tasks to ensure that you can start DCM successfully:

- Install 57** SS1 Option 34. This is Digital Certificate Manager (DCM).
- Install 57** DG1. This is the IBM HTTP Server for iSeries.

Use the following steps to start DCM:

1. Use the iSeries Navigator to start the HTTP Server *ADMIN instance:
   a. Start iSeries Navigator.
   b. Double-click your iSeries server in the main tree view.
   c. Double-click **Network**.
   d. Double-click **Servers**.
   e. Double-click **TCP/IP**.
   f. Right-click **HTTP Administration** and click **Start**.
2. Start your Web browser and go to the iSeries Tasks page on your system at http://*your_system_name*:2001.
3. Select **Digital Certificate Manager** from the list of products on the iSeries Tasks page to access the DCM feature.

Setting up certificates for the first time

The left frame of Digital Certificate Manager (DCM) is the task navigation frame. You can use this frame to select a wide variety of tasks for managing certificates and the applications that use them. Which tasks are available depends on which certificate store (if any) you have opened and your user profile authority. Most tasks are available only if you have *ALLOBJ and *SECADM special authorities.

When you use Digital Certificate Manager (DCM) for the first time, no certificate stores exist (unless you have migrated from a previous version of DCM). Consequently, the navigation frame displays only these tasks when you have the necessary authorities:

- Manage User Certificates.
- Create New Certificate Store.
- Create a Certificate Authority (CA). (Note: After you use this task to create a private CA, this task no longer appears in the list.)
- Manage CRL Locations.

- Manage PKIX Request Location.

Even if certificate stores already exist on your system (for example, you are migrating from an earlier version of DCM), DCM displays only a limited number of tasks or task categories in the left navigation frame. You must first access the appropriate certificate store before you can begin working with most certificate and application management tasks. To open a specific certificate store, click Select a Certificate Store in the navigation frame.

Certificates can be obtained using either public internet Certificate Authority (CA), such as VeriSign or certificates can be issued from the local private Certificate Authority. The following steps are primarily applicable to certificates issued using the local CA. iSeries or other documentation need to be considered for the steps to obtain certificates from public CA.

Creating a new certificate store

Perform the steps in this section if *SYSTEM certificate store does not exist already. This section should be skipped if *SYSTEM certificate store already created on the system. “Select Certificate Store” button in the task navigation frame can be used to verify if *SYSTEM certificate store already created or not. “*SYSTEM” will be listed if there is one already.

1. Click **Create New Certificate Store** in the task navigation frame.
2. Select ***SYSTEM** and click **Continue**.
3. Select **No – Do not create a certificate in the certificate store** and click **Continue**.
4. Provide the password and click **Continue**.
5. Click **OK** to complete the step.

Selecting the *SYSTEM certificate store

This step is a prerequisite for performing the steps in the following sections.

1. Click **Select a Certificate Store** in the task navigation frame.
2. Choose ***SYSTEM** and click **Continue**.
3. Provide the password and click **Continue**.

A screen will be displayed indicating *SYSTEM as the current certificate store and also showing the **Certificate store path and filename**: `/QIBM/USERDATA/ICSS/CERT/SERVER/DEFAULT.KDB` (if the default certificate store path is chosen).

Authorizing QAUTOMON to use certificate store files

Complete the following steps to provide sufficient authority for QAUTOMON to access certificate store files.

1. Using WRKFCNUSG, find QIBM_QSY_SYSTEM_CERT_STORE.
2. Choose option 2=Change usage.
3. Specify QAUTOMON for User.
4. Specify *ALLOWED for Usage.

This allows QAUTOMON access to the created certificates that are used for SSL communications between the server and agent.

Creating the local Certificate Authority

Complete the following steps if Local Certificate Authority does not already exist. Use the Select Certificate Store task to verify if a local Certificate Authority exists. If one exists, **Local Certificate Authority (CA)** is listed.

1. Click **Create a Certificate Authority** in the task navigation frame.
2. Complete the following fields for the certificate and click **OK**.

Field	Value
Key size	1024
Certificate store password	Type the password for your certificate store. This field is required.
Confirm password	Type the password again.
Certificate Authority (CA) name	LOCAL_CERTIFICATE_AUTHORITY (1). This field is required.
Organization unit	
Organization name	Specify the company name. This field is required.
Locality or city	
State or province	Specify the state. This field is required.
Country or region	Specify the country. This field is required.
Validity period of Certificate Authority (CA) (2-7300)	1095 days

3. The next screen provides the option to install the certificate on your browser. This is an optional step and is not required for IBM i OS. To install the certificate on your browser, click **Install Certificate**. Choose to **Open** or **Save** the certificate in local directory. If you choose to save the certificate, click on it after saving to open the certificate. Several screens are displayed to install the certificate.
4. Click **Continue** on the Install Local Certificate screen.
5. Click **Yes** for **Allow creation of user certificates** on the Certificate Authority (CA) Policy Data screen.
6. Click **Continue**.
7. Click **Continue** or **OK** on the next screen to complete the creation of local Certificate Authority.

Creating certificates using the local Certificate Authority

DCM provides a guided task path that can be used for creating a CA and using it to issue certificates to your applications. After clicking the button, a screen displays the list of Certificate Stores. Make sure *SYSTEM is the current certificate store. Use "Select a Certificate Store" button to select *SYSTEM certificate store.

1. Click **Create Certificate**.
2. Select **Server or Client Certificate**.
3. Select **Local Certificate Authority**.
4. Enter the following details for the certificate:

   Certificate type
   Server or client

   Certificate store
   *SYSTEM

5. Complete the form to create the certificate. Use the following values:

   Key size
   1024

Certificate label
IBM_Tivoli_Monitoring_Agent_Certificate

Common name
IBM Tivoli Monitoring Agent Self Signed Certificate

Organization unit
Type the organization name. This field is required.

Locality or city

State or province
Type the state or province. This field is required.

Country or region
Type the country. This field is required.

IP version 4 address

Fully qualified domain name (host_name.domain_name)

E-mail address (user_name@domain_name)

6. Click **Continue** and **OK** on the next screens. No need to choose any applications at this time.

This will complete the steps to create a Server or Client Certificate. You can view the details of the certification using the **View Certificate** task.

Creating an application ID

To create an application definition, follow these steps:

1. In DCM, click **Select a Certificate Store** and select the appropriate certificate store. (This should be *SYSTEM certificate store for creating SSL application definition for either a server application or client application.)
2. When the Certificate Store and Password page displays, provide the password that you specified for the certificate store when you created it and click **Continue**.
3. In the navigation frame, select **Manage Applications** to display a list of tasks.
4. Select **Add application** from the task list to display a form for defining the application.

   Note: If you are working in the *SYSTEM certificate store, DCM will prompt you to choose whether to add a server application definition or a client application definition. Choose to create Client application definition for this purpose.
5. Complete the form and click **Add**. The information that you can specify for the application definition varies based on the type of application that you are defining. Table 6 lists the current properties for the default Application ID created for the IBM i OS monitoring agent.

Table 6. Application properties

Field	Default value
Application type	Client
Application ID	QIBM_ITM_KA4_AGENT
Exit program	CT_AGENT
Exit program library	QAUTOMON
Threadsafe	Yes

Table 6. Application properties (continued)

Field	Default value
Multithread job action	Run program and send message
Application user profile	QAUTOMON
Define the CA trust list	Yes
Certificate revocation processing	No
Application description	IBM Tivoli Monitoring v6.3: IBM i OS Agent

Associating the certificate with the application ID

Use the following steps to associate the certificate with the application ID:

1. Click **Assign Certificate** under Manage Certificates in the task navigation frame.
2. Select the certificate from the list.
3. Click **Assign to Applications**.
4. Select the application definition you want to associate with the certificate and click **Continue**.

Defining the CA Trust list

Use the following steps to define the CA Trust list:

1. Click **Define CA Trust list** under **Manage Applications**.
2. Select **Client - Add or remove a Certificate Authority (CA) certificate from a client application CA trust list**.
3. Select **ITM 6.3 Monitoring Agent for IBM i OS Agent** and click **Define CA Trust List**.
4. Click **Trust All** and click **OK**.

Configuring the monitoring agent

Four environment variables have been introduced for SSL configuration on the agent.

- KDEBE_APPLICATIONID
- KDC_PORTSSL
- IP_SPIPE
- KDEBE_PROTOCOL

You can set the KDEBE_OS400_APP_ID and KDEBE_PROTOCOL variables by editing the QAUTOTMP/KMSPARM(KBBENV) file. You can set the IP_PIPE and KDC_PORTSSL variables using the configuration screen provided using **GO OMA**, Option 4.

KDEBE_APPLICATIONID

Required for identifying the Application Identifier used to establish the SSL communication between the Monitoring Agent for IBM i OS and the monitoring server. The value for this variable depends on the Application Identifier name that is created using DCM. The default value is QIBM_ITM_KA4_AGENT for the Monitoring Agent for IBM i OS. If the default Application Identifier is not used, you must update the KDEBE_APPLICATIONID value in the KBBENV configuration file with the correct Application ID.

IP_SPIPE

Used to store the monitoring server's SPIPE Address. This can be either the

DNS name or IP address. This value can be set using the configuration screen available from the main menu (**GO OMA** Option 4). You do not need to edit the KBBENV environment variable file for this variable.

KDC_PORTSSL
Used to store the monitoring server's SPIPE port number. This value can be set using the configuration screen available from the main menu (**GO OMA** Option 4). You do not need to edit the KBBENV environment variable file for this variable.

KDEBE_PROTOCOL
Used to set the SSL Version protocol that the agent computer uses to connect to the monitoring server computer.

KDEBE_PROTOCOL has the following characteristics:

- KDEBE_PROTOCOL=SSL_VERSION_3 (SSL 3 only). This causes an override of the available cipher suites to preclude the use of AES.
- KDEBE_PROTOCOL=SSL_VERSION_CURRENT (TLS with SSL 3 and 2 compatibility)
- KDEBE_PROTOCOL=SSL_VERSION_2 (SSL 2, not recommended, weak) KDEBE_PROTOCOL=TLSV1_SSLV3 (TLS with SSL 3 compatibility)

Setting the Coded Character Set Identifier (CCSID)

When the Coded Character Set on the agent system is not the same as that on the Tivoli Enterprise Portal Server the text displayed for messages and other attribute fields might not be displayed correctly. To correct this situation you can change the CCSID defined for the QAUTOMON user profile on the Monitoring Agent for IBM i OS. Use the Change User Profile (CHGUSRPRF) command on the Monitoring Agent for IBM i OS system to set the CCSID to be compatible with the server. For example, the following command changes the CCSID to 5035 for Japanese, combined SBCS/DBCS:

```
CHGUSRPRF USRPRF(QAUTOMON) CCSID(5035)
```

To ensure that this change is maintained with new installations of the agent, you can add a property to the QAUTOTMP/KMSPARM.KBBENV agent properties file. Add property KA4_QAUTOMON_CCSID followed by an equal sign and the desired CCSID number. For example, adding the following line to the properties file sets the CCSID for the QAUTOMON profile to 5035:

```
KA4_QAUTOMON_CCSID=5035
```

You must stop and restart the agent after using the CHGUSRPRF command or adding the KA4_QAUTOMON_CCSID line to the properties file for the change to take affect.

Documentation library

Various publications are relevant to the use of IBM Tivoli Monitoring and to the commonly shared components of Tivoli Management Services.

These publications are listed in the following categories:

- IBM Tivoli Monitoring library
- Related publications

Documentation is delivered in the IBM Tivoli Monitoring and OMEGAMON® XE Information Center at http://pic.dhe.ibm.com/infocenter/tivihelp/v61r1/index.jsp and also in the **Files** section of the Application Performance Management community.

For information about accessing and using the publications, select IBM Tivoli Monitoring → **Using the publications** in the **Contents** pane of the IBM Tivoli Monitoring and OMEGAMON XE Information Center at http://pic.dhe.ibm.com/infocenter/tivihelp/v61r1/index.jsp.

To find a list of new and changed publications, click the **New in this release** topic on the IBM Tivoli Monitoring welcome page. To find publications from the previous version of a product, click **Previous versions** under the name of the product in the **Contents** pane.

IBM Tivoli Monitoring library

The IBM Tivoli Monitoring library provides information about the commonly shared components of Tivoli Management Services.

- *Quick Start Guide*

  Introduces the components of IBM Tivoli Monitoring.
- *Installation and Setup Guide*, SC22-5445

  Provides instructions for installing and configuring IBM Tivoli Monitoring components on Windows, Linux, and UNIX systems.
- *Installation Roadmap* available on Service Management Connect

  Provides a roadmap that covers the installation of IBM Tivoli Monitoring.
- *High Availability Guide for Distributed Systems*, SC22-5455

  Gives instructions for several methods of ensuring the availability of the IBM Tivoli Monitoring components.
- *Program Directory for IBM Tivoli Management Services on z/OS*, GI11-4105

  Gives instructions for the SMP/E installation of the Tivoli Management Services components on z/OS®.
- *Administrator's Guide*, SC22-5446

  Describes the support tasks and functions required for the Tivoli Enterprise Portal Server and clients, including Tivoli Enterprise Portal user administration.
- *Command Reference* available on Service Management Connect

  Provides detailed syntax and parameter information, as well as examples, for the commands you can use in IBM Tivoli Monitoring.
- *Messages* available on Service Management Connect

Lists and explains messages generated by all IBM Tivoli Monitoring components and by z/OS-based Tivoli Management Services components (such as Tivoli Enterprise Monitoring Server on z/OS and TMS:Engine).

- *Troubleshooting Guide* available on Service Management Connect

  Provides information to help you troubleshoot problems with the software.
- *Tivoli Enterprise Portal User's Guide* available on Service Management Connect

  Complements the Tivoli Enterprise Portal online help. The guide provides hands-on lessons and detailed instructions for all Tivoli Enterprise Portal features.
- Tivoli Enterprise Portal online help

  Provides context-sensitive reference information about all features and customization options of the Tivoli Enterprise Portal. Also gives instructions for using and administering the Tivoli Enterprise Portal.

Documentation for the base agents

If you purchased IBM Tivoli Monitoring as a product, you received a set of base monitoring agents as part of the product. If you purchased a monitoring agent product (for example, an OMEGAMON XE product) that includes the commonly shared components of Tivoli Management Services, you did not receive the base agents.

The following publications provide information about using the base agents.

- Agentless operating system monitors
  - *Agentless Monitoring for Windows Operating Systems User's Guide*, SC23-9765
  - *Agentless Monitoring for AIX Operating Systems User's Guide*, SC23-9761
  - *Agentless Monitoring for HP-UX Operating Systems User's Guide*, SC23-9763
  - *Agentless Monitoring for Solaris Operating Systems User's Guide*, SC23-9764
  - *Agentless Monitoring for Linux Operating Systems User's Guide*, SC23-9762
- OS agent documentation is delivered in the following locations:

  Agent Installation and Configuration Guide
  Available in the Information Center:
  - *IBM i OS Agent Installation and Configuration Guide*, SC27-5653
  - *Linux OS Agent Installation and Configuration Guide*, SC27-5652
  - *UNIX OS Agent Installation and Configuration Guide*, SC27-5651
  - *Windows OS Agent Installation and Configuration Guide*, SC27-5650

  Agent Reference
  Available on Service Management Connect

  Agent Troubleshooting Guide
  Available on Service Management Connect

  Infrastructure Management Dashboards for Servers Reference
  Available on Service Management Connect
- Warehouse agent documentation is delivered in the following locations:

  Agent Installation and Configuration Guide
  Available in the Information Center:
  - *Warehouse Proxy Agent Installation and Configuration Guide*, SC27-5655
  - *Warehouse Summarization and Pruning Agent Installation and Configuration Guide*, SC27-5654

Agent Reference
Available on Service Management Connect

Agent Troubleshooting Guide
Available on Service Management Connect

- System P agents
  - *AIX Premium Agent User's Guide*, SA23-2237
  - *CEC Base Agent User's Guide*, SC23-5239
  - *HMC Base Agent User's Guide*, SA23-2239
  - *VIOS Premium Agent User's Guide*, SA23-2238
- Other base agents
  - *Agent Builder User's Guide*, SC32-1921
  - *Performance Analyzer User's Guide*, SC27-4004
  - *Systems Director base Agent User's Guide*, SC27-2872
  - *Tivoli Log File Agent User's Guide*, SC14-7484
  - *Tivoli zEnterprise Monitoring Agent User's Guide*, SC14-7359 and the *Tivoli zEnterprise Monitoring Agent Installation and Configuration Guide*, SC14-7358

Related publications

For information about related products and publications select **OMEGAMON XE shared publications** or other entries in the **Contents** pane of the IBM Tivoli Monitoring and OMEGAMON XE Information Center.

You can access the IBM Tivoli Monitoring and OMEGAMON XE Information Center at http://pic.dhe.ibm.com/infocenter/tivihelp/v61r1/index.jsp .

You can also access other information centers at IBM Tivoli Documentation Central (https://www.ibm.com/developerworks/community/wikis/home?lang=en#!/wiki/Tivoli%20Documentation%20Central).

Tivoli Monitoring community on Service Management Connect

Connect, learn, and share with Service Management professionals: product support technical experts who provide their perspectives and expertise.

For information about Tivoli products, see the Application Performance Management community on SMC at IBM Service Management Connect > Application Performance Management (http://www.ibm.com/developerworks/servicemanagement/apm).

For introductory information, see IBM Service Management Connect (http://www.ibm.com/developerworks/servicemanagement).

Use Service Management Connect in the following ways:

- Become involved with transparent development, an ongoing, open engagement between other users and IBM developers of Tivoli products. You can access early designs, sprint demonstrations, product roadmaps, and prerelease code.
- Connect one-on-one with the experts to collaborate and network about Tivoli and the (enter your community name here) community.
- Read blogs to benefit from the expertise and experience of others.
- Use wikis and forums to collaborate with the broader user community.

Other sources of documentation

You can obtain additional technical documentation about monitoring products from other sources.

- Tivoli wikis

  IBM Service Management Connect > Application Performance Management (http://www.ibm.com/developerworks/servicemanagement/apm) includes a list of relevant Tivoli wikis that offer best practices and scenarios for using Tivoli products, white papers contributed by IBM employees, and content created by customers and business partners.

  Two of these wikis are of particular relevance to IBM Tivoli Monitoring:

  – The IBM Tivoli Monitoring Wiki (https://www.ibm.com/developerworks/community/wikis/home?lang=en#!/wiki/Tivoli%20Monitoring) provides information about IBM Tivoli Monitoring and related distributed products, including IBM Tivoli Composite Application Management products.

  – The Tivoli System z® Monitoring and Application Management Wiki provides information about the OMEGAMON XE products, NetView® for z/OS, Tivoli Monitoring Agent for z/TPF, and other System z monitoring and application management products.

- IBM Integrated Service Management Library

  http://www.ibm.com/software/brandcatalog/ismlibrary/

  IBM Integrated Service Management Library is an online catalog that contains integration documentation and other downloadable product extensions.

- Redbooks®

  http://www.redbooks.ibm.com/

  IBM Redbooks and Redpapers include information about products from platform and solution perspectives.

- Technotes

  Technotes provide the latest information about known product limitations and workarounds. You can find Technotes through the IBM Software Support Web site at http://www.ibm.com/software/support/.

Support information

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

Online

The following sites contain troubleshooting information:

- Go to the IBM Support Portal (http://www.ibm.com/support/entry/portal/software) and follow the instructions.
- Go to IBM Service Management Connect > Application Performance Management (http://www.ibm.com/developerworks/servicemanagement/apm) and select the appropriate wiki.

IBM Support Assistant

The IBM Support Assistant (ISA) is a free local software serviceability workbench that helps you resolve questions and problems with IBM software products. The ISA provides quick access to support-related information and serviceability tools for problem determination. To install the ISA software, go to IBM Support Assistant (http://www-01.ibm.com/software/support/isa).

Troubleshooting Guide

For more information about resolving problems, see the product's Troubleshooting Guide.

Using IBM Support Assistant

The IBM Support Assistant is a free, stand-alone application that you can install on any workstation. You can then enhance the application by installing product-specific plug-in modules for the IBM products you use.

The IBM Support Assistant saves you the time it takes to search the product, support, and educational resources. The IBM Support Assistant helps you gather support information when you need to open a problem management record (PMR), which you can then use to track the problem.

The product-specific plug-in modules provide you with the following resources:

- Support links
- Education links
- Ability to submit problem management reports

For more information, and to download the IBM Support Assistant, see http://www.ibm.com/software/support/isa. After you download and install the IBM Support Assistant, follow these steps to install the plug-in for your Tivoli product:

1. Start the IBM Support Assistant application.
2. Select **Updater** on the Welcome page.
3. Select **New Properties and Tools** or select the **New Plug-ins** tab (depending on the version of IBM Support Assistant installed).
4. Under **Tivoli**, select your product, and then click **Install**. Be sure to read the license and description.

If your product is not included on the list under **Tivoli**, no plug-in is available yet for the product.

5. Read the license and description, and click **I agree**.
6. Restart the IBM Support Assistant.

Obtaining fixes

A product fix might be available to resolve your problem. To determine which fixes are available for your Tivoli software product, follow these steps:

1. Go to the IBM Software Support website at http://www.ibm.com/software/support.
2. Under **Select a brand and/or product**, select **Tivoli**.

   If you click **Go**, the **Search within all of Tivoli support** section is displayed. If you don't click **Go**, you see the **Select a product** section.
3. Select your product and click **Go**.
4. Under **Download**, click the name of a fix to read its description and, optionally, to download it.

   If there is no **Download** heading for your product, supply a search term, error code, or APAR number in the field provided under **Search Support (this product)**, and click **Search**.

For more information about the types of fixes that are available, see the *IBM Software Support Handbook* at http://www14.software.ibm.com/webapp/set2/sas/f/handbook/home.html.

Receiving weekly support updates

To receive weekly e-mail notifications about fixes and other software support news, follow these steps:

1. Go to the IBM Software Support website at http://www.ibm.com/software/support.
2. Click **My support** in the far upper-right corner of the page under **Personalized support**.
3. If you have already registered for **My support**, sign in and skip to the next step. If you have not registered, click **register now**. Complete the registration form using your e-mail address as your IBM ID and click **Submit**.
4. The **Edit profile** tab is displayed.
5. In the first list under **Products**, select **Software**. In the second list, select a product category (for example, **Systems and Asset Management**). In the third list, select a product sub-category (for example, **Application Performance & Availability** or **Systems Performance**). A list of applicable products is displayed.
6. Select the products for which you want to receive updates.
7. Click **Add products**.
8. After selecting all products that are of interest to you, click **Subscribe to email** on the **Edit profile** tab.
9. In the **Documents** list, select **Software**.
10. Select **Please send these documents by weekly email**.
11. Update your e-mail address as needed.
12. Select the types of documents you want to receive.
13. Click **Update**.

If you experience problems with the **My support** feature, you can obtain help in one of the following ways:

Online

Send an e-mail message to erchelp@ca.ibm.com, describing your problem.

By phone

Call 1-800-IBM-4You (1-800-426-4968).

Contacting IBM Software Support

IBM Software Support provides assistance with product defects. The easiest way to obtain that assistance is to open a PMR or ETR directly from the IBM Support Assistant.

Before contacting IBM Software Support, your company must have an active IBM software maintenance contract, and you must be authorized to submit problems to IBM. The type of software maintenance contract that you need depends on the type of product you have:

- For IBM distributed software products (including, but not limited to, Tivoli, Lotus®, and Rational® products, as well as DB2 and WebSphere® products that run on Windows or UNIX operating systems), enroll in Passport Advantage® in one of the following ways:

  Online

  Go to the Passport Advantage website at http://www-306.ibm.com/software/howtobuy/passportadvantage/pao_customers.htm .

  By telephone

  For the telephone number to call in your country, go to the IBM Software Support website at http://techsupport.services.ibm.com/guides/contacts.html and click the name of your geographic region.
- For customers with Subscription and Support (S & S) contracts, go to the Software Service Request website at https://techsupport.services.ibm.com/ssr/login.
- For customers with Linux, iSeries, pSeries, zSeries, and other support agreements, go to the IBM Support Line website at http://www.ibm.com/services/us/index.wss/so/its/a1000030/dt006.
- For IBM eServer™ software products (including, but not limited to, DB2 and WebSphere products that run in zSeries, pSeries, and iSeries environments), you can purchase a software maintenance agreement by working directly with an IBM sales representative or an IBM Business Partner. For more information about support for eServer software products, go to the IBM Technical Support Advantage website at http://www.ibm.com/servers/eserver/techsupport.html.

If you are not sure what type of software maintenance contract you need, call 1-800-IBMSERV (1-800-426-7378) in the United States. From other countries, go to the contacts page of the *IBM Software Support Handbook* on the web at http://www14.software.ibm.com/webapp/set2/sas/f/handbook/home.html and click the name of your geographic region for telephone numbers of people who provide support for your location.

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