IBM Tivoli Monitoring
Version 6.3 Fix Pack 2

Windows OS Agent Installation and Configuration Guide

SC27-5650-00

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Note
Before using this information and the product it supports, read the information in "Notices" on page 23.

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

The Monitoring Agent for Windows OS offers a central point of management for your Microsoft Windows server environment. It provides a comprehensive means for gathering exactly the information you need to detect problems early and to prevent them. Information is standardized across your enterprise. The Monitoring Agent for Windows OS lets you easily collect and analyze server-specific information such as the following:

- Operating system and CPU performance
- Disk information and performance analysis
- Process status analysis
- Internet session data
- Monitored logs information
- Internet server statistics
- Message queuing statistics
- Printer and job status data
- Remote Access Services statistics
- Services information

The Monitoring Agent for Windows OS provides the following benefits:

- Increases knowledge with extensive reporting capabilities that provide real-time access to reliable, up-to-the-minute data. Thus, you can make faster, better-informed operating decisions.

- Enhances system performance by letting you integrate, monitor, and manage your system, environment, console, and mission-critical applications. For example, the monitoring agent can alert you when conditions in your environment meet or exceed the thresholds you set. These alerts notify your system administrator to limit and control system traffic.
- Simplifies application and system management by managing applications, platforms, and resources across your system.

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.
- The Infrastructure Management Dashboards for Servers (Server Dashboards) managed system dashboard has new tabs: Properties, CPU, Memory, Disk, and Network. Several tabs have a new time selector bar for changing from real time to showing historical data; and the situation event results dashboard Details tab has a new time selector bar for setting a time range of data samples before or after the event time.
- For the Utilitzation Details for Single Resource report, you can specify the resources to display (CPU, Memory, Disk, Network, or Process).

For version 6.3 of the monitoring agent, enhancements include:

- New attribute, Hyper-Threading, added to the System attributes group.
- New attributes, Description, DHCP, and Friendly Name, added to the Network Interface attributes group.
- New attribute groups, VM Memory and VM Processor, added to the monitoring agent.
- For attribute values calculated as an average of the cumulative CPU ticks between two samples, note that the sample time differs depending on how the agent is invoked to return the values. If the agent is invoked to return the values on-demand (for example, after a workspace refresh), the sample time is 30 secs. If, however, the agent is invoked to return the values by a situation or an historical collection request, the sample time is the same as that of the situation or of the collection interval. The affected attributes include:
  - NT Process 64 and NT Process attribute groups: % Processor time, Avg % Processor, % Privileged Time, and % User Time attributes
  - NT Processor attribute group: % Privileged Time, % Processor Time, % User Time, Interrupts/sec, DPC Queued/sec, % DPC Time, and % Interrupt Time attributes
  - NT Processor Summary attribute group: High % Processor Time, High % Privileged Time, High % User Time, High % Interrupt Time, High Interrupts/sec, Low % Processor Time, Low % Privileged Time, Low % User Time, Low % Interrupt Time, Low Interrupts/sec, High Process Utilization, and High Process Avg Utilization attributes
  - NT System attribute group: % Total Privileged Time, % Total Processor Time, % Total User Time, and Total Interrupts/Sec attributes

  You can customize the attribute values by specifying two variables in the KNTENV file: KNT_CPUSTAT_SAMPLE_SECS for the total CPU metrics (default value: 30 seconds) and KNT_PROCESS_SAMPLE_SECS for the CPU metrics per

process (default value: 60 seconds). If these variables are set to 0, the sampling interval is variable: the samples are taken when the requests come to the agent (for example, at each workspace refresh), and the sampling interval is the difference in time between last two samples (with a minimum of at least 5 seconds).

- 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 Windows OS (product code knt or nt), 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 Java-based user interface 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 received from the monitoring agents, and collects their performance and availability data.
- Monitoring Agent for Windows OS, which collects and sends data to a Tivoli Enterprise Monitoring Server. This component also embeds the Agent Management Services function.

- Operating system agents and application agents installed on the systems or subsystems you want to monitor. These agents collect and send data to the Tivoli Enterprise Monitoring Server.
- Tivoli Data Warehouse for storing historical data collected from agents in your environment. The data warehouse is located on a DB2®, Oracle, or Microsoft SQL Server database. To collect information to store in this database, you must install the Warehouse Proxy agent. To perform aggregation and pruning functions on 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*.

Agent Management Services

Two watchdog monitors run as part of the Monitoring Agent for Windows. One monitor runs as part of the OS Monitoring Agent process, which is referred to as the *Agent Watchdog*. The other watchdog monitor runs as a separate process named 'kcawd' (kcawd.exe on Windows). The kcawd process is also called the *Agent Management Services Watchdog*. This watchdog watches the OS Agent. It does this out-of-the-box, so as long as its Availability Status is showing 'Running' in the Agents' Runtime Status view of the Agent Management Services workspace. No setup or configuration is required.

The Agent Watchdog monitors agent processes other than the OS Agent. By using the communication facility of the OS Agent, this monitor can respond to Tivoli® Enterprise Portal Desktop queries and Take Action commands that are performed against these other agent processes. The data is displayed in the Agent Management Services workspace. In the Tivoli Enterprise Portal Desktop, the Agent Management Services workspace lists the agents that can be monitored by this watchdog that is running as part of the OS Agent. These agents are non-OS agents, so the Monitoring Agent for Windows is not listed in the workspace, except for in the Agents' Management view. One of the agents listed in the workspace is the Agent Management Services Watchdog. Its purpose is to monitor the OS Agent's availability.

The Agent Management Services Watchdog monitor is responsible for watching just the OS Monitoring Agent and restarting it if it goes down. It is enabled by default and does not need to be configured. It is started automatically when the Monitoring Agent for Windows is started. This watchdog does not have a communication facility, so it cannot report information to the Tivoli Enterprise Portal or respond to Take Action commands. It is not an agent in itself, but a separate process that always monitors the OS Monitoring Agent.

You can temporarily disable the Agent Management Services Watchdog by using the *InstallDir*\tmaitm6_x64\disarmWatchdog.bat command if you have installed a 64-bit agent or by using the *InstallDir*\tmaitm6\disarmWatchdog.bat command if you have installed a 32-bit agent. These commands disable the Watchdog process for the OS Monitoring Agent and all Agent Management Services managed agents. If there is local administrative work to be performed, and you do not want the auto-restart of the agents to interfere with it, run appropriate command for your platform before proceeding. When the work is complete, recycle the OS Monitoring

Agent to reenable Agent Management Services. Alternatively, use the *InstallDir*\tmaitm6_x64\rearmWatchdog.bat command if you have installed a 64-bit agent or the *InstallDir*\tmaitm6\rearmWatchdog.bat command if you have installed a 32-bit agent.

If you use the Manage Tivoli Enterprise Monitoring Services interface to stop or start an Agent Management Services managed agent, its watchdog will be disabled if stopping the agent and enabled if starting the agent.

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 installed on your Web server.

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

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 agent and starting Tivoli services 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 Windows OS requires the environment described in Table 1 on page 8.

Table 1. System requirements for the Monitoring Agent for Windows OS

Operating system	**Windows**
Operating system versions	• Windows Server 2003 Standard Edition on Intel x86-32 (32 bit) • Windows Server 2003 Standard Edition on x86-64 (64 bit) • Windows Server 2003 Enterprise Edition on Intel x86-32 (32 bit) • Windows Server 2003 Enterprise Edition on x86-64 (64 bit) • Windows Server 2003 Datacenter Edition on Intel x86-32 (32 bit) • Windows Server 2003 Datacenter Edition on Intel x86-64 (64 bit) • Windows Server 2003 Standard Edition R2 on Intel x86-32 (32 bit) • Windows Server 2003 Standard Edition R2 on x86-64 (64 bit) • Windows Server 2003 Enterprise Edition R2 on Intel x86-32 (32 bit) • Windows Server 2003 Enterprise Edition R2 on x86-64 (64 bit) • Windows Server 2003 Datacenter Edition R2 on Intel x86-32 (32 bit) • Windows Server 2003 Datacenter Edition R2 on Intel x86-64 (64 bit) • Windows Server 2008 Standard Edition on Intel x86-32 (32 bit) • Windows Server 2008 Standard Edition on Intel x86-64 (64 bit) • Windows Server 2008 Enterprise Edition on Intel x86-32 (32 bit) • Windows Server 2008 Enterprise Edition on Intel x86-64 (64 bit) • Windows Server 2008 Datacenter Edition on Intel x86-32 (32 bit) • Windows Server 2008 Datacenter Edition on Intel x86-64 (64 bit) • Windows 7 Enterprise Edition on Intel x86-32 (32 bit) • Windows 7 Enterprise Edition on Intel x86-64 (64 bit) • Windows 7 Professional Edition on Intel x86-32 (32 bit) • Windows 7 Professional Edition on Intel x86-64 (64 bit) • Windows 7 Ultimate Edition on Intel x86-32 (32 bit) • Windows 7 Ultimate Edition on Intel x86-64 (64 bit) • Windows 8 Pro on Intel x86-32 (32 bit) • Windows 8 Pro on Intel x86-64 (64 bit) • Windows 8 Enterprise on Intel x86-32 (32 bit) • Windows 8 Enterprise on Intel x86-64 (64 bit) • Windows Server 2008 R2 Standard Edition on Intel x86-64 (64 bit) • Windows Server 2008 R2 Enterprise Edition on Intel x86-64 (64 bit) • Windows Server 2008 R2 Datacenter Edition on Intel x86-64 (64 bit) • Windows Server 2008 R2 Server Core on Intel x86-64 (64 bit) • Windows Server 2012 Essentials Edition on Intel x86-64 (64 bit) • Windows Server 2012 Standard edition on Intel x86-64 (64 bit) • Windows Server 2012 Datacenter edition on Intel x86-64 (64 bit)
Memory	• 35 MB RAM for the Monitoring Agent for Windows OS
Disk space	• The Monitoring Agent for Windows OS requires 125 MB of disk space in the file system where it is to be installed through the local install method. 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 dat"a in the *IBM Tivoli Monitoring Windows OS Agent Reference*.

Table 1. System requirements for the Monitoring Agent for Windows OS (continued)

Operating system	**Windows**
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. • Components to be monitored must be installed and configured • The minimum supported level of Microsoft.NET Framework is .NET Framework 1.1 SP1. For older releases of Windows OS that do not support 1.1 .NET, the minimum level is NET Framework 1.0 SP3. .NET Framework 3.5 is supported for 64-bit agents. • cscript version 5.6 or higher • The watchdog that is part of the Windows OS Agent calls scripts that require Windows Script Host 5.6 at a minimum

Note: If you install the agent on a 64-bit platform, the installer will default to 64-bit mode. If you are upgrading from an older version, the agent will continue to run in 32-bit mode.

Note: You cannot install two Windows OS Agents on the same system. This restriction also precludes installing a 32-bit Windows OS Agent and a 64-bit Windows OS Agent on the same system.

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.

Silent installation: If you are performing a silent installation using a response file, see the IBM Tivoli Monitoring Installation and Setup Guide, "Performing a silent installation of IBM Tivoli Monitoring."

Running as a non-Administrator user

You can run the Monitoring Agent for Windows OS as a non-Administrator user, however some functionality is unavailable.

When running as a non-Administrator user, you lose functionality in the following attribute groups if they are owned solely by the Administrator account:

- Registry
- File Trend
- File Change

Remote deployment of other agents is not available because administrator rights are required to install the new agents.

For Agent Management Services, the watchdog cannot stop or start any agent that it does not have privileges to stop or start.

To create a non-Administrator user, create a new Limited (non-Administrator) user and set up registry permissions as follows for the new user:

- full access to `HKEY_LOCAL_MACHINE\SOFTWARE\Candle`
- read access to `HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Perflib`

The user that starts the Monitoring Agent for Windows OS – Primary service must have rights to manage the Monitoring Agent for Windows OS - Watchdog service. The user that starts the Monitoring Agent for Windows OS - Watchdog service must also have rights to manage any services that are managed by the Agent Management Services, including the Monitoring Agent for Windows OS – Primary service. Use Group Policy, Security Templates or Subinacl.exe to grant users the authority to manage system services in Windows. For detailed information, see the following Microsoft documentation athttp://support.microsoft.com/kb/325349.

The following example uses the security templates:

1. Click **Start** ->**Run**, enter `mmc` in the Open box, and then click **OK**.
2. On the File menu, click **Add/Remove Snap-in**.
3. Click **Add -> Security Configuration and Analysis**, and then click **Add** again.
4. Click **Close** and then click **OK**.
5. In the console tree, right-click **Security Configuration and Analysis**, and then click **Open Database**.
6. Specify a name and location for the database, and then click **Open**.
7. In the Import Template dialog box that is displayed, click the security template that you want to import, and then click **Open**.
8. In the console tree, right-click **Security Configuration and Analysis**, and then click **Analyze Computer Now**.
9. In the Perform Analysis dialog box that is displayed, accept the default path for the log file that is displayed in the Error log file path box or specify the location that you want, and then click **OK**.
10. After the analysis is complete, configure the service permissions as follows:
    a. In the console tree, click **System Services**.
    b. In the right pane, double-click the Monitoring Agent for Windows OS - Primary service.
    c. Select the **Define this policy in the database** check box, and then click **Edit Security**.
    d. To configure permissions for a new user or group, click **Add**.
    e. In the Select Users, Computers, or Groups dialog box, type the name of the user or group that you want to set permissions for, and then click **OK**. In the Permissions for User or Group list, select the **Allow** check box next to the **Start** button, stop and pause permission is selected by default. This setting permits the user or group to start, stop, and pause the service.
    f. Click **OK** two times.
11. Repeat step 10 selecting the Monitoring Agent for Windows OS - Watchdog service.
12. To apply the new security settings to the local computer, right-click **Security Configuration and Analysis**, and then click **Configure Computer Now**.

Note: You can use also the Secedit command-line tool to configure and analyze system security. For more information about Secedit, click **Start** -> **Run**, enter `cmd` in the Open box, and then click **OK**. At the command prompt, type `secedit /?`, and then press **ENTER**. Note that when you use this method to apply settings, all

the settings in the template are reapplied, and this may override other previously configured file, registry, or service permissions.

Use the Windows Services console to set the OS Agent and watchdog services to log on using the non Administrator user.

1. Click **Start** -> **Run**, enter `services.msc` in the Open box, and then click **OK**.
2. Select **Monitoring Agent for Windows OS - Primary**.
3. Right-click **Properties**.
4. Verify the startup type as being Automatic.
5. Select the **Log On** tab, and then select **Log on as "This account"** and supply the ID and password. Click **OK**.
6. Select **Monitoring Agent for Windows OS - Watchdog**.
7. Right-click **Properties**.
8. Verify the startup type as being Manual.
9. Select the **Log On** tab, and then select **Log on as "This account"** and supply the ID and password. Click **OK**.

Setting up the agent in a cluster environment

You can install and set up the monitoring agent in a Microsoft Cluster Server environment by following these instructions.

The *IBM Tivoli Monitoring Installation and Setup Guide* contains an overview of clustering. This agent monitors information that is both affected (shared disks, processes ...) and not affected (memory, CPU ...) by cluster resources as the resources are failed over from node to node in the cluster. Therefore, the agent actively runs on all nodes in the cluster. The agent was not modified to distinguish the differences between cluster affected and non-affected resources. History for those attributes that can move from node to node is only maintained for the time that the node owns the resource.

Resources not currently owned by the node might not show at all or may show with values of zero. In most cases the information is not shown on the node that does not own the resource. The physical disk attributes are examples of a monitored resource. The node that does not own the resource shows the disk but the attributes value as Zero while the logical disk information and attributes are only shown by the owning node. When the logical disk fails over, the system interface and the agent require an amount of time to discover the fail over.

Monitor the system log for cluster services entries by specifying the following values:

1. The Attribute Group equal to NT_Event_Log
2. Attribute Item: Log Name (Unicode) equal to System (case sensitive)
3. Attribute Item: Source equal to source of the log entry, for example ClusSvc
4. Attribute Item: Category equal to source of the log entry, for example Failover Mgr
5. Attribute Item: Event ID equal to the desired cluster eventID, for example:
   - 1201 - the cluster service brought the resource group online
   - 1204 - the cluster service brought the resource group offline

Processing missed Windows Event Log events

Whenever you have situations that monitor the Windows Event Log and you do not want to lose events that might occur when the Windows OS agent is stopped or situations are stopped, you can set environment variables to process the missed events.

This function is by default disabled, so you must set one or more environment variables in the KNTENV file. These environment variables provide a mechanism for you to ensure that the monitoring server and portal server are not flooded with events if the agent is shut down or situations are stopped for long periods of time and then restarted:

- Missed Events by Time Interval

  Apply to all event logs:

  – NT_LOG_MAX_TIME=*x*

  Apply to each log separately:

  – NT_{*Event Log Name*}_LOG_MAX_TIME=*x*

  When *x* is a positive value in minutes:

  – *x* = 0, disabled, do not process missed events while the agent is shut down or a situation is stopped.

  – *x* = 1, process all missed events while the agent was shut down or a situation is stopped.

  – *x* > 1, process all missed events that are within the value specified in minutes.

  For example, if *x*=120, then at startup of the agent, only events that are within 120 minutes of the current machine time are processed that were received while the agent was shut down or a situation is stopped.

  You must specify the exact name of the event log you want to monitor. The Windows Registry Editor lists the event log name as a key in either of two paths:

  – `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Eventlog`

  – `HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\WINEVT\Channels`

  The name of the event log is the key listed under the Eventlog or Channels key. For example, the Application event log has the key:

  – `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Eventlog\Application`

  Applying the Event Log Name to the environment variable, NT_{*Event Log Name*}_LOG_MAX_TIME, requires the conversion of any invalid characters within the Event Log Name to a dash (-). Invalid characters include a space ( ), asterisk (*), pound sign (#), vertical bar (|), back slash (\), forward slash (/), colon (:), quotation mark ("), less than sumbol (<), greater than symbol (>), and question mark (?). For example, if the Event Log Name is Microsoft-Windows-TaskScheduler/Operational, then the environment variable to use in the KNTENV file would be NT_Microsoft-Windows-TaskScheduler-Operational_LOG_MAX_TIME=*x* where *x* is defined above and the forward slash (/) was changed to a dash (-).

- Missed Events by Maximum Count

  Apply to all event logs:

  – NT_LOG_MAX_EVTS=*x*

  Apply to each log separately:

  – NT_{*Event Log Name*}_LOG_MAX_EVTS=*x*

Where *x* is a positive value specifying a maximum count of events to process.

- *x* = 0, disabled, do not process missed events while the agent is shut down or a situation is stopped.
- *x* = 1, process all missed events while the agent was shut down or a situation is stopped.
- *x* > 1, process missed events while the agent was shut down or a situation is stopped for a maximum of *x* events.

You must specify the exact name of the event log you want to monitor. The Windows Registry Editor lists the event log name as a key in either of two paths:

- `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Eventlog`
- `HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\WINEVT\Channels`

The name of the event log is the key listed under the Eventlog or Channels key. For example, the Application event log has the key:

- `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Eventlog\Application`

Applying the Event Log Name to the above environment variable, NT_{*Event Log Name*}_MAX_EVTS, requires the conversion of any invalid characters within the Event Log Name to a dash (-). Invalid characters include a space ( ), asterisk (*), pound sign (#), vertical bar (|), back slash (\), forward slash (/), colon (:), quotation mark ("), less than sumbol (<), greater than symbol (>), and question mark (?). For example, if the Event Log Name is Microsoft-Windows-TaskScheduler/Operational, then the environment variable to use in the `KNTENV` file would be NT_Microsoft-Windows-TaskScheduler-Operational_LOG_MAX_EVTS=*x* where *x* is defined above and the forward slash (/) was changed to a dash (-).

Define one or more of the above environment variables with a non-zero value in the `KNTENV` file, and then restart the Windows OS agent. When the agent is restarted, you will see situation events triggered for Windows Event Log events that were missed because they occurred after the agent or the situation was last stopped.

Both sets of environment variables can be used together. In this way, you can process a maximum number of events received while the agent was shut down or a situation is stopped, along with the time interval that the event must fall within. Any of the environment variables that apply separately to the Windows Event Logs override the environment variables NT_LOG_MAX_TIME and NT_LOG_MAX_EVTS for that specified event log. The processing of missed events for a specific Windows Event Log while a situation is stopped requires that all situations running against the specific Windows Event Log be stopped along with historical data collection for the Event Log group.

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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