IBM Tivoli Monitoring Version 6.3 Fix Pack 2

IBM i OS Agent Troubleshooting Guide



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Note

Before using this information and the product it supports, read the information in "Notices" on page 29.

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. Troubleshooting

Troubleshooting, or problem determination, is the process of determining why a certain product is malfunctioning.

Note: You can resolve some problems by ensuring that your system matches the system requirements listed in the *IBM Tivoli Monitoring IBM i OS Agent Installation and Configuration Guide*.

See the following documents for general information about using the product:

- IBM Tivoli Monitoring Troubleshooting Guide
- IBM Tivoli Monitoring Administrator's Guide
- IBM Tivoli Monitoring User's Guide

Gathering product information for IBM Software Support

Before contacting IBM[®] Software Support about a problem you are experiencing with this product, gather the following information that relates to the problem:

Information type	Description
Log files	Collect trace log files from failing systems. See Chapter 2, "Configuring trace logging," on page 3 for lists of all trace log files and their locations. See the <i>IBM Tivoli Monitoring User's Guide</i> for general information about the IBM Tivoli Monitoring environment.
Operating system	Operating system version number and patch level
Messages	Messages and other information displayed on the screen
Version numbers for IBM Tivoli Monitoring	Version number of the components of the IBM Tivoli Monitoring monitoring environment.

Table 1. Information to gather before contacting IBM Software Support

Upload files for review to the following FTP site: ftp.emea.ibm.com. Log in as **anonymous** and place your files in the directory that corresponds to the IBM Tivoli Monitoring component that you use.

Built-in troubleshooting features

The primary troubleshooting feature in the IBM Tivoli Monitoring: IBM i OS Agent is logging. *Logging* refers to the text messages and trace data generated by the IBM Tivoli Monitoring: IBM i OS Agent. Messages are sent to the agent's message queue and a file is used to store trace data.

Trace data captures transient information about the current operating environment when a component or application fails to operate as designed. IBM Software Support personnel use the captured trace information to determine the source of an error or unexpected condition. See Chapter 2, "Configuring trace logging," on page 3 for more information.

Problem classification

The following types of problems might occur with the IBM Tivoli Monitoring: IBM i OS Agent:

- Installation and configuration
- · General usage and operation
- Display of monitoring data

• Take Action commands

Troubleshooting process

Use the following process to determine the source of problems in Monitoring Agent for IBM i OS:

- 1. View the message queue for the agent by entering the DSPOMALOG command on an IBM i OS command line.
- 2. When you want further information about an item that you see in the message queue, view the trace logs that are described in Chapter 2, "Configuring trace logging," on page 3.
- 3. Some problems leave messages in the agent's job log. The agent's job log can be viewed by:
 - a. Enter the command WRKUSRJOB USER(QAUTOMON) on an IBM i OS command line to see the list of active and completed agent jobs. The agent jobs have the name CT_AGENT.
 - b. If an agent's job in the list shows a status of ACTIVE then the job log can be viewed using option 5, Work with, then option 10, Display job log.
 - **c.** If an agent's job in the list shows a status of OUTQ then the job log can be viewed using option 5, Work with, then option 4, Work with spooled files, then option 5, Display.
- 4. Some problems initiate dumps of information or print data areas for debugging purposes. These dumps and print files are saved as spool files for the QAUTOMON user profile. They can be viewed by entering the command 'WRKSPLF SELECT(QAUTOMON)' on an IBM i OS command line. The names of the spool files help to indicate their contents. Some names you might see include:
 - QPJOBLOG -- job log for a completed job
 - QPRINT -- standard output from a job
 - QPSRVDMP -- dump file (possibly from DMPOBJ, Dump Object command)

Chapter 2. Configuring trace logging

Trace logs capture information about the operating environment when component software fails to operate as intended. The principal log type is the RAS (Reliability, Availability, and Serviceability) trace log. These logs are in the English language only. The RAS trace log mechanism is available for all components of IBM Tivoli Monitoring.

Note: The documentation refers to the RAS facility in IBM Tivoli Monitoring as "RAS1".

The member KBBENV in file QAUTOTMP/KMSPARM stores the variables for trace logging in Monitoring Agent for IBM i OS. By default, trace logs are stored in the **QAUTOTMP** library.

For more information on the complete set of trace logs that are maintained on the monitoring server, see the *IBM Tivoli Monitoring Installation and Setup Guide*.

IBM Software Support uses the information captured by trace logging to trace a problem to its source or to determine why an error occurred. The default configuration for trace logging, such as whether trace logging is enabled or disabled and trace level, depends on the source of the trace logging. Trace logging is always enabled.

To learn how to configure and use trace logging, seee the following sections:

- "Managing log files"
- "Targeting which modules to trace" on page 4
- "Using trace logs" on page 4

Managing log files

By default, trace log data goes to three files (KA4AGENT01, KA4AGENT02, and KA4AGENT03) that are defined by the following configuration variable:

KBB_RAS1_LOG=(QAUTOTMP/KA4AGENT01 QAUTOTMP/KA4AGENT02 QAUTOTMP/KA4AGENT03)\
INVENTORY=QAUTOTMP/KA4RAS.INV LIMIT=5 PRESERVE=1

The files are used as follows:

- 1. The files fill with trace log data in order:
 - a. The KA4AGENT01 file receives trace log data until it reaches the size of 5 MB, the default setting defined by the LIMIT=5 parameter.
 - b. The KA4AGENT02 file receives trace log data until it reaches the size of 5 MB.
 - c. The KA4AGENT03 file receives trace log data until it reaches the size of 5 MB.
- 2. Trace logging continues in the second log file, KA4AGENT02. The **PRESERVE=1** setting prevents the overwriting of the first log file.
- **3.** When you want to troubleshoot the monitoring agent, refer to the time stamp of the three trace log files. The most recent file could be any of the three files, depending on when trace logging transferred from one file to the other.

You can modify the KBB_RAS1_LOG variable to modify logging behavior. You must ensure that QAUTOMON has sufficient authority to access the files if you use a library other than QAUTOTMP.

- **PRESERVE parameter:** You can configure logging to preserve the initial log file, which contains useful startup information. The default is 1, which means that the first log file is never overwritten when logs roll.
- LIMIT parameter: You can configure logging to have a different maximum size of files in MB (LIMIT).

Note: Do not configure the LIMIT setting to be greater than 100 MB. On IBM i OS, when file size reaches 100 MB, the process associated with the file is suspended, and the system sends notification to the system administrator. Monitoring stops and the file size status must be resolved manually.

Targeting which modules to trace

The type of trace messages to log and which modules to log messages for are controlled by configuration settings. By default the KBB_RAS1=ERROR configuration setting logs the trace statements for type "Error" in all the modules.

The modules written specifically for the IBM i OS agent have names staring with 'ka4', and modules common to agents have names starting with 'kra', 'kbb', 'kdc', and others. The following setting logs all the trace statements for all the modules starting ka4 and kra. KBB RAS1=ERROR (UNIT:KA4 ALL) (UNIT:KRA ALL)

The ka4 and kra strings are wild cards in this statement. You can also enter the names of individual modules in a UNIT statement.

For maximum efficiency (including during agent shutdown), when no agent function investigation is needed, you could disable all tracing by setting KBB_RAS1=NONE.

Using trace logs

Typically IBM Software Support applies specialized knowledge to analyze trace logs to determine the source of problems. However, you can view trace logs to learn some basic facts about your IBM Tivoli Monitoring environment.

Chapter 3. Problems and workarounds

The known problems and workarounds are organized into types of problems that might occur with an agent, for example installation and configuration problems and workspace problems.

You can resolve some problems by ensuring that your system matches system requirements. The most up-to-date requirements are in the Software product compatibility reports (http://publib.boulder.ibm.com/infocenter/prodguid/v1r0/clarity/index.html).

For general troubleshooting information, see the IBM Tivoli Monitoring Troubleshooting Guide.

Agent troubleshooting

Table 2 provides agent-specific troubleshooting information. For general troubleshooting information, see the *IBM Tivoli Monitoring Troubleshooting Guide*.

Problem Solution
 The IBM i OS monitoring agent fails to install or uninstall on a Japanese Katakana/Kanji system in some codepage environments. The install or uninstall program might not work correctly on systems where the job CCSID is 5026 or 290, which are typical Japanese Katakana/Kanji systems. Other languages (job CCSIDs) that might be affected include Simplified Chinese (935, 1388), Traditional Chinese (937, and Korean (933). Symptoms of the failed install or uninstall or CCSID and default CCSID using DSPJOB, option 2. For example: Coded character set identifier : xxxx Default coded character set identifier . : yyyy Change the job CCSID. Change the job CCSID. Run the install or uninstall command. Restore the original CCSID and default include message id CPF3D95, messages in the job log that indicate "object not found", or an IFS directory that has incorrect characters in the path name. Chald CCSID (37) Run the install or uninstall or uninstall command. Restore the original CCSID with the following commands. It is important to change to the default job CCSID before changing to the original job CCSID so that the IGC job attribute is properly reset. CHGJOB CCSID(yyyy) CHGJOB CCSID(xxxx)

Table 2. Agent problems and solutions

Table 2. Agent problems and solutions (continued)

Problem	Solution
A configured and running instance of the monitoring agent is not displayed in the Tivoli Enterprise Portal, but other instances of the monitoring agent on the same system do appear in the portal.	Tivoli [®] Monitoring products use Remote Procedure Call (RPC) to define and control product behavior. RPC is the mechanism that allows a client process to make a subroutine call (such as GetTimeOfDay or ShutdownServer) to a server process somewhere in the network. Tivoli processes can be configured to use TCP/UDP, TCP/IP, SNA, and SSL as the desired protocol (or delivery mechanism) for RPCs.
	"IP.PIPE" is the name given to Tivoli TCP/IP protocol for RPCs. The RPCs are socket-based operations that use TCP/IP ports to form socket addresses. IP.PIPE implements virtual sockets and multiplexes all virtual socket traffic across a single physical TCP/IP port (visible from the netstat command).
	A Tivoli process derives the physical port for IP.PIPE communications based on the configured, well-known port for the HUB Tivoli Enterprise Monitoring Server. (This well-known port or BASE_PORT is configured using the 'PORT:' keyword on the KDC_FAMILIES / KDE_TRANSPORT environment variable and defaults to '1918'.)
	The physical port allocation method is defined as (BASE_PORT + 4096*N) where N=0 for a Tivoli Enterprise Monitoring Server process and N={1, 2,, 15} for a non-Tivoli Enterprise Monitoring Server. Two architectural limits result as a consequence of the physical port allocation method:
	 No more than one Tivoli Enterprise Monitoring Server reporting to a specific Tivoli Enterprise Monitoring Server HUB can be active on a system image. No more that 15 IP.PIPE processes can be active on a single system image.
	A single system image can support any number of Tivoli Enterprise Monitoring Server processes (address spaces) provided that each Tivoli Enterprise Monitoring Server on that image reports to a different HUB. By definition, there is one Tivoli Enterprise Monitoring Server HUB per monitoring Enterprise, so this architecture limit has been simplified to one Tivoli Enterprise Monitoring Server per system image.
	No more that 15 IP.PIPE processes or address spaces can be active on a single system image. With the first limit expressed above, this second limitation refers specifically to Tivoli Enterprise Monitoring Agent processes: no more that 15 agents per system image.
	This limitation can be circumvented (at current maintenance levels, IBM Tivoli Monitoring V6.1 Fix Pack 4 and later) if the Tivoli Enterprise Monitoring Agent process is configured to use EPHEMERAL IP.PIPE. (This is IP.PIPE configured with the 'EPHEMERAL:Y' keyword in the KDC_FAMILIES / KDE_TRANSPORT environment variable). There is no limitation to the number of ephemeral IP.PIPE connections per system image. However, EPHEMERAL endpoints are restricted: data warehousing cannot be performed on an ephemeral endpoint.
The monitoring agent does not connect to the monitoring server. CT_CMS is enclosed within parentheses like this: CT_CMSLIST="IP.PIPE:(10.25.97.62); IP:(10.25.97.62)	Reconfigure the agent by specifying the monitoring server's TCP/IP address as *NONE. Also specify the monitoring server's IP.PIPE address to the IP address of the monitoring server. Leave the Firewall in use parameter set to *YES. After reconfiguring and restarting the agent, the agent should connect to the monitoring server correctly.
<pre>instead of being like this CT_CMSLIST="IP.PIPE:#10.25.97.62; IP:#10.25.97.62</pre>	

Problem	Solution			
The monitoring agent is not able to start, and the log file states there is a communication error.	Specify the monitoring server's IP address in the IP.PIPE setting.			
CT_AGENT Job logs are not created.	Job Logs are not produced if there are no exceptions encountered while the agent running. However, if the job logs are needed there are 2 solutions tha force the agent to produce job logs.			
	Change the Message Logging level on job QAUTOMON/QAUTOMON from:			
	Level			
	 to: Level			
There is a length inconsistency with OS400_Message.Key.	The OS400_Message.Key length is 5 character values, and IBM i OS uses 4 character values. The first 2 bytes need to be ignored if the customized program is used to reply to the messages. This monitoring agent provides the RPYMSG CL program in the QAUTOMON library that can be used to reply to messages from Take Actions. You can retrieve and use the source of the CL program to customize it according to your needs. For more information on the Take Action commands, see the <i>IBM Tivoli Monitoring IBM i OS Agent Reference</i> .			
When you edit the configuration for an existing monitoring agent, the values displayed are not correct.	The original configuration settings might include non-ASCII characters. These values were stored incorrectly and result in the incorrect display. Ente new values using only ASCII characters.			
Attributes do not allow non-ASCII input in the situation editor.	None. Any attribute that does not include "(Unicode)" might support only ASCII characters. For example "Attribute (Unicode)" will support unicode but "Attribute" without "(Unicode)" might only support ASCII characters.			
Historical reporting fails.	The location of short-term history files depends on the configuration variable CTIRA_HIST_DIR in the QAUTOTMP/KMSPARM(KBBENV) file. The default value is CTIRA_HIST_DIR=/QIBM/USERDATA/IBM/ITM/HIST.			
	If you change the CTIRA_HIST_DIR variable to another directory, you must do the following to ensure success of historical data collection:			
	• Create the directory in Integrated File System (IFS).			
	• Give QAUTOMON read, write, and execute (*RWX) access to the new directory.			

Table 2. Agent problems and solutions (continued)

Table 2. Agent problems and solutions (continued)

Problem	Solution			
You see the following message when	This problem occurs whenever the following situations stop:			
you select Display Tivoli	 Any situation based on the APPN topology attributes 			
Function check. MCH2002 unmonitored by QNMDRGTI at	• All situations, when agents lose connection to the monitoring server (In this case, all situations are automatically stopped.)			
statement *N instruction X'0024	These messages are generated during the cleanup process for a stopped situation. For example, in the case of APPN topology attributes, threads are used in QNMDRGTI and must be cleaned up. These messages are harmless and you can ignore them. To restore monitoring activity, restart the agent or restore connectivity with the monitoring server, as appropriate.			
	The following excerpt shows related information from the joblog of the CT_Agent job. You can also ignore this information:			
	Event monitor does not exist. Dump output directed to spooled file 1, job 304099/QAUTOMON/CT_AGENT created on system MINERVA on 09/05/05 13:08:35. The requested information cannot be dumped. Dump output directed to spooled file 3, job 304099/QAUTOMON/CT_AGENT created on system MINERVA on 09/05/05 13:08:37. Software problem data for QNMDRGTI has been detected. Event monitor does not exist. Function check. MCH2002 unmonitored by QNMTIXT at statement *N, instruction X'001A'.			
The user account used for reflex automation commands is invalid.	QAUTOMON is the default user that is used to execute reflex automation of Take Action commands. To change this assignment, set the Action user profile in Configure Tivoli Monitoring: IBM i Agent to different value. The valid values are QAUTOMON or a value that starts with an asterisk (*). If you set a value starting with an asterisk, like *SIT , the user who created the situation is used to run the reflex automation commands. To assign a user other than QAUTOMON, create a user with that name on the Tivoli Enterprise Portal. Log in using that user ID and create a situation is started and triggered, the action configured in that situation is executed under the user who created the situation.			
High CPU utilization by the	Check for the following problems:			
CT_AGENT job.	1. Some situations may be causing the monitoring agent to drive more data collection. To identify such situations,			
	a. Stop all the custom situations and uncheck "Run at startup".			
	b. Start the monitoring agent with only product provided situations and verify the CPU utilization.			
	c. If the CPU utilization is normal , start one situation at a time and verify the process.			
	2. Historical data collection may be causing the agent to have high CPU use.			
	a. Confirm the historical data being collected is required. There is no need to collect all the data that is available, unless it is being used.			
	b. Consider increasing the time between historical data collections. For items such as installed software a daily, weekly or even monthly interval might prove sufficient.			
	Continue this process for all the situations until you identify the situation that is causing the CT_AGENT job to consume high CPU. Correct the situations by changing the formula or increasing the interval to consume fewer CPU cycles.			

Table 2. Agent problems and solutions (continued)

Problem	Solution
DASD fill with *MGTCOL objects and objects in QMPGDATA library.	This can be reduced to some extent by not collecting the data as frequently as set for various types of resources other than defaults using the configuration variables in QAUTOTMP/KMSPARM(KBBENV).
	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
Monitoring Agent for IBM i OS crashes with more jobs on the system or the data not displayed on Tivoli Enterprise Portal quickly.	Systems running with large number of jobs is the major cause of failures or the poor response. The following configuration variables in QAUTOTMP/KMSPARM(KBBENV) can be used to reduce the number of jobs being monitored:
	• KA4_JOB_COUNT=20480 By default, it allocates space for 20480 jobs, can be increased to higher value on systems with more jobs.
	• KA4_LJOB_NAME=*ALL JOB NAME FILTER , Any name with maximum of 10 chars.
	• KA4_LJOB_USER=QUSER JOB USER FILTER , Any name with maximum of 10 chars.
	• KA4_LJOB_NBR=*ALL JOB NUMBER FILTER , Any 6 digit number.
	• KA4_LJOB_TYPE=* JOB TYPE 1 char valid values * A B I M R S W X
	<pre>* This value lists all job types. A The job is an autostart job. B The job is a batch job. I The job is an interactive job. M The job is a subsystem monitor job. R The job is a spooled reader job. S The job is a system job. W The job is a spooled writer job. X The job is the start-control-program-function (SCPF) system job.</pre>
	• KA4_LJOB_STS=*ACTIVE JOB TYPE 10 char Valid Values *ACTIVE *JOBQ *OUTQ *ALL
You receive a message saying that the CPF3CAA-List is too large for a user space. This indicates that the query or situation needs to be filtered using both the change to the library list as well as a change in the QAUTOTMP/KMSPARM file.	Change the QAUTOMON job description in the *USRLIBL portion of the CT_AGENT job, adding any libraries that contain files you want to monitor. Change KA4_OBJFLT_LIB=*ALL to KA4_OBJFLT_LIB=*USRLIBL in the QAUTOTMP/KMSPARM file, and then restart the agent. You should then be able to use the situation to compare the changed date/time to the localtimestamp. This change limits the amount of objects that are retrieved to the *USRLIBL portion of the CT_AGENT job library list, which also limits the CPU and I/O when using the IBM i OS system API to only those that are found in the
	*USRLIBL portion of the library list.

Unique names for monitoring components

If you have multiple instances of a monitoring agent, you must decide how to name the monitoring agents. This name is intended to uniquely identify that monitoring agent. The agent's default name is composed of three qualifiers:

- Optional instance name
- Machine network hostname
- Agent product node type

An agent name truncation problem can occur when the network domain name is included in the network hostname portion of the agent name. For example, instead of just the hostname myhost1 being used, the

resulting hostname might be myhost1.acme.north.prod.com. Inclusion of the network domain name causes the agent name in the example above to expand to SERVER1:myhost1.acme.north.prod.com:KXX. This resulting name is 39 characters long. It is truncated to 32 characters resulting in the name SERVER1:myhost1.acme.north.prod.

The agent name truncation is only a problem if there is more than one monitoring agent on the same system. In this case, the agent name truncation can result in collisions between agent products attempting to register using the same truncated name value. When truncated agent names collide on the same system, this can lead to Tivoli Enterprise Monitoring Server problems with corrupted EIB tables. The agent name collision in the Tivoli Enterprise Monitoring Server might cause a registered name to be associated with the wrong product.

In general, create names that are short but meaningful within your environment. Use the following guidelines:

- Each name must be unique. One name cannot match another monitoring agent name exactly.
- Each name must begin with an alpha character.
- Do not use blanks or special characters, including \$, #, and @.
- Each name must be between 2 and 32 characters in length.
- Monitoring agent naming is case-sensitive on all operating systems.

Create the names by completing the following steps:

- 1. Open the configuration file for the monitoring agent, which is located in the following path:
 - On Windows: *install_dir*\tmaitm6\Kproduct_codeCMA.INI. For example, the product code for the Monitoring Agent for Windows OS is NT file name for is KNTCMA.INI.
 - On UNIX and Linux: *install_dir*/tmaitm6/*product_code*.ini and *product_code*.config. For example, the file names for the Monitoring Agent for UNIX OS is ux.ini and ux.config.
- 2. Find the line the begins with CTIRA_HOSTNAME=.
- **3.** Type a new name for host name that is a unique, shorter name for the host computer. The final concatenated name including the subsystem name, new host name, and A4, cannot be longer than 32 characters.

Note: You must ensure that the resulting name is unique with respect to any existing monitoring component that was previously registered with the Tivoli Enterprise Monitoring Server.

- 4. Save the file.
- 5. Restart the agent.
- **6.** If you do not find the files mentioned in Step 1, perform the workarounds listed in the next paragraph.

If you do not find the files mentioned in the preceding steps, perform the following workarounds:

- 1. Change CTIRA_HOSTNAME environment variable in the configuration file of the monitoring agent.
 - Find the KA4ENV file in the same path mentioned in the preceding row.
 - For z/OS[®] agents, find the **RKANPAR** library.
 - For IBM i OS agents, find the QAUTOTMP/KMSPARM library in member KBBENV.
- 2. If you cannot find the **CTIRA_HOSTNAME** environment variable, you must add it to the configuration file of the monitoring agent:
 - On Windows: Use the Advanced > Edit Variables option.
 - On UNIX and Linux: Add the variable to the config/*product_code*.ini and to config/ *product_code*.config files.
 - On z/OS: Add the variable to the RKANPAR library, member Kproduct_codeENV.
 - On IBM i OS: Add the variable to the QAUTOTMP/KMSPARM library in member KBBENV.

3. Some monitoring agents (for example, the monitoring agent for MQ Series) do not reference the **CTIRA_HOSTNAME** environment variable to generate component names. Check the documentation for the monitoring agent that you are using for information on name generation. If necessary, contact IBM Software Support.

Workspace troubleshooting

Table 3 describes problems that might occur with workspaces. For general troubleshooting information, see the *IBM Tivoli Monitoring Troubleshooting Guide*.

Problem	Solution			
You see the following message: KFWITM083W Default link is disabled for the selected object; please verify link and link anchor definitions.	You see this message because some links do not have default workspaces. Right-click the link to access a list of workspaces to select.			
The name of the attribute does not display in a bar chart or graph view.	When a chart or graph view that includes the attribute is scaled to a small size, a blank space is displayed instead of a truncated name. To see the name of the attribute, expand the view of the chart until there is sufficient space to display all characters of the attribute's name.			
At the bottom of each view, you see the following Historical workspace KFWITM220E error: Request failed during execution .	Ensure that you configure all groups that supply data to the view. In the Historical Configuration view, ensure that data collection is started for all groups that supply data to the view.			
You start collection of historical data but the data	Managing options for historical data collection:			
cannot be seen.	• Basic historical data collection populates the Warehouse with raw data. This type of data collection is turned off by default. See the <i>IBM Tivoli Monitoring IBM i OS Agent Installation and</i> <i>Configuration Guide</i> for information on managing this feature including how to set the interval at which data is collected. By setting a more frequent interval for data collection you reduce the load on the system incurred every time data is uploaded.			
	• You use the Summarization and Pruning monitoring agent to collect specific amounts and types of historical data. Be aware that historical data is not displayed until the Summarization and Pruning monitoring agent begins collecting the data. By default, this agent begins collection at 2 AM daily. At that point, data is visible in the workspace view. See the IBM Tivoli Monitoring Administrator's Guide to learn how to modify the default collection settings.			

Table 3. Workspace problems and solutions

Table 3. Workspace	problems al	nd solutions	(continued)
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Problem	Solution	
Messages and Spool workspace does not display data.	The views based on the Message attribute group such as Operator Message view and Managed Systems for i5/OS[™] Log display the data based on the time span set for those views. By default it displays messages for last 2 hours. To change this behavior, click the Timespan icon on the left hand corner of the view on Tivoli Enterprise Portal. The time zone between System i [®] server and Tivoli Enterprise Portal Server also affects the dat collected on these views. Consider the following scenario:	
	• Monitoring Agent for IBM i OS runs on a System i server which is operating in the Pacific time zone.	
	• The Tivoli Enterprise Portal Server runs in the Central time zone.	
	In this scenario, the data might not be displayed in the Messages views. Change the Timespan setting accordingly to enable the Tivoli Enterprise Portal to show the data. Note: If you assign a Timespan of the last 24 hours, you would satisfy all time zones. However, this setting would increase the overhead if both systems are in same time zone and are slightly different.	
Unable to view data for a default query in a workspace	 A default query should display data when it is assigned to the view on the workspace. However, if this is a view that has links, such as the Licensed Program Products workspace, a link must be selected in order to see the data in the workspace. Some functions require grapting the OAUTOMON user ID. 	
	additional privileges.	
No data displayed for IOA Cache Battery	 Install any missing PTFs. The system may not have IO adapters with batteries. To check if the system has storage adapters with batteries, use the IBM i OS function in Dedicated Service ToolsSTRDST. 	

Situation troubleshooting

Table 4 lists problems that might occur with specific situations.

Problem	Solution
A situation formula that uses an enumerated value beginning with an * triggers on unexpected values. For example, a situation monitoring subsystems with a formula that checks for *ACTIVE also triggers for subsystems that are *INACTIVE.	The IBM i OS uses a leading * to signify special values. IBM Tivoli Monitoring uses a leading * to indicate a wildcard character in situation formulas. Using a leading * might result in some enumerated values where one special value is a substring of another special value. For example, a situation formula that specifies KA4SBS.STATUS == *ACTIVE will trigger for subsystems that are both *ACTIVE and *INACTIVE. The * is considered a wildcard in the formula and "== *ACTIVE" matches both *ACTIVE and *INACTIVE. Other common examples of special values with these characteristics include: *NORMAL and *ABNORMAL (i5/OS Inactive Job - Completion Status) *PGM and *SRVPGM (OS400 Object - Type)
	To resolve this problem, change the formula to use the != operator and use the longer special value. In the above example, change the formula to specify KA4SBS.STATUS != *INACTIVE. This formula is equivalent to KA4SBS.STATUS == *ACTIVE and prevents the * wildcard from matching both special values. Note: This scenario applies to situations only, not queries.
You want to change the appearance of situations when they are displayed in a Workspace view.	 Right-click an item in the Navigation tree. Select Situations in the pop-up menu. The Situation Editor window is displayed. Select the situation that you want to modify. Use the Status pull-down menu in the lower right of the window to set the status and appearance of the Situation when it triggers. Note: This status setting is not related to severity settings in IBM Tivoli Enterprise Console.
You see multiple situation starting and stopping messages in the KMSOMLOG (MSG2) file.	 Multiple situation starting and stopping messages can appear in the agent message console for the following reasons: The Take Action is defined with either a System Command or a Universal Message in the Action tab of the Situation Editor. An embedded situation resides in different attribute groups. Provide situation formulas for the situations with duplicate entries.
Situations are triggered in the Tivoli Enterprise Monitoring Server, but events for the situation are not sent to the Tivoli Enterprise Console [®] server. The Tivoli Enterprise Monitoring Server is properly configured for event forwarding, and events for many other situations are sent to the event server.	This condition can occur when a situation is only monitoring the status of other situations. The event forwarding function requires an attribute group reference in the situation in order to determine the correct event class to use in the event. When the situation only monitors other situations, no attribute groups are defined and the event class cannot be determined. Because the event class cannot be determined, no event is sent. This is a limitation of the Tivoli Enterprise Monitoring Server event forwarding function. Situations that only monitor other situations do not send events to the event server.
Monitoring activity requires too much disk space.	Check the RAS trace logging settings that are described in Chapter 2, "Configuring trace logging," on page 3. For example, trace logs grow rapidly when you apply the ALL logging option.

Table 4. Specific situation problems and solutions (continued)

Problem	Solution
Monitoring activity requires too many system resources.	Table 5 on page 15 describes the performance impact of specific attribute groups. If possible, decrease your use of the attribute groups that require greater system resources.
A formula that uses mathematical operators appears to be incorrect. For example, if you were monitoring Linux, a formula that calculates when Free Memory falls under 10 percent of Total Memory does not work: LT #'Linux_VM_Stats.Total_Memory' / 10	This formula is incorrect because situation predicates support only logical operators. Your formulas cannot have mathematical operators. Note: The Situation Editor provides alternatives to math operators. Regarding the example, you can select % Memory Free attribute and avoid the need for math operators.
You see the "Unable to get attribute name" error in the Tivoli Enterprise Monitoring Server log after creating a situation.	 Install the agent's application support files on the Tivoli Enterprise Monitoring Server, using the following steps: 1. Open the Manage Tivoli Enterprise Monitoring Services window. 2. Right-click the name of the monitoring server. 3. Select Advanced > Add TEMS Application Support in the pop-up menu. Add application support, if any, for any agent that is missing from the list. See in IBM Tivoli Monitoring Installation and Setup Guide for more information on adding application support.
Security Audit journal based situations don't trigger.	QAUTOMON user needs to have sufficient authority on the journal QSYS/QAUDJRN and the current associated journal receiver for QAUDJRN. Provide *ALL authority for QAUTOMON user on QAUDJRN and the receivers associated with it. Set the system values QAUDLVL & QAUDCTL with appropriate value for the type of audit data to be journaled. DSPSECAUD/CHGSECAUD can be used to verify the current security auditing values. Make sure that journal entries with correct type are journaled to the QAUDJRN journal.
Historical data collection not working on the attributes based on OS400_Securiy_Jrn_* and short term history files are not created in /QIBM/USERDATA/IBM/ITM/HIST directory. Currently, Historical Data collection is only working for few of the OS400_Security_Jrn based journal entry types.	QAUTOMON user needs to have sufficient authority on the journal QSYS/QAUDJRN and the current associated journal receiver for QAUDJRN. Provide *ALL authority for QAUTOMON user on QAUDJRN and the receivers associated with it. Set the system values QAUDLVL & QAUDCTL with appropriate value for the type of audit data to be journaled. DSPSECAUD/CHGSECAUD can be used to verify the current security auditing values. Make sure that journal entries with correct type are journaled to the QAUDJRN journal.
Accounting Journal based situations don't trigger.	QAUTOMON user needs to have sufficient authority on the journal QSYS/QACGJRN and the current associated journal receiver for QACGJRN. Provide *ALL authority for QAUTOMON user on QACGJRN and the receivers associated with it. The system value QACGLVL need to have *JOB for account journaling to work correctly.
Events received at the Tivoli Enterprise Console server from IBM Tivoli Monitoring do not have values for all event attributes (slots) even though the values are visible in workspace views.	The problem is due to a limitation in the IBM Tivoli Monitoring interface code that generates Tivoli Enterprise Console events from situations. The situation results are provided in a chain of buffers of 3000 bytes each. The interface code currently extracts event information from only the first buffer. When situations or agent table data expands into a second buffer, this additional data is not examined, and it is not included in events sent to the Tivoli Enterprise Console server.

Table 4. Specific situation problems and solutions (continued)

Problem	Solution
Situations based on APPN topology attributes don't trigger quickly.	The configuration variable KA4_COMM_SIT_INTERVAL determines the interval for APPN related situations with a default value of 3600 seconds. This can be set in the file QAUTOTMP/KMSPARM member KBBENV. Setting a smaller value for this variable enables triggering of the APPN related situations quickly as required.
The OS400_SNADS_Job_Missing situation, which looks for missing QROUTER jobs, runs continuously.	Set any values to reduce the jobs that are retrieved. Here are the names of the filtering parameters that can be used to reduce the amount of monitored jobs:
	• KA4_LJOB_NAME
	• KA4_LJOB_USER
	• KA4_LJOB_NBR
	• KA4_LJOB_TYPE
	• KA4_LJOB_STS

Performance impact of each attribute group

Table 5 lists the impact on performance (high, medium, or low) of each attribute group. The multiple-instance attributes have been classified at the lowest level. That is, the performance overhead will increase if you do not specify compare values for one or more key values.

When you want to prevent impact on performance by any of the attribute groups listed in Table 5 you must avoid referencing that attribute group, as suggested in this list:

- Disable the attribute group.
- Never select workspaces that reference the attribute group.
- Disable situations that reference the attribute group by using the "Undistributed situations" option in the Situation Editor.
- Disable historical reporting that references the attribute group.
- Avoid using the "Auto Refresh" refresh feature in a Workspace because this option causes a refresh of data for all attribute groups.

See the IBM Tivoli Monitoring User's Guide for additional information on controlling attribute group usage.

Attribute group	High	Medium	Low
Acct_Jrn		-	
Alert			~
APPN_Topology		-	
Auxiliary Storage Pool		-	
Comm_Async		-	
Comm_Bisync		-	
Comm_Ethernet		~	
Comm_SDLC		-	
Comm_Token_Ring		-	
Comm_X25		-	
Controller		~	
Data Queue			~
Device			-

Table 5. Performance Impact by attribute group

Table 5. Performance Impact by attribute group (continued)

Attribute group	High	Medium	Low
Disk_Unit	-		
Database_Member			~
Distribution Queue		-	
History Log	-		
i5 Disk		~	
I/O_Processor		-	
Integrated File System Object	-		
IOA Cache Battery			1
Job	-		
Job Log		-	
Job_Queue		-	
Licensed Program Products			1
Line			1
Management Central		-	
Messages	-		
Miscellaneous			-
Net Server			
Network		-	
Network Interface		-	
Network Server		L	
Object	-		
Output Queue		L	
PTFs		1	
Security_Jrn		-	
Security Jrn AuditJrn		1	
Security Jrn AuthFail			
Security Jrn ChgAuth		-	
Security Jrn ChgOwner			
Security Jrn ChgUserProf			
Security Jrn JobDesc		-	
Security Jrn Network			
Security Jrn Password		-	
Security Jrn ProfSwap		-	
Security Jrn ProgAdopt		-	
Security Jrn RestoreJob			
Security Jrn RestoreProg		1	
Security Jrn SYSVAL			
Spool_File		-	
Storage_Pool			
Subsystem		~	

Table 5. Performance Impact by attribute group (continued)

Attribute group	High	Medium	Low
System Statistics		-	
System_Status			~
System_Values		~	
System Values Acct		-	
System Values Device		~	
System Values IPL		-	
System Values Perf		-	
System Values Prob		-	
System Values User		-	
TCPIP Logical Interface		~	
TCPIP Service			

Problems with configuration of situations

Table 6 lists problems that might occur with situations.

This section provides information for troubleshooting for agents. Be sure to consult the *IBM Tivoli Monitoring Troubleshooting Guide* for more general troubleshooting information.

Table 6. Problems with configuring situations that you solve in the Situation Editor

Problem	Solution			
 Note: To get started with the solutions in this section, perform these steps: 1. Launch the Tivoli Enterprise Portal. 2. Click Edit > Situation Editor. 3. In the tree view, choose the agent whose situation you want to modify. 4. Choose the situation in the list. The Situation Editor view is displayed. 				
The situation for a specific agent is not visible in the Tivoli Enterprise Portal.	Open the Situation Editor. Access the All managed servers view. If the situation is absent, confirm that application support for Monitoring Agent for IBM i OS has been added to the monitoring server. If not, add application support to the server, as described in the <i>IBM Tivoli Monitoring Installation and Setup Guide</i> .			
The monitoring interval is too long.	Access the Situation Editor view for the situation that you want to modify. Check the Sampling interval area in the Formula tab. Adjust the time interval as needed.			
The situation did not activate at startup.	 Manually recycle the situation as follows: 1. Right-click the situation and choose Stop Situation. 2. Right-click the situation and choose Start Situation. Note: You can permanently avoid this problem by placing a check mark in the Run at Startup option of the Situation Editor view for a specific situation. 			
The situation is not displayed.	Click the Action tab and check whether the situation has an automated corrective action. This action can occur directly or through a policy. The situation might be resolving so quickly that you do not see the event or the update in the graphical user interface.			
An Alert event has not occurred even though the predicate has been properly specified.	Check the logs, reports, and workspaces.			
A situation fires on an unexpected managed object.	Confirm that you have distributed and started the situation on the correct managed system.			

Problem	Solution
The product did not distribute the situation to a managed system.	Click the Distribution tab and check the distribution settings for the situation.
The situation does not fire.	In the Formula tab, analyze predicates as follows:
Incorrect predicates are present in the formula that defines the situation. For example, the managed object shows a state that normally triggers a monitoring event, but the situation is not true because the wrong attribute is specified in the formula.	1. Click the <i>fx</i> icon of the Formula area. The Show formula window is displayed.
	 a. Confirm the following details in the Formula area: The attributes that you intend to monitor are specified in the formula. The situations that you intend to monitor are specified in the formula. The logical operators in the formula match your monitoring goal. The numerical values in the formula match your monitoring goal.
	b. (<i>Optional</i>) Click the Show detailed formula check box to see the original names of attributes in the application or operating system that you are monitoring.
	c. Click OK to dismiss the Show formula window.
	2. (<i>Optional</i>) In the Formula area of the Formula tab, temporarily assign numerical values that will immediately trigger a monitoring event. The triggering of the event confirms that other predicates in the formula are valid.
	Note: After you complete this test, you must restore the numerical values to valid levels so that you do not generate excessive monitoring data based on your temporary settings.

Table 6. Problems with configuring situations that you solve in the Situation Editor (continued)

Table 7. Problems with configuration of situations that you solve in the Workspace area

Problem	Solution
Situation events are not displayed in the Events Console view of the workspace.	Associate the situation with a workspace. Note: The situation does not need to be displayed in the workspace. It is sufficient that the situation be associated with any workspace.
You do not have access to a situation.	 Note: You must have administrator privileges to perform these steps. Select Edit > Administer Users to access the Administer Users window. In the Users area, select the user whose privileges you want to modify. In the Permissions tab, Applications tab, and Navigator Views tab, select the permissions or privileges that correspond to the user's role. Click OK.
A managed system seems to be offline.	 Select Physical View and highlight the Enterprise Level of the navigator tree. Select View > Workspace > Managed System Status to see a list of managed systems and their status. If a system is offline, check network connectivity and status of the specific system or application.

Table 8. Proble	ms with confi	iguration of situa	tions that you	l solve in the	Manage Ti	ïvoli Enterprise l	Monitoring 3	Services
window								

Problem	Solution
After an attempt to restart the agents in the Tivoli Enterprise Portal, the agents are still not running.	For UNIX, NetWare, or Windows, log on to the applicable system and perform the appropriate queries.
The Tivoli Enterprise Monitoring Server is not running.	Check the system status and check the appropriate IBM Tivoli Monitoring logs.

Table 8. Problems with configuration of situations that you solve in the Manage Tivoli Enterprise Monitoring Services window (continued)

Problem	Solution
The managed objects you created are firing on incorrect managed systems.	Check the managed system distribution on both the situation and the managed object settings sheets.

IBM i OS troubleshooting

Table 9 lists problems that might occur on the system or application that you are monitoring. See the *IBM Tivoli Monitoring Troubleshooting Guide* for general troubleshooting information.

Table 9. IBM i OS problems and solutions

Problem	Solution
You need to optimize performance by choosing attribute groups that have the least effect on performance.	See "Performance impact of each attribute group" on page 15 and "Reducing the demand for disk space."
You need to monitor inactivity in the IBM i OS files.	The QAUTOTMP library contains the temporary data collected by the IBM Tivoli Monitoring: IBM i OS Agent. The library could be empty if IBM Tivoli Monitoring: IBM i OS Agent has not been started. Display the library to see the current size of the temporary data.
Performance problems with the IBM Tivoli Monitoring: IBM i OS Agent can take the following forms:	The subsystem QAUTOMON uses the *BASE pool. Thus, you might need to tune some parameters related to the *BASE pool if you experience performance problems with the IBM Tivoli Monitoring: IBM i OS Agent.
 Long response time when working with the IBM Tivoli Monitoring: IBM i OS Agent on an NPT Long process time for activating or deactivating situations Long process time for starting or stopping activity programs Connection problems between the managing system and monitoring agents 	 Use the Work with Active Jobs (WRKACTJOB) command and look at the status of the jobs in subsystems QAUTOMON. If one or more of the jobs have status ineligible (INEL), the activity level for the pool might be too small. To avoid this, you can make one or more of these changes. Increase the activity level of the *BASE pool. Increase *BASE pool size. Create another pool for the QAUTOMON jobs. Set the IBM i OS system value QPFRADJ to 2 or 3 so that the system automatically makes changes to improve performance.
 Connection problems between the managing system and the Tivoli Enterprise Portal 	

Reducing the demand for disk space

Some multiple-instance attributes can cause a very large number of sets of data to be gathered. Specifying predicates for additional attributes in the same attribute group might reduce the amount of data that needs to be collected and reduce the performance impact. You must specify key attributes for each of the following functional areas:

Accounting Journal Notification (Acct_Jrn) attributes

Specify one or more of these attributes.

- Acct_Jrn.Job_Name
- Acct_Jrn.User

File Member (DB_Member) attributes

Specify one or more of these attributes.

- DB_Member.Member
- DB_Member.File

• DB_Member.Library

Object (Object) attributes

Specify one or more of these attributes.

- Object.Library
- Object.Name
- Object.Type

Spooled file (Spool_File) attributes

Specify one or more of these attributes.

- Spool_File.Form_Type
- Spool_File.User_Data
- Spool_File.Job_User
- Spool_File.Output_Queue_Name
- Spool_File.Output_Queue_Library

Minimizing the starting and stopping of monitoring

When a situation raises an event, monitoring for the conditions does not stop. Attribute data is collected as long as the situation is active.

If monitoring has not been started for a situation named in an **Evaluate a Situation Now** activity (which is available in policies), monitoring starts when the *EVALUATE_SITUATION activity starts. Monitoring ends when the activity program has analyzed the conditions in the situation.

When possible, use embedded situations rather than the **Evaluate a Situation Now** activity. If you want to use the **Evaluate a Situation Now** activity, start the situation before the *EVALUATE_SITUATION activity begins to lessen performance impact.

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 \rightarrow 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.

• 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
- 22 IBM Tivoli Monitoring: IBM i OS Agent Troubleshooting Guide

- 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

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