IBM Tivoli Monitoring for Virtual Environments Agent for NetApp Storage 7.3 Fix Pack 4

Troubleshooting Guide

Note

Before using this information and the product it supports, read the information in “Notices” on page 49.

This edition applies to version 7.3.0.4 of IBM Tivoli Monitoring for Virtual Environments Agent for NetApp Storage (product number 5724-L92) and to all subsequent releases and modifications until otherwise indicated in new editions.

Contents

Chapter 1. Troubleshooting basics

To troubleshoot a problem, gather information about the problem for IBM® Software Support, use logging data, and consult the lists of identified problems and workarounds.

For general troubleshooting information, see the *IBM Tivoli Monitoring Troubleshooting Guide*. For other problem-solving options, see Chapter 4, “Support information,” on page 45.

You can resolve some problems by ensuring that your system matches the 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).

The following activities can help you find a solution to the problem you are having:

- “Gathering product information for IBM Software Support” on page 1
- “Using logging” on page 2
- “Consulting the lists of identified problems and workarounds” on page 2

Gathering product information for IBM Software Support

Before contacting IBM Software Support about a problem you are experiencing with this product, gather the information shown in Table 1 on page 1.

Table 1. Information to gather before contacting IBM Software Support

Information type	**Description**
Log files	Collect trace log files from failing systems. Most logs are located in a logs subdirectory on the host computer. See “Principal trace log files” on page 6 for lists of all trace log files and their locations. For general information about the IBM Tivoli® Monitoring environment, see the *Tivoli Enterprise Portal User's Guide*.
NetApp information	Version number and patch level Version number and patch level of Andover Continuum software and version number and patch level of the web service add-on Type of device, manufacturer, model number, serial number
Operating system	Operating system version number and patch level PeopleTools version number and patch level
Messages	Messages and other information displayed on the screen

Table 1. Information to gather before contacting IBM Software Support (continued)	
Information type	**Description**
Version numbers for IBM Tivoli Monitoring	Version number of the following members of the monitoring environment: • IBM Tivoli Monitoring. Also provide the patch level, if available. • NetApp Storage agent To find these version and patch numbers, use the following steps depending on your operating system: • UNIX 1. On the command line, type `install_dir/bin/cinfo` 2. Type 1 to show the products installed and the versions. • Windows In Manage Tivoli Monitoring Services, click **Browse Settings**. –OR– Look in *install_dir*/InstallITM/kincinfo.
Screen captures	Screen captures of incorrect output, if any
(UNIX systems only) Core dump files	If the system stops on UNIX systems, collect the core dump file from the *install_dir*/bin directory, where *install_dir* is the directory where you installed the monitoring agent.

You can use the pdcollect tool to collect the most commonly used information from a system. This tool gathers log files, configuration information, version information, and other data. For more information about using this tool, see "pdcollect tool" in the *IBM Tivoli Monitoring Troubleshooting Guide*.

For information about working with IBM Software Support, see IBM Support Portal Service Requests and PMRs (http://www.ibm.com/support/entry/portal/Open_service_request/Software/Software_support_(general)).

Using logging

Logging is the primary troubleshooting feature in the monitoring agent. *Logging* refers to the text messages and trace data that is generated by the agent. Messages and trace data are sent to a file.

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, “Trace logging,” on page 5 for more information.

Consulting the lists of identified problems and workarounds

Known problems are organized into types such as those in the following list to make them easier to locate:

- Installation, configuration, uninstallation

- Remote deployment
- Agent
- Workspace
- Situation
- Take Action commands
- Discovery Library Adapter
- Tivoli Common Reporting

See Chapter 3, “Problems and workarounds,” on page 15 for information about symptoms and detailed workarounds for these types of problems.

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

Chapter 2. Trace logging

Trace logs are used to capture information about the operating environment when component software fails to operate as designed.

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. Most logs are in a logs subdirectory on the host computer. See the following information to learn how to configure and use trace logging:

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

IBM Software Support personnel use the information captured by trace logging to trace a problem to its source or to determine why an error occurred. All components in the IBM Tivoli Monitoring environment have a default tracing level. The tracing level can be changed on a per-component level to adjust the type of trace information collected, the degree of trace detail, the number of trace logs to be kept, and the amount of disk space used for tracing.

Overview of log file management

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Knowing the naming conventions for log files helps you to find the files.

Agent log file naming conventions

Table 2 on page 6 provides the names, locations, and descriptions of IBM Tivoli Monitoring general log files. The log file names for the NetApp Storage agent adhere to the following naming convention:

- `knu_data_provider_instance_name_nn.log`

Windows systems

`hostname_productcode_instance-name_program_HEXtimestamp-nn``.log`

Linux® and UNIX systems

`hostname_productcode_instance-name_program_HEXtimestamp-nn``.log`

Where:

hostname
Host name of the computer where the monitoring component is running.

nu
Two-character product code for NetApp Storage agent.

productcode
Two-character product code. For IBM Tivoli Monitoring for Virtual Environments Agent for NetApp Storage, the product code is nu.

instance-name
Instance name of the agent.

program
Name of the program that is being run.

HEXtimestamp
Hexadecimal time stamp that represents the time at which the program started.

nn
Rolling log suffix.

Principal trace log files

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Trace log files are located on various systems.

Table 2 on page 6 contains locations, file names, and descriptions of trace logs that can help determine the source of problems with agents.

Table 2. Trace log files for troubleshooting agents

System where log is located	File name and path	Description
On the Tivoli Enterprise Monitoring Server	• **Windows:** The `IBM Tivoli Monitoring` *`timestamp`*`.log` file in the *`install_dir`*`\InstallITM` path • **UNIX:** The `candle_installation.log` file in the *`install_dir`*`/logs` path • **Linux:** The `candle_installation.log` file in the *`install_dir`*`/logs` path	Provides details about products that are installed. **Note:** Trace logging is enabled by default. A configuration step is not required to enable this tracing.
On the Tivoli Enterprise Monitoring Server	The `Warehouse_Configuration.log` file is in the following location on Windows systems: *`install_dir`*`\InstallITM`	Provides details about the configuration of data warehousing for historical reporting.
On the Tivoli Enterprise Portal Server	The `teps_odbc.log` file is located in the following path: • **Windows:** *`install_dir`*`\InstallITM` • **UNIX:** *`install_dir`*`/logs` • **Linux:** *`install_dir`*`/logs`	When you enable historical reporting, this log file traces the status of the warehouse proxy agent.

Table 2. Trace log files for troubleshooting agents (continued)

System where log is located	File name and path	Description
On the computer that hosts the monitoring agent	The agent operations log files are as follows: *instance_hostname_NU*.LG0 is the current log created when the agent is started. *instance_hostname_NU*.LG1 is the backup of the previous log. These logs are in the following directory that depends on the operating system that you are using: • **Windows:** *install_dir*\TMAITM6_x64\logs • **Linux:** *install_dir*/logs • **UNIX:** *install_dir*/logs KNU agent: These logs are in the following directory depending on the operating system that you are using: • **Windows 64 bit:** *install_dir*\TMAITM6_x64\logs • **Linux:** *install_dir*/logs • **UNIX:** *install_dir*/logs For the NetApp agent: • **Windows:** *instance_name_hostname_*GB_.LG0 For example: `OCUM_MONITOR1054_NU.LG0` • **UNIX or Linux:** *instance_name*:*hostname*.*domain_name_depending_on_OS_settings_*.LG0 For example, OCUM:MONITOR1054.domainname.com:NU.LG0 OCUM:MONITOR1054:NU.LG0 These logs are in the following directory depending on the operating system that you are using: • **Windows (32 bit):** *install_dir*\tmaitm6\logs • **Windows (64 bit):**	Shows whether the agent could connect to the monitoring server. Shows which situations are started and stopped, and shows other events while the agent is running. A new version of this file is generated every time that the agent is restarted. IBM Tivoli Monitoring generates one backup copy of the *.LG0 file with the tag .LG1. View the .LG1 tag to learn the following details regarding the *previous* monitoring session: • Status of connectivity with the monitoring server • Situations that were running • The success or failure status of Take Action commands If *instance_name:hostname.domain_name* is greater than 32 characters, the characters that are farthest to the right are truncated from the domain name.

Table 2. Trace log files for troubleshooting agents (continued)		
System where log is located	**File name and path**	**Description**
On the computer that hosts the monitoring agent	The NetApp data collection logs are as follows: • **Windows:** `knu_data_provider_instance-name_nn.log` in the `install_dir\TMAITM6_x64\logs` directory • **UNIX:** `knu_data_provider_instance-name_nn.log` in the *`install_dir`*`/logs` directory	Logs that contain information about the NetApp monitoring agent data collectors that are used to collect information from within the NetApp datasource. Data about information collected from NetApp datasource `knu_data_provider_instance-name_nn.log`.
On the computer that hosts the monitoring agent	The Take Action command log files are as follows: • `knu_data_provider_actions_`*`instance_n`*`.log` The logs are in the following directories: • **Windows**: `install_dir\TMAITM6_x64\logs` • **UNIX**: *`install_dir`*`/logs` • **Linux**: *`install_dir`*`/logs` • **Windows (64 bit):** *`install_dir`*`\tmaitm6_x64\logs` • **UNIX:** *`install_dir`*`/logs` • **Linux:** *`install_dir`*`/logs`	Traces activity each time a Take Action command runs. All predefined Take Action commands are logged in to this file.
On the computer that hosts the monitoring agent	The Take Action command log files are as follows: • `knu_data_provider_instance-name_nn.log` The logs are in the following directories: • **Windows**: *`install_dir`*`\TMAITM6_x64\logs` • **UNIX**: *`install_dir`*`/logs` • **Linux**: *`install_dir`*`/logs`	Traces activity each time a Take Action command runs. All predefined Take Action commands are logged into this file.

Table 2. Trace log files for troubleshooting agents (continued)		
System where log is located	**File name and path**	**Description**
On the computer that hosts the monitoring agent	Data provider log files: • `knu_data_provider_instance_startup.log` • `knu_data_provider_instance_n.log` The logs are in the following directories: • **Windows:** *install_dir*`\TMAITM6_x64\logs` • **Linux:** *install_dir*`/logs`	Traces monitoring agent data provider state and operations.
Definitions of variables: • *timestamp* is a time stamp with a format that includes year (y), month (m), day (d), hour (h), and minute (m), as follows: **yyyymmdd hhmm** • *HEXtimestamp* is a hexadecimal representation of the time at which the process was started. • *install_dir* represents the directory path where you installed the IBM Tivoli Monitoring component. *install_dir* can represent a path on the computer that hosts the monitoring system, the monitoring agent, or the portal. • *instance* refers to the name of the database instance that you are monitoring. • *instance_name* refers to the name of the agent instance. • *hostname* refers to the name of the computer on which the IBM Tivoli Monitoringcomponent runs. • *nn* represents the circular sequence in which logs are rotated. this value includes a range from 1 - 5, by default. The first is always retained because it includes configuration parameters. • *product code* specifies the product code, for example, *nu* for NetApp Agent or *nt* for Windows systems.		

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

RAS trace parameters

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Pinpoint a problem by setting detailed tracing of individual components of the monitoring agent and modules

See “Overview of log file management” on page 5 to ensure that you understand log rolling and can reference the correct log files when you manage log file generation.

Setting RAS trace parameters by using the GUI

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On Windows systems, you can use the graphical user interface to set trace options.

The IBM Tivoli Monitoring for Virtual Environments Agent for NetApp Storage uses RAS1 tracing and generates the logs described in Table 2 on page 6. The default RAS1 trace level is ERROR.

1. Open the **Manage Tivoli Enterprise Monitoring Services** window.
2. Select **Advanced** > **Edit Trace Parms**. The **Tivoli Enterprise Monitoring Server Trace Parameters** window is displayed.
3. Select a new trace setting in the pull-down menu in the **Enter RAS1 Filters** field or type a valid string.
   - General error tracing. KBB_RAS1=ERROR
   - Intensive error tracing. KBB_RAS1=ERROR (UNIT:knu ALL) (COMP:krzora ALL)
   - Maximum error tracing. KBB_RAS1=ERROR (UNIT:knu ALL) (UNIT:kra ALL)(COMP:krzora ALL) (COMP:krzalert ALL) (COMP:krzcomm ALL) (UNIT:kra ALL)
   - Intensive error tracing. KBB_RAS1=ERROR (UNIT:logmonitor ALL) (UNIT:kum ALL)

     Note: As this example shows, you can set multiple RAS tracing options in a single statement.

     To set tracing for the Monitoring Agent for NetApp, use UNIT:kgb ALL
4. Modify the value for Maximum Log Size Per File (MB) to change the log file size (changes LIMIT value).
5. Modify the value for Maximum Number of Log Files Per Session to change the number of log files per startup of a program (changes COUNT value).
6. Modify the value for Maximum Number of Log Files Total to change the number of log files for all startups of a program (changes MAXFILES value).
7. Optional: Click Y (Yes) in the **KDC_DEBUG Setting** menu to log information that can help you diagnose communications and connectivity problems between the monitoring agent and the monitoring server. The **KDC_DEBUG** setting and the **Maximum error tracing** setting can generate a large amount of trace logging. Use these settings only temporarily, while you are troubleshooting problems. Otherwise, the logs can occupy excessive amounts of hard disk space.
8. Click **OK**. You see a message reporting a restart of the monitoring agent so that your changes take effect.

Monitor the size of the `logs` directory. Default behavior can generate a total of 45 - 60 MB for each agent that is running on a computer. For example, each database instance that you monitor can generate 45 - 60 MB of log data. See the "Procedure" section to learn how to adjust file size and numbers of log files to prevent logging activity from occupying too much disk space.

Regularly prune log files other than the RAS1 log files in the `logs` directory. Unlike the RAS1 log files that are pruned automatically, other log types can grow indefinitely, for example, the logs in Table 2 on page 6 that include a process ID number (PID).

Use collector trace logs as an additional source of troubleshooting information.

Note: The **KDC_DEBUG** setting and the **Maximum error tracing** setting can generate a large amount of trace logging. Use these settings only temporarily while you are troubleshooting problems. Otherwise, the logs can occupy excessive amounts of hard disk space.

Manually setting RAS trace parameters

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You can manually edit the RAS1 trace logging parameters.

Agents use RAS1 tracing and generate the logs described in Table 2 on page 6. The default RAS1 trace level is ERROR.

1. Open the trace options file:
   - **Windows systems:**

     install_dir\tmaitm6\KNUENV_*instance name*
   - **UNIX systems:**

     install_dir /config/nu_*instance name*.config

2. Edit the line that begins with **KBB_RAS1=** to set trace logging preferences. For example, if you want detailed trace logging, set the **Maximum Tracing** option: `KBB_RAS1=ERROR (UNIT:knu ALL) (UNIT:kra ALL)`
3. Edit the line that begins with **KBB_RAS1_LOG=** to manage the generation of log files:
   - **MAXFILES**: The total number of files that are to be kept for all startups of a specific program. When this value is exceeded, the oldest log files are discarded. The default value is 9.
   - **LIMIT**: The maximum size, in megabytes (MB) of a RAS1 log file. The default value is 5.
   - IBM Software Support might guide you to modify the following parameters:
     - **COUNT**: The number of log files to keep in the rolling cycle of one program startup. The default is 3.
     - **PRESERVE**: The number of files that are not to be reused in the rolling cycle of one program startup. The default value is 1.

   Note: The **KBB_RAS1_LOG** parameter also provides for the specification of the log file directory, log file name, and the inventory control file directory and name. Do not modify these values or log information can be lost.

   For the Monitoring Agent for NetApp, each instance of the agent has unique trace settings on Windows systems, but the three executable files for one instance do not have unique trace settings. On UNIX and Linux, trace settings are global across the instances. No trace settings are available for the LG0 log for Windows, UNIX, or Linux systems.
4. Restart the monitoring agent so that your changes take effect.

Monitor the size of the `logs` directory. Default behavior can generate a total of 45 - 60 MB for each agent that is running on a computer. For example, each database instance that you monitor can generate 45 - 60 MB of log data. See the "Procedure" section to learn how to adjust file size and numbers of log files to prevent logging activity from occupying too much disk space.

Regularly prune log files other than the RAS1 log files in the `logs` directory. Unlike the RAS1 log files that are pruned automatically, other log types can grow indefinitely, for example, the logs in Table 2 on page 6 that include a process ID number (PID).

Use collector trace logs as an additional source of troubleshooting information.

Note: The **KDC_DEBUG** setting and the **Maximum error tracing** setting can generate a large amount of trace logging. Use these settings only temporarily while you are troubleshooting problems. Otherwise, the logs can occupy excessive amounts of hard disk space.

Dynamic modification of trace settings

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You can dynamically modify the trace settings for an IBM Tivoli Monitoring component, such as, Tivoli Enterprise Monitoring Server, Tivoli Enterprise Portal Server, most monitoring agents, and other components. You can access these components, except for a few monitoring agents, from the tracing utility.

Dynamic modification of the trace settings is the most efficient method, because you can do it without restarting the component. Settings take effect immediately. Modifications by this method are not persistent.

Note: When the component is restarted, the trace settings are read again from the `.env` file. Dynamically modifying these settings does not change the settings in the `.env` files. To modify these trace settings permanently, modify them in the `.env` files.

ras1

Run this command to modify the trace settings for a Tivoli Monitoring component.

The syntax is as follows:

```
ras1 set|list (UNIT|COMP: class_name ANY|ALL|Detail|ERROR|Flow|INPUT|Metrics|OUTPUT|STATE)
{(UNIT|COMP: class_name ANY|ALL|Detail|ERROR|Flow|INPUT|Metrics|OUTPUT|STATE)}
```

You can specify more than one component class to which to apply the trace settings.

Command options

set
Turns on or off tracing depending upon the value of its parameters. If the parameter is **ANY**, it turns it off. All other parameters turn on tracing based on the specified type or level.

list
Displays the default level and type of tracing that is set by default.

Parameters

The parameters that determine the component classes to which to apply the trace settings are as follows:

COMP: ***class_name***
Modifies the trace setting for the name of the component class, as specified by *class_name* , for example, `COMP:KDH`. The output contains trace for the specified class.

UNIT: ***class_name***
Modifies the trace setting for any unit that starts with the specified *class_name* value, for example, `UNIT: kra`. The output contains trace for any unit that begins with the specified filter pattern.

The parameters that determine the trace level and type are as follows:

ALL
Displays all trace levels, including every trace point defined for the component. This setting might result in a large amount of trace, so specify other parameters to exclude unwanted trace. You might require the **ALL** parameter to isolate a problem, which is the equivalent to setting "`Error Detail Flow State Input Output Metrics`".

ANY
Turns off tracing.

Detail
Displays detailed information about each function.

When entered with the `list` option, the trace is tagged with `Det`.

ERROR
Logs internal error conditions.

When entered with the `list` option, the trace is tagged with ER. The output can also be tagged with EVERYE+EVERYU+ER.

Flow
Displays control flow data for each function entry and exit.

When entered with the `list` option, the trace is tagged with `Fl`.

INPUT
Displays input data for each function.

When entered with the `list` option, the trace is tagged with `IN`.

Metrics
Displays metrics on each function.

When entered with the `list` option, the trace is tagged with `ME`.

OUTPUT
Displays output data for each function.

When entered with the `list` option, the trace is tagged with OUT.

State
Displays the status for each function.

When entered with the `list` option, the trace is tagged with St.

Example

If you enter `ras1 set (COMP:KDH ALL) (COMP:ACF1 ALL) (COMP:KDE ALL)`, the trace utility turns on all levels of tracing for all the files and functions for which KDH, ACF1, and KDE are the classes.

```
kbbcre1.c, 400, May 29 2007, 12:54:43, 1.1, *
kbbcrn1.c, 400, May 29 2007, 12:54:42, 1.1, *
kdhb1de.c, 400, May 29 2007, 12:59:34, 1.1, KDH
kdh0med.c, 400, May 29 2007, 12:59:24, 1.1, KDH
kdhsrej.c, 400, May 29 2007, 13:00:06, 1.5, KDH
kdhb1fh.c, 400, May 29 2007, 12:59:33, 1.1, KDH
kdhb1oe.c, 400, May 29 2007, 12:59:38, 1.2, KDH
kdhs1ns.c, 400, May 29 2007, 13:00:08, 1.3, KDH
kbbacdl.c, 400, May 29 2007, 12:54:27, 1.2, ACF1
kbbaclc.c, 400, May 29 2007, 12:54:27, 1.4, ACF1
kbbac1i.c, 400, May 29 2007, 12:54:28, 1.11, ACF1
vkdhsfcn.c, 400, May 29 2007, 13:00:11, 1.1, KDH
kdhserq.c, 400, May 29 2007, 12:59:53, 1.1, KDH
kdhb1pr.c, 400, May 29 2007, 12:59:39, 1.1, KDH
kdhsgnh.c, 400, May 29 2007, 12:59:49, 1.1, KDH
kdh0uts.c, 400, May 29 2007, 12:59:23, 1.1, KDH
kdhsrsp.c, 400, May 29 2007, 13:00:13, 1.2, KDH
kdhs1rp.c, 400, May 29 2007, 13:00:12, 1.1, KDH
kdhscsv.c, 400, May 29 2007, 12:59:58, 1.9, KDH
kdebbac.c, 400, May 29 2007, 12:56:50, 1.10, KDE
...
```

Setting trace parameters for the Tivoli Enterprise Console server

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In addition to the trace information captured by IBM Tivoli Monitoring, you can also collect additional trace information for the Tivoli Enterprise Console components that gather event server metrics.

To collect this information, modify the `.tec_diag_config` file on the Tivoli Enterprise Console event server. Use the steps in the following procedure to modify the event server trace parameters.

1. Open the `$BINDIR/TME/TEC/.tec_diag_config` file in an ASCII editor.
2. Locate the entries that configure trace logging for the agent components on the event server. Two entries are included, one for `tec_reception` and one for `tec_rule`:

```
# to debug Agent Utils
tec_reception Agent_Utils  error   /tmp/tec_reception
SP
# to debug Agent Utils
tec_rule Agent_Utils   error   /tmp/tec_rule
```

3. To gather additional trace information, modify these entries to specify a trace level of `trace2`:

```
# to debug Agent Utils
tec_reception Agent_Utils   trace2  /tmp/tec_reception
SP
# to debug Agent Utils
tec_rule Agent_Utils       trace2  /tmp/tec_rule
```

4. In addition, modify the `Highest_level` entries for `tec_rule` and `tec_reception`:

```
tec_reception Highest_level  trace2
SP
tec_rule Highest_level trace2
```

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*.

Installation and configuration troubleshooting

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Problems can occur during installation, configuration, and uninstallation of the agent.

See Table 3 on page 15.

Table 3. Problems and solutions for installation and configuration

Problem	Solution
(*UNIX only*) During a command-line installation, you choose to install a component that is currently installed, and you see the following warning: `WARNING - you are about to install the SAME version of "component_name"` where *component_name* is the name of the component that you are attempting to install. **Note:** This problem affects UNIX command-line installations. If you monitor only Windows environments, you see this problem if you choose to install a product component (for example, a monitoring server) on a UNIX system.	You must exit and restart the installation process. You cannot return to the list where you selected components to install. When you run the installer again, do not attempt to install any component that is installed.
A problem can occur when you install and configure a new monitoring agent on a computer where other agents are running as described in this example: • Agents are running on a computer and communicating with a Tivoli Enterprise Monitoring Server, called **TEMS1**. • You install a new agent on the same computer and you want this agent to communicate with a different monitoring server, called **TEMS2**. • When you configure the new agent to communicate with **TEMS2**, all the existing agents are reconfigured to communicate with **TEMS2**.	You must reconfigure the previously existing agents to restore their communication connection with **TEMS1**. For example, you can right-click the row for a specific agent in the Manage Tivoli Enterprise Monitoring Services, and select **Reconfigure**. For more information about reconfiguration, see the *IBM Tivoli Monitoring Installation and Setup Guide*.

Table 3. Problems and solutions for installation and configuration (continued)	
Problem	**Solution**
Diagnosing problems with product browse settings (Windows systems only).	When you have problems with browse settings, complete the following steps: 1. Click **Start** > **Programs** > **IBM Tivoli Monitoring** > **Manage Tivoli Enterprise Monitoring Services**. The **Manage Tivoli Enterprise Monitoring Services** window is displayed. 2. Right-click the Windows agent and select **Browse Settings**. A text window is displayed. 3. Click **Save As** and save the information in the text file. If requested, you can forward this file to IBM Software Support for analysis.
A message similar to "`Unable to find running CMS on CT_CMSLIST`" in the log file is displayed.	If a message similar to "`Unable to find running CMS on CT_CMSLIST`" is displayed in the log file, the agent cannot connect to the monitoring server. Confirm the following points: • Do multiple network interface cards (NICs) exist on the system? • If multiple NICs exist on the system, find out which one is configured for the monitoring server. Ensure that you specify the correct host name and port settings for communication in the IBM Tivoli Monitoring environment.

Table 3. Problems and solutions for installation and configuration (continued)

Problem	Solution
The system is experiencing high CPU usage. High CPU while using the agent can be caused by one or more of these issues: • Large amounts of data that is written to the log files being monitored, which requires numerous processing and can cause event storms. • Poor ordering of regular expressions in the format file. The format file is processed from the bottom to the top. If a record must be compared with all or almost regular expression in order to find a match CPU usage is affected. • Using regular expressions that take a long time to compute.	To help alleviate the issue of high CPU usage while using the agent: • Follow best practices for writing efficient regular expressions • Place expressions that are likely to match the most records as far towards the bottom of the format file as possible. • Place *DISCARD* statements at the bottom of the format file to discard unwanted records. • If sending EIF events, ensure that the EIF cache is large enough to store the event storm. • Where possible, minimize the use of multi-line records. **Agent process:** View the memory usage of the KNUCMA process. If CPU usage seems to be excessive, restart the monitoring agent. **Note:** As the number of remote systems is increased, the CPU, memory, and network utilization on the agent server also increases. A dedicated agent server might be added to the environment to handle a large agentless monitoring environment. **Network cards:** The network card configurations can decrease the performance of a system. Each stream of packets that a network card receives (assuming that it is a broadcast or destined for the under-performing system) must generate a CPU interrupt and transfer the data through the I/O bus. If the network card in question is a bus-mastering card, work can be offloaded and a data transfer between memory and the network card can continue without using CPU processing power. Bus-mastering cards are 32-bit and are based on PCI or EISA bus architectures.
When installing locally (**`install.sh`**) to a UNIX or Linux operating system, you receive the following error string: `Initializing ... ./install.sh[24]: <vrmf>: syntax error awk: syntax error near line 1 awk: illegal statement near line 1 awk: syntax error near line 1 awk: illegal statement near line 1 Initializing ... chown: cannot access `.=\\265\\263.(': No such file or directory chmod: cannot access `.=\\265\\263.(': No such file or directory`	Ignore this error.

Table 3. Problems and solutions for installation and configuration (continued)	
Problem	**Solution**
The monitoring agent fails to install on a Windows 2000 system. This problem occurs when you are accessing the Windows 2000 system through the Microsoft Windows Terminal Services client program and the IBM Tivoli Monitoring install media is located on a shared network drive or some media other than the local disk or CD drive.	This problem is a current IBM Tivoli Monitoring limitation. Make sure that the monitoring agent installation media is copied to a local disk before running the monitoring agent install or use a local CD drive when attempting to install a monitoring agent on a Windows 2000 system through MS Windows Terminal Services client.
You want to configure the underlying poll intervals that the file system and srvrmgr custom data providers use to something other than their default values.	For Windows systems: Edit the kubenv_*instance_name* file and modify the minute value on the right side of the equal sign for either the KUB_FILESYS_POLL_MINUTES and KUB_SRVRMGR_POLL_MINUTES, save the file, and then restart the associated monitoring agent instance to use the new polling value. For UNIX systems: The poll intervals can be changed by modifying the values for KUB_FILESYS_POLL_MINUTES and KUB_SRVRMGR_POLL_MINUTES found in the `ub.ini` file located in the `$CANDLEHOME/config` directory. The new value must be greater than the default of 30 seconds. Stop and restart the agent instance to have the agent use the new polling value.
The artwork in the installation panels in the Japanese environment are missing, and some panels have a truncation problem.	Currently, no solution is available for this problem.
In the **Install Prerequisites** panel during agent installation, the following extra string displays in Russian: \r	Currently, no solution is available for this problem.
In the **Select Features** panel during agent installation, the **Description** of each feature is in English only.	Currently, no solution is available for this problem.
Cannot find the agent support files for the Linux operating system.	Support files for all IBM Tivoli Monitoring supported operating systems are located on the support file image. Support files for the AIX® operating system are located on the agent image.
If you are using IBM Tivoli Monitoring V6.2.1 or V6.2.2, bulk-loading fails in the Tivoli Application Dependency Discovery Manager (TADDM). The error log shows an error that is related to WindowsOperatingSystem.	If you are using IBM Tivoli Monitoring V6.2.1, install IBM Tivoli Monitoring V6.2.1 Fix Pack 3. If you are using IBM Tivoli Monitoring V6.2.2, install IBM Tivoli Monitoring V6.2.2 Fix Pack 2.

Table 3. Problems and solutions for installation and configuration (continued)

Problem	Solution
Installation on RHEL Linux 64-bit systems uses the **install.sh** command script. Running this script fails with a `runGSkit failure: Return error code: 99`.	GSkit is called by **install.sh** and fails when runGSkit calls verifyInstall. Review the `<InstallDirectory>/logs/candle_installation.log` file and look for references to runGSkit. For example, output similar to the following might be present: `runGSkit: ----- Running command: /opt/IBM/ITM/li6243/gs/bin/ private_verifyinstall /opt/IBM/ITM/li6243/gs/bin/gsk7ver: error while loading shared libraries: libstdc++.so.5: cannot open shared object file: No such file or directory Error: Verify Failed Expected Details of gskit in /opt/IBM/ITM/li6243/gs runGSkit: return code from command is 99 runGSkit: ----- End of running command ----- runGSkit: error Return error code: 99 runGSkit: error GSKit check failure, script: /opt/IBM/ITM/li6243/gs/bin/ private_verifyinstall runGSkit: error li6243 - GSK check error, verifyInstall test failed`  In the previous example, the 32-bit version of the `libstdc++.so.5` file is not present. This file comes from the `compat-libstdc++-33-3.2.3-XX.i686.rpm` package, which is not installed on 64-bit RHEL systems by default. When this package is installed, the problem no longer occurs.

Table 3. Problems and solutions for installation and configuration (continued)

Problem	Solution
On Windows systems, uninstallation of IBM Tivoli Monitoring fails to uninstall the entire environment.	Be sure that you follow the general uninstallation process described in the *IBM Tivoli Monitoring Installation and Setup Guide*: 1. Remove Tivoli Enterprise Monitoring Server Application support by completing the following steps: a. Use Manage Tivoli Enterprise Monitoring Services. b. Select **Tivoli Enterprise Monitoring Server**. c. Right-click and select **Advanced**. d. Select **Remove TEMS application support**. e. Select the agent to remove its application support. 2. Uninstall the monitoring agents first, as in the following examples: • Uninstall a single monitoring agent for a specific database. -OR- • Uninstall all instances of a monitoring product, such as IBM Tivoli Monitoring for Databases. 3. Uninstall IBM Tivoli Monitoring.
The way to remove inactive managed systems (systems whose status is OFFLINE) from the Navigator tree in the portal is not obvious.	Use the following steps to remove, but not uninstall, an offline managed system from the Navigator tree: 1. Click the **Enterprise** icon in the Navigator tree. 2. Right-click, and then click **Workspace** > **Managed System Status**. 3. Right-click the offline managed system, and select **Clear offline entry**. To uninstall the monitoring agent, use the procedure described in the *IBM Tivoli Monitoring Installation and Setup Guide*.

Table 3. Problems and solutions for installation and configuration (continued)

Problem	Solution
IBM Tivoli Monitoring might not be able to generate a unique name for monitoring components because of the truncation of names that the product automatically generates.	If the agent supports multiple instances, IBM Tivoli Monitoring automatically creates a name for each monitoring component by concatenating the subsystem name, host name, and product code separated by colons (*subsystem_name*:*hostname*:KNU). **Note:** When you monitor a multinode system, such as a database, IBM Tivoli Monitoring adds a subsystem name to the concatenated name, typically a database instance name. The length of the name that IBM Tivoli Monitoring generates is limited to 32 characters. Truncation can result in multiple components having the same 32-character name. If this problem happens, shorten the *hostname* portion of the name as follows: 1. Open the configuration file for the monitoring agent, which is located in the following path: • **On Windows:** *install_dir*\TMAITM6_x64*product_code*CMA.INI. For example, the product code for the Monitoring Agent for Windows OS is NT. The file name is `KNTCMA.INI`. • **On UNIX and Linux:** `itm_home/config/`*`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 that 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 KNU, 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.

Table 3. Problems and solutions for installation and configuration (continued)	
Problem	**Solution**
IBM Tivoli Monitoring might not be able to generate a unique name for monitoring components because of the truncation of names that the product automatically generates.	The length of the name that IBM Tivoli Monitoring generates is limited to 32 characters. Truncation can result in multiple components having the same 32-character name. If this problem happens, shorten the *hostname* portion of the name. The Microsoft Cluster Name configuration parameter is used to create the Windows system name that is displayed in the Tivoli Enterprise Portal. The Microsoft Cluster Name configuration is used to set CTIRA_HOSTNAME, which is the host name part of the managed system name. Follow the instructions in the Installation and Configuration Guide for the agent to set CTIRA_HOSTNAME.
While running **./uninstall.sh** to uninstall the agent, one of its components, or both, you receive the following error message and the uninstallation does not complete: `uninstall.sh failure: KCI0766E could not find arch "aix536" in a JRE version file.`	Use the following separate, manual procedure for uninstalling the system monitor agent that monitors the Linux or UNIX operating system: 1. Stop the agent by running the following command: *InstDir*`/bin/itmcmd agent stop all` 2. Stop any other agents running from the same *InstDir* directory. 3. Issue the following command: *InstDir*`/bin/uninstall.sh REMOVE EVERYTHING` **Note:** Running the **uninstall.sh** script with REMOVE EVERYTHING removes all agent files and deletes the installation subdirectory tree.
The software inventory tag for the agent on UNIX and Linux systems is not removed during uninstallation of the agent.	After uninstalling the agent, manually remove the file named *full name of agent*`.cmptag` from the `$CANDLEHOME/properties/version/` directory.
After installation, the Linux Kernel-based Virtual Machines agent instance fails to start. The following message appears in the agent log: `(4CF55620.003F-1:kbbssge.c,52,"BSS1_GetEnv") KBB_SIG1="-asyncoff -syncoff -dumpoff" (4CF55620.0040-1:signalmanager.cpp,170, "startManagerThread") Error starting signal manager thread. Return code = 11; Resource temporarily unavailable. Use the return code and message to investigate the failure. Agent is terminating.`	The probable cause of the problem is the public domain Korn shell, **pdksh**. Uninstall the **pdksh** shell and install the **ksh** rpm that is included on the Linux installation media.

Table 3. Problems and solutions for installation and configuration (continued)	
Problem	**Solution**
When the agent is installed using group deployment, deploygroup was run multiple times. The group deployment starts and completes successfully, but there were multiple entries in the Deploy Status Summary workspace on the Tivoli Enterprise Portal. When the command tried to install multiple times, the additional installations were queued and then were in failed state though the agent was deployed successfully. **Note:** • When the bundle group contains a single bundle and the deployment group contains more than one member (managed system of the same type as AIX or Linux), the deployment is successful on both systems. • When the bundle group contains more than one bundle and the deploy group contains single or multiple members, the deployment will be executed on each group member (managed system) depending on the members present in the bundle group and deploy group. • The command creates a transaction for each XX bundle for each target system; the bundle matching the operating system for the deployment member is processed successfully; and remaining transactions were in a queued or failed state.	There is no solution at this time.

Remote deployment troubleshooting

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Problems can occur with remote deployment and removal of agent software using the Agent Remote Deploy process.

Table 4 on page 24 contains problems and solutions related to remote deployment.

Table 4. Remote deployment problems and solutions	
Problem	**Solution**
A timeout occurs when using the **tacmd addBundles** command to add one or more deployment bundles to a local agent depot. The KUICAB026E error message is displayed.	• If you use the product DVD to add bundles, copy the deployment bundles to the local hard disk and issue the **tacmd addBundles** command again. • Increase the TIMEOUT value from the command prompt where you ran the **tacmd addBundles** command. After setting the TIMEOUT value, run the **tacmd addBundles** command again. • Add the deployment bundles one by one with the **-t** option specified for the **tacmd addBundles** command. If the timeout still occurs to a certain bundle, specify the **-p** option to add the bundle on the specific operating system.
(*Linux systems*) When remotely deploying the monitoring agent with the Run-as user configured, remote deployment fails with return code 1031.	Do not specify Run-as user and deploy the monitoring agent again. By default, the monitoring agent and the OS agent share the same user ID.
While you are using the remote deployment feature to install the IBM Tivoli Monitoring for Virtual Environments Agent for NetApp Storage, an empty command window is displayed on the target computer. This problem occurs when the target of remote deployment is a Windows computer. (For more information about the remote deployment feature, see the *IBM Tivoli Monitoring Installation and Setup Guide*.)	Do not close or modify this window. It is part of the installation process and is dismissed automatically.
KDY1008E error when using remote operations to remove the last instance of the agent.	There are two windows when removing an agent when it is the last instance. The first asks to remove the instance. The second asks to uninstall. If you say Yes to the first and No to the second for a single-instance agent, you always get the KDY1008E error. The workaround is to always say Yes in the second window to uninstall.
The removal of a monitoring agent fails when you use the remote removal process in the Tivoli Enterprise Portal desktop or browser.	This problem might occur when you attempt the remote removal process immediately after you restart the Tivoli Enterprise Monitoring Server. You must allow time for the monitoring agent to refresh its connection with the Tivoli Enterprise Monitoring Server before you begin the remote removal process.
A problem can arise when you try to operate the agent remotely while the agent cluster resource controlling the agent is online.	Some remote operations might require the agent to be taken offline. If the cluster resource is online, the cluster server attempts to bring the agent back online therefore interfering with the remote operations. Take the agent cluster resource offline while operating the agent remotely. When remote operations are complete, bring the agent cluster resource back online.

Table 4. Remote deployment problems and solutions (continued)	
Problem	**Solution**
The **tacmd pkgadd** command times out.	The **TIMEOUT** environment variable specifies the number of seconds that can occur before the **addbundles** command expires. Set an environment variable called **TIMEOUT** and try the command again. For Windows systems, change to set TIMEOUT=1800. For Linux systems, change to export TIMEOUT=1800.
One of the following two messages is displayed when you configure a remote agent instance: • Configuring through the portal: `KFWITM290E An unexpected error occurred. The current task was cancelled.` • Configuring through the command line: `An unexpected system error occurred while executing the addSystem command`	Follow these guidelines when you configure a remote agent instance: • Configuring through the portal: – If the number of the database connections is less than or equal to 10, the total number of user input characters must not exceed 1000. – If the number of the database connections is less than 20 and more than 10, the total number of user input characters must not exceed 750. – If the number of the database connections is more than 20, the total number of user input characters must not exceed 500. The user input includes agent instance name, user ID, password, Oracle instance client path, Oracle home, Oracle database connection name, Oracle database connection string, and Oracle Alert Log path. • Configuring through the command line: When you configure remotely using the `tacmd -t pc -n node -p properties` command, the length of the *properties* string must not exceed the maximum length of 2500 characters.
You cannot select Itanium bundles for remote deployment through the Tivoli Enterprise Portal. For example, when you right-click the **Itanium Machine** node in the Navigator pane of the Tivoli Enterprise Portal client, and select **Add Managed System**, Itanium bundle is not displayed in the **Add Managed System** window. **Note:** This problem is applicable to Tivoli Enterprise Portal V6.2.2, Fix Pack 1 or earlier.	Install IBM Tivoli Monitoring V6.2.2, Fix Pack 2.

Agent troubleshooting

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A problem can occur with the agent after it is installed.

Table 5 on page 26 contains problems and solutions that can occur with the agent after it is installed.

Table 5. Agent problems and solutions	
Problem	**Solution**
Log data accumulates too rapidly.	Check the RAS trace option settings, which are described in “Setting RAS trace parameters by using the GUI” on page 9. The trace option settings that you can set on the KBB_RAS1= and KDC_DEBUG= lines potentially generate large amounts of data.
How to change the default connection retry count.	Set KNU_DATA_PROVIDER_CONNECTION_RETRY_COUNT=6 with desired value in the instance environment file. For more information about how to set the environment file, see "Configuring environment variables" in the *Installation and Configuration Guide*.
No data is displayed in the Tivoli Enterprise Portal for all attribute groups.	Inspect the data in the Performance Object Status attribute group and restart the agent.
Empty workspace views are displayed in the Tivoli Enterprise Portal.	IBM Tivoli Monitoring uses timeout settings during agent metric gathering as a way to avoid prolonged waits for data at the Tivoli Enterprise Portal client. When an agent takes longer than the portal timeout period to provide data, the requesting portal workspaces show empty views. The IBM Tivoli Monitoring NetApp agents implement metric caching to alleviate running into these timeouts when metric data acquisition is takes a long time. When data is retrieved by the agent, it caches the attribute group that is returned to the portal. Metrics that are gathered within the portal timeout period are readily displayed on the console. Attribute groups that take longer are displayed from the cache while the agent continues to collect data in the background for the original request. Because of the way some metrics are gathered, certain metrics take longer than the default timeout and fail to make it to the cache before the portal timeout expires. Such problem is caused by network traffic, SSH communication overhead, HMC IPC communication layer, Logical Volume Manager communication layer, and possible other circumstances. As a result, the portal displays empty workspace views for these attribute groups. The workspace shows data only when the data is cached.

Table 5. Agent problems and solutions (continued)

Problem	Solution
The Process Data Unavailable expert advice is incorrect.	The expert advice for this situation has the following text: Under Suggested Actions: If the problem persists, the Performance Process Service Performance Counters might not be enabled. To enable the Performance Process Service performance counters, you can use the `Exctrlst.exe`: Extensible Performance Counter List tool (http://www.microsoft.com/windows2000/techinfo/reskit/tools/existing/exctrlst-o.asp) to verify that the Performance Counters are Enabled for the 'PerfProc' service."
Warning messages from ClusSvc concerning 'The node lost communication with cluster node ComputerName on network xx.'	Event ID 1123 and event ID 1122 might be logged consecutively to the System log in your cluster. Frequently, these events indicate temporary interruptions in intra-cluster communication and can be ignored. See the following Microsoft support article: Overview of event ID 1123 and event ID 1122 logging in Windows 2000-based and Windows Server 2003-based server clusters (http://support.microsoft.com/?kbid=892422)
The NetApp Storage agent does not appear to be collecting any data. In the data provider log file, the following message is displayed: `Class loading error; cannot continue. Ensure that manageontap.jar is in the data provider's classpath.`	Ensure that the NetApp Manageability SDK JAR file is copied to the `lib` directory for the data provider.
The error message `Error while checking the Tivoli object dispatcher (oserv) status` is displayed when you attempt to run a Take Action command	Ensure that the agent is started with a user ID with sufficient TME privileges. For more information, see For more information, see "Agent installation and configuration" in the *IBM Tivoli Monitoring for Virtual Environments Agent for NetApp Storage Installation and Configuration Guide*.

Table 5. Agent problems and solutions (continued)	
Problem	**Solution**
Historical views are not working correctly.	Check for configuration problems: 1. Make sure that the IBM Tivoli Warehouse Proxy Agent and the historical data collection are correctly configured. For more information, see the *IBM Tivoli Monitoring Administrator's Guide*. 2. Right-click any of the historical views (for example, Events Input/Output to Rule Engine By Event Class - Last 24hrs). 3. Click **Properties**. 4. In the left pane of the **Properties** window, select each historical view you want to configure. 5. In the right pane of the **Properties** window, click **Click here to assign query**. The **Query Editor** window opens with a query selected in the right pane. 6. Click **OK** twice. 7. Refresh the Tivoli Enterprise Portal, or switch to another workspace and then back to the workspace containing the historical view.
In the status-based Event Distribution workspaces (OPEN, ACKNOWLEDGED, and CLOSED), the "events by host" and "events by source" views do not show any data.	Ensure that you have enabled the host and event source dimensions for collection of event distribution data: 1. Right-click **Monitoring Agent for Tivoli Enterprise Console**. 2. Click **Configure** (**Reconfigure** on Windows systems). 3. Click **OK** until you see the IBM Tivoli Monitoring for **Tivoli Enterprise Console** window. 4. Select the **Event Distribution** tab. 5. To include the event source dimension, click **Include event source dimension** and then select **Yes**. 6. To include the host dimension, click **Include host dimension** and then select **Yes**. 7. Click **OK**. 8. Restart the agent.
Some situations do not fire even when their conditions are true.	Check the affected situations to ensure if started. By default, some situations are not enabled automatically at startup.

Table 5. Agent problems and solutions (continued)	
Problem	**Solution**
When using the F1 key or selecting **Help** > **Contents and Index**, you receive a message in your Microsoft Internet Explorer browser that states, "It seems javascript is disabled in your browser, enable it and reload again, or click here to view without javascript." If you select 'here', the Tivoli Enterprise Portal V6.1 Help is displayed, but the agent help is not.	Ensure that the local site is added to the trusted site for the browser, and then enable the javascript.
For the number of current physical Threads attribute (NET CLR Threads attribute group), you see a negative number in the Tivoli Enterprise Portal.	No solution is available for this problem.
A component task or Take Action command is run but the component or task view is not showing the expected result.	The component and task views are populated with cached data. The default refresh or sampling interval for this cached data is 15 minutes. This default sampling interval has been chosen so the agent does not put a significant load on the system or the Siebel server as it gathers the data. To modify the default refresh interval, set the **KUB_SRVRMGR_POLL_MINUTES** environment variable. The minimum allowable setting is 5 minutes.
The Managed System Name for the remote system keeps switching between agent instances.	The remote system has been defined in two different agent configurations. The remote system nodes must have a name that is unique across an IBM Tivoli Monitoring environment.
The Performance Object Status query has an incomplete description.	The query and Situation Editor windows can only display a maximum of 210 characters for the description. No solution is available for this problem at this time.
The Time Generated attribute in the Event Log attribute group does not show time according to the local time zone.	The Time Generated attribute displays the Greenwich Median Time (GMT). Based on the time difference in GMT and your local time, you can convert the time displayed by the Time Generated attribute to your local time. You can also see the value for the Timestamp attribute to see the local time at which the event is generated.

Table 5. 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 are displayed in the portal.	IBM Tivoli Monitoring products use Remote Procedure Call (RPC) to define and control product behavior. RPC is the mechanism that a client process uses 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 protocol (or delivery mechanism) for RPCs that you want. 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 by 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 another type of monitoring server process. 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 than 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) if each Tivoli Enterprise Monitoring Server on that image reports to a different hub. By definition, one Tivoli Enterprise Monitoring Server hub is available per monitoring enterprise, so this architecture limit has been reduced to one Tivoli Enterprise Monitoring Server per system image. No more than 15 IP.PIPE processes or address spaces can be active on a single system image. With the first limit expressed earlier, this second limitation refers specifically to Tivoli Enterprise Monitoring Agent processes: no more than 15 agents per system image. Continued on next row.

Table 5. Agent problems and solutions (continued)	
Problem	**Solution**
Continued from previous row.	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 the EPHEMERAL IP.PIPE process. (This process is IP.PIPE configured with the 'EPHEMERAL:Y' keyword in the **KDC_FAMILIES / KDE_TRANSPORT** environment variable). The number of ephemeral IP.PIPE connections per system image has no limitation. If ephemeral endpoints are used, the Warehouse Proxy agent is accessible from the Tivoli Enterprise Monitoring Server associated with the agents by using ephemeral connections either by running the Warehouse Proxy agent on the same computer or by using the Firewall Gateway feature. (The Firewall Gateway feature relays the Warehouse Proxy agent connection from the Tivoli Enterprise Monitoring Server computer to the Warehouse Proxy agent computer if the Warehouse Proxy agent cannot coexist on the same computer.)
When configuring an instance node by using NLV characters, after clicking OK, the window is not displayed.	This problem is a current limitation. Check future releases or service levels of IBM Tivoli Monitoring for this fix.
No "space" between words is displayed for the strings in the drop-down list of Advanced Filters panel.	This problem is a current limitation. Check future releases or service levels of IBM Tivoli Monitoring for this fix.
Names are truncated on the Properties panel.	Reopening the Properties panel might display the names correctly. If this solution does not work, this problem is a current limitation with no solution. Check future releases or service levels of IBM Tivoli Monitoring for this fix.
The Tivoli Enterprise Portal display names that do not match the Metasys name.	The Tivoli Enterprise Portal has more stringent restrictions on characters that are allowed in names, particularly subnode names. Metasys characters that do not meet these restrictions are automatically converted to "_" (underscore) for the Tivoli Enterprise Portal and the warehouse.
The Tivoli Enterprise Portal displays "Not Collected" in the summary attribute group.	The summary attribute group requires specific object names to be defined in Metasys. If the Metasys object is not the name that the documentation indicates is required, the Tivoli Enterprise Portal displays "Not Collected".
The Event Log attribute group displays a specific number of event viewer entries on the Tivoli Enterprise Portal, even if you define the maximum number of event viewer entries in the Tivoli Enterprise Portal environment variable.	There is no solution to this problem.

Table 5. Agent problems and solutions (continued)	
Problem	**Solution**
In the online help, if you click **Take Action**, the **Additional Information** section is displayed.	There is no solution to this problem.
The Event Category attribute in the Event Log workspace displays incorrect data.	There is no solution to this problem.
Some events are initially visible in the Tivoli Enterprise Portal, but no new events are generated even though the log sources contain records that match expressions in the format file.	If the agent is configured to send EIF events, but no EIF receiver is configured or running (such as an OMNIbus probe) to receive the events, the agent's EIF reception log fills and no events can be processed. If you do not want EIF events sent, complete the following steps: 1. Stop the agent. 2. Reconfigure the agent and set the *Send EIF Events to OMNIbus* configuration value to "No". 3. Start the agent. If you want EIF events sent, complete the following steps: 1. Ensure that the EIF receiver is running. 2. Verify the EIF settings in the agent's configuration file. 3. If too many events are sent, the EIF event cache may not be large enough to handle the event storm. Increase the value of the `BufEvtMaxSize` configuration value in the agent's configuration file.
An agent is configured to send EIF events, stops processing events at a time when there are a large number of events generated and appears to hang.	The EIF event cache may not be large enough to handle the event storm. Increase the value of the `BufEvtMaxSize` configuration value in the agent's configuration file.
If the EIF configuration is set to connection oriented, `ConnectionMode=co` or `ConnectionMode=connection_oriented` in the Log File agent configuration file, and the EIF receiver is down when the agent starts, the remote receiver does not respond for approximately two minutes. The agent is not monitoring the logs during this time. If Profiles/subnodes are in use, and each `.conf` file is configured the same way, these delays are sequential.	To avoid this issue, ensure the EIF receiver is up and running when the agent starts, or use the `connection_less` option for event delivery.

Table 5. Agent problems and solutions (continued)	
Problem	**Solution**
You cannot view recent historical data in workspaces that query tables such as the KBNDPSTA17 table. This problem is caused by some tables accumulating much more data than others and the Warehouse Proxy agent is not able to transfer data to the data warehouse faster than the rate at which the data is being accumulated. Another symptom of this problem is when the historical data files associated with these tables grow to large sizes that could result in unexpectedly running out of space on your system.	To solve this problem reduce the amount of time that historical data is kept. The default is set to 24 hours. Also, consider not collecting historical data for tables that collect a large amount of data; however, this is not a best practice.
The agent starts and you receive the following message: `"Requested attribute group does not exist" in log file.`	This message is displayed because the agent is attempting to perform data collection for an attribute group before that attribute group has been registered. This problem is common because of timing during start up. After the attribute is registered, data collection will resume as normal.

Workspace troubleshooting

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Problems can occur with general workspaces and agent-specific workspaces.

Table 6 on page 33 contains problems and solutions related to workspaces.

Table 6. Workspace problems and solutions	
Problem	**Solution**
When the historical data is stored at the Tivoli Enterprise Monitoring Server, you might find the following situations when you want to view historical data in workspaces: • Historical data is not available during the specified time span. • The displayed historical data contains inaccurate time information.	Check the following items in your environment: • Options for historical data collection are specified correctly. • If the historical data is collected by the Summarization and Pruning monitoring agent, the Summarization and Pruning agent starts collecting the data correctly. • You do not use the Sort By, Group By, or First/Last functions in your queries in the Tivoli Enterprise Portal. These advanced functions are not supported by historical data. If the problem still exists, it is caused by the time difference between the Tivoli Enterprise Monitoring Server and the monitoring agent. If the components are in different time zones, consider the time difference when querying historical data. To avoid this problem, either eliminate the time difference or specify TEMA as the collection location for historical data.

Table 6. Workspace problems and solutions (continued)

Problem	Solution
The process application components are available, but the Availability status shows PROCESS_DATA_NOT_ AVAILABLE.	This problem occurs because the PerfProc performance object is disabled. When this condition exists, IBM Tivoli Monitoring cannot collect performance data for this process. Use the following steps to confirm that this problem exists and to resolve it: 1. In the Windows **Start** menu, click **Run**. 2. Type `perfmon.exe` in the **Open** field of the **Run** window. The **Performance** window is displayed. 3. Click the plus sign (+) in the toolbar. The **Add Counters** window is displayed. 4. Look for **Process** in the **Performance object** menu. 5. Complete one of the following actions: • If you see **Process** in the menu, the PerfProc performance object is enabled and the problem is coming from a different source. You might need to contact IBM Software Support. • If you do not see **Process** in the menu, use the Microsoft utility from the Microsoft.com Operations website to enable the PerfProc performance object. The **Process** performance object becomes visible in the **Performance object** menu of the **Add Counters** windows, and IBM Tivoli Monitoring is able to detect Availability data. 6. Restart the monitoring agent.
No Data in Workspace View or Error code = 0x80041003 The current user does not have permission to perform the action in agent log.	The agent must be started with a valid ID on all nodes of the cluster. On the computer running the agent, use the following steps: 1. Start Manage Tivoli Enterprise Monitoring Services. 2. Select **Actions** > **Change Startup** > **This Account**. 3. Enter the user ID and password that are valid on all nodes of the cluster. 4. Click **OK**.

Table 6. Workspace problems and solutions (continued)

Problem	Solution
Message IDs are appearing in portal views instead of English text or the appropriate language text.	This problem can happen when the Desktop browser is open during agent installation causing the `cnp.bat` file to be locked. `CNP.bat` was not updated to include the language .jar file. To manually repair this file, complete the following steps: 1. Edit the `cnp.bat` file. 2. Append to the classpath `@set CLASSPATH kq5_resources.jar` to `cnp.bat` -Or- 1. Shut down the Configuration tool. 2. Add Tivoli Enterprise Monitoring Server Application support for the agent.
Event Log workspace events are unfiltered, are not collected more than every 60 seconds, and are removed from the Event Log Views after 1 hour of being received.	All events currently in the Application Event Log are sent to the Tivoli Enterprise Monitoring Server when the agent starts. Environment variables that control the behavior of the Event Log Workspace are stored in the agent ENV file on the Tivoli Enterprise Monitoring Agent where the agent is running. These variables are stored: **CDP_DP_CACHE_TTL** This value is the minimum number of seconds before data (for a particular table) is collected again. By default this variable is present in the ENV file and the value is set to 60. **CDP_NT_EVENT_LOG_GET_ALL_ENTRIES_FIRST_TIME** This variable determines whether the agent sends all events currently in the Application Event Log to the Tivoli Enterprise Monitoring Server when the agent starts. Legal values are YES and NO. By default this variable is present in the ENV file and the value is set to NO. **CDP_NT_EVENT_LOG_CACHE_TIMEOUT** This variable determines how long in seconds that events are displayed in the Tivoli Enterprise Monitoring Server Event Log Views. By default, this variable is *not* present in the ENV file. A default value of 3600 (1 Hour) is used unless overridden by the presence of this variable in the agent ENV file. The minimum legal value is 300. To view or edit the agent ENV file on the Tivoli Enterprise Monitoring agent where the agent is installed, use Manage Tivoli Enterprise Monitoring Services to select the agent. Right-click and select **Advanced - Edit ENV File**. The agent must be restarted to implement changes.

Table 6. Workspace problems and solutions (continued)

Problem	Solution
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 sufficient space is available to display all characters of the attribute name.
At the end 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 cannot be seen.	Use the following managing options for historical data collection: • Basic historical data collection populates the Warehouse with raw data. This type of data collection is turned off by default. For information about managing this feature including how to set the interval at which data is collected, see "Managing historical data" in the *IBM Tivoli Monitoring Administrator's Guide*. By setting a more frequent interval for data collection, you reduce the load on the system incurred every time data is uploaded. • Use the Summarization and Pruning agent to collect specific amounts and types of historical data. Historical data is not displayed until the Summarization and Pruning monitoring agent begins collecting the data. By default, this agent begins collection at 2 a.m. daily. At that point, data is visible in the workspace view. For information about how to modify the default collection settings, see "Managing historical data" in the *IBM Tivoli Monitoring Administrator's Guide*.
Historical data collection is unavailable because of incorrect queries in the Tivoli Enterprise Portal.	The Sort By, Group By, and First/Last functions column are not compatible with the historical data collection feature. Use of these advanced functions makes a query ineligible for historical data collection. Even if data collection has started, you cannot use the time span feature if the query for the chart or table includes column functions or advanced query options (Sort By, Group By, First / Last). To ensure support of historical data collection, do not use the Sort By, Group By, or First/Last functions in your queries. For information about the historical data collection function, See "Managing historical data" in the *IBM Tivoli Monitoring Administrator's Guide* or the Tivoli Enterprise Portal online help .

Table 6. Workspace problems and solutions (continued)	
Problem	**Solution**
When you use a long process name in the situation, the process name is truncated.	Truncation of process or service names for situations in the Availability table in the portal display is the expected behavior. The maximum name length is 100 bytes.
Regular (non-historical) monitoring data fails to be displayed.	Check the formation of the queries you use to gather data. For example, look for invalid SQL statements.
Historical data is unavailable.	• Local time differences for the Tivoli Enterprise Portal, Tivoli Enterprise Monitoring Server, and the monitoring agent can affect history. History is stored at the monitoring agent. • Check that a directory is present on the shared disk and that all the agents are configured to use that directory. • Check for OpenHistoryFiles errors in the agent log to see if history files are created. • If no shared disk is provided for the agent, history must be stored at the Tivoli Enterprise Monitoring Server. Ensure that history is set up to be stored at Tivoli Enterprise Monitoring Server. • If you have a hub and a remote Tivoli Enterprise Monitoring Server, start historical data collection correctly on that Tivoli Enterprise Monitoring Server.
No row of data for 64-bit applications is displayed in the workspaces when the monitoring agent is running on a 64-bit operating system.	The Tivoli Enterprise Portal shows data only for 32-bit applications. No solution is available for this problem at this time.
Navigator items and workspace titles are labeled with internal names such as `Kxx:KXX0000` instead of the correct names (such as Disk), where XX and xx represent the two-character agent code.	Ensure that application support has been added on the monitoring server, portal server, and portal client. For more information about installing application support, see "Installing and enabling application support" in the *IBM Tivoli Monitoring Installation and Setup Guide*.

Table 6. Workspace problems and solutions (continued)	
Problem	**Solution**
The Event Log workspace events are removed from the Event Log view after every 100 data rows.	Environment variables that control the behavior of the Event Log workspace are stored in the agent ENV file on the Tivoli Enterprise Monitoring Agent where the agent is running. The *CDP_PURE_EVENT_CACHE_SIZE* variable in the agent ENV file controls the number of data rows that are cached. By default the value is set to 100. You can modify the value for the *CDP_PURE_EVENT_CACHE_SIZE* variable to include the number of data rows that you require. To view or edit the agent ENV file, on the Tivoli Enterprise Monitoring agent where the agent is installed, use Manage Tivoli Enterprise Monitoring Services to select the agent. Right-click the agent, click **Advanced , and click Edit ENV File**. Restart the agent to implement the changes.
No data is returned in any workspace for a certain period of time, for example, 1 minute.	This problem occurs because no request is processed until the previous request completes or exceeds the maximum time of data collection. Possible reasons for this problem are that the database is too busy to return data, or problems occur in the Oracle database, for example, SQL execution problems. Check the database status and tune the database, or solve the problems in the Oracle database. If the response time of data collection requests is still not acceptable after tuning the database, you can change the maximum time of data collection. To control the maximum time of data collection for all attribute groups, set the **CDP_COLLECTION_TIMEOUT** environment variable, the default value of which is 60 seconds. When the value for maximum time is longer, you are more likely to get data for a special attribute group that takes a long time to respond. But you are also more likely to block other data collection requests in that period of time. To avoid blocking data collection requests from a different database connection within the same agent instance, configure the database connection with this problem to a separate agent instance.
When viewing workspaces that contain many labels, some of the text in the labels is difficult to read.	Use your mouse to hover over the labels to display a tooltip that provides the text in the labels.

Situation troubleshooting

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Problems can occur with situations and situation configuration.

Table 7 on page 39 contains problems and solutions for situations.

Table 7. Situation problems and solutions

Problem	Solution
Multiple events are triggered by a situation, but only one item is displayed in the situation event console.	Access the Situation Editor view for the situation. Click **Advanced** in the **Formula** tab. Specify the display item to an appropriate attribute that can distinguish each item. The display item is an identifier that triggers the situation if there is more than one event.
Monitoring activity requires too much disk space.	Check the RAS trace logging settings that are described in "Setting RAS trace parameters by using the GUI" on page 9. For example, trace logs grow rapidly when you apply the ALL logging option.
Monitoring activity requires too many system resources.	See the information about disk capacity planning for historical data in the Reference guide for the agent for a description of 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 a Linux system, the 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. In the example, you can select the **% Memory Free** attribute and avoid the need for math operators.
You want to change the appearance of situations when they are displayed in the navigation tree.	1. Right-click an item in the navigation tree. 2. Click **Situations** in the menu. The **Situation Editor** window is displayed. 3. Select the situation that you want to modify. 4. Use the **State** menu to set the status and appearance of the Situation when it triggers. **Note:** The **State** setting is not related to severity settings in the Tivoli Enterprise Console.
When a situation is triggered in the Event Log attribute group, it remains in the Situation Event Console as long as the event ID entry is present in the Event Log workspace. When this event ID entry is removed from the Event Log workspace on the Tivoli Enterprise Portal, the situation is also cleared even if the actual problem that caused the event is not resolved, and the event ID entry is also present in the Windows Event Viewer.	A timeout occurs on the cache of events for the NT Event Log group. Increase the cache time of Event Log collection to meet your requirements by adding the following variable and timeout value to the K*pc*ENV file for the agent (where *pc* is the two-letter product code): `CDP_NT_EVENT_LOG_CACHE_TIMEOUT=3600` This variable determines how long events from the NT Event Log are kept.

Table 7. Situation problems and solutions (continued)	
Problem	**Solution**
Events cannot be displayed in the (Tivoli Enterprise Console) view when a situation name is longer than 31 bytes. The situation name might appear truncated in the message column.	The situation name must be no more than 31 bytes long and cannot contain the hyphen (-) character. Recreate the situation using the specifications described in the preceding row.
An event has not been received by your event consumer, or has been received and is truncated.	Adjust the `EventMaxSize` attribute in the agent configuration file.
The value of a `CustomInteger` attribute is not as expected	Check that the value being mapped to the `CustomInteger` attribute is an integer. For example mapping the following values to a `CustomInteger` attribute will give unexpected results: • Mapping the string `"twenty"` to a `CustomInteger` attribute will result in a zero value • Mapping the floating point number `"1.9"` to a `CustomInteger` attribute will result in a value of 1 • Mapping the string `"2 thousand"` to a `CustomInteger` attribute will result in a value of 2
After changing a situation name, the TEC (Tivoli Enterprise Console) view displays the original situation name in the message column.	Use **Create Another** to create a new situation. –OR– Use `situation_fullname` in the Event Detail view to check the actual situation name. Complete the following steps to access the event detail view: 1. Select the event. 2. Click **Details**. 3. Select the **Attribute list** tab and scroll the attribute list panel to `situation_fullname`.
When editing some predefined situations, extra attribute groups might be found and the selected attribute group name might be incorrect.	Manually recreate the situation.
If the Expert Advice for a situation contains a hyperlink to an external website (for example, a Microsoft TechNet website) and you click the hyperlink, the website opens in an external window. However, the external window stops responding.	The external window responds after you close the Preview window and Situation Editor window.
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 not displayed, confirm that the monitoring server has been seeded for the agent. If not, seed the server, as described in the *IBM Tivoli Monitoring Installation and Setup Guide*.

Table 7. Situation problems and solutions (continued)	
Problem	**Solution**
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 required.
The situation did not activate at startup.	Manually recycle the situation as follows: 1. Right-click the situation and select **Stop Situation**. 2. Right-click the situation and select **Start Situation**. **Note:** You can permanently avoid this problem by selecting the **Run at Startup** check box 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 did not occur even though the predicate was correctly specified.	Check the logs, reports, and workspaces.
A situation fires on an unexpected managed object.	Confirm that you distributed and started the situation on the correct managed system.
The product did not distribute the situation to a managed system.	Click the **Distribution** tab and check the distribution settings for the situation.

Table 7. Situation problems and solutions (continued)

Problem	Solution

The situation does not fire.	This problem can be caused when 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.
	
	In the **Formula** tab, analyze predicates as follows:
	
	1. Click the **fx** icon in the **Formula** area. The **Show formula** window is displayed.
	   a. Confirm the following details in the **Formula** area of the window:
	   • 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 numeric values in the formula match your monitoring goal.
	   b. (Optional) Select 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. (Optional) In the **Formula** area of the **Formula** tab, temporarily assign numeric values that 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 numeric values to valid levels so that you do not generate excessive monitoring data based on your temporary settings.
	
	For additional information about situations that do not fire, see "Situations are not firing" in the *IBM Tivoli Monitoring Troubleshooting Guide*.

Situation events are not displayed in the Events Console view of the workspace.	Associate the situation with a Navigator item. **Note:** The situation does not need to be displayed in the workspace. It is sufficient that the situation is associated with any Navigator item.

Table 7. Situation problems and solutions (continued)

Problem	Solution
You do not have access to a situation.	**Note:** You must have administrator privileges to complete these steps. 1. Click **Edit** > **Administer Users** to access the **Administer Users** window. 2. In the **Users** area, select the user whose privileges you want to modify. 3. In the **Permissions** tab, **Applications** tab, and **Navigator Views** tab, select the permissions or privileges that correspond to the user role. 4. Click **OK**.
A managed system seems to be offline.	1. Select **Physical View** and click the Enterprise Level of the navigator tree. 2. Click **View** > **Workspace** > **Managed System Status** to see a list of managed systems and their status. 3. If a system is offline, check network connectivity and the status of the specific system or application.
Situations that monitor missing processes indicate falsely that a process is missing. The situations mistakenly fire when the agent starts because the agent has registered attributes with the Tivoli Enterprise Monitoring Agent, and has received a request from a situation before the agent completes registration with the data provider.	Add the following value to the va.ini file, and then restart the agent: CDP_COLLECTION_DELAY=5
Associations of custom situations with navigator items break after upgrading the agent support.	Create the associations again by completing the following steps: 1. Right-click the navigator item, and then click **Situations**. A list of situations that are associated with the navigator item is displayed. **Note:** If the custom situation that you want to associate is available in the list, ignore remaining steps. 2. Click the **Set Situation filter criteria** icon. 3. Select the **Eligible for Association** check box, and then click **OK**. A list of situations is displayed. 4. Right-click the situation that you want to associate with the navigator item, and then click **Associate**. The situation is associated with the navigator item.

Take Action commands troubleshooting

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Problems can occur with Take Action commands.

Table 8 on page 44 contains problems and solutions that can occur with Take Action commands.

When each Take Action command runs, it generates a log file listed in Table 2 on page 6.

Table 8. Take Action commands problems and solutions

Problem	Solution
Take Action commands often require several minutes to complete.	Allow several minutes. If you do not see a message advising you of completion, try to run the command manually.
Situations fail to trigger Take Action commands.	Attempt to manually run the Take Action command in the Tivoli Enterprise Portal. If the Take Action command works, look for configuration problems in the situation. See "Situation troubleshooting" on page 38. If the Take Action command fails, for general information about troubleshooting Take Action commands, see the *IBM Tivoli Monitoring Troubleshooting Guide*.
Take Action commands fail, and the return codes are not zero.	Click the **TakeAction Result** navigator item to access the TakeAction Status workspace, and check the detailed message from the TakeAction PL/SQL Status view or the TakeAction SELECT status view. A value of -2 in the Action App Return Code column indicates a timeout issue. To solve the timeout problem, increase the value of the **CDP_DP_ACTION_TIMEOUT** environment variable. However, if the action timeout is too large, any subsequent command or situation request might be blocked.

Chapter 4. Support information

If you have a problem with your IBM software, you want to resolve it quickly.

IBM provides the following ways for you to obtain the support you need:

Online

The following websites contain troubleshooting information:

- Go to the IBM Software Support website (http://www.ibm.com/support/entry/portal/software) and follow the instructions.
- Go to the Application Performance Management page in Service Management Connect (http://www.ibm.com/developerworks/servicemanagement/apm/index.html). Feel free to contribute to the wikis, blogs, and forums.

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 the IBM Support Assistant website (http://www.ibm.com/software/support/isa).

Chapter 5. Informational, warning, and error messages overview

Messages relay information about how the system or application is performing and can alert you to exceptional conditions when they occur.

Messages are sent to an output destination, such as a file, database, or console screen.

If you receive a warning or error message, you can do one of the following actions:

- Follow the instructions listed in the Detail window of the message if this information is included there.
- Consult the message details listed in this topic to see what action you can take to correct the problem.
- Consult the message log for message ID, text, time, and date of the message, as well as other data you can use to diagnose the problem.

Message format

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The message format contains a message ID and text, an explanation, and an operator response.

Agent messages have the following format:

Message ID and text
Explanation
Operator Response

The message ID has the following format:

```
CCC####severity
```

where:

CCC
Prefix that indicates the component to which the message applies. The following components are used:

K*XX*
Three-character product code for the agent.

####
Number of the message

severity
Severity of the message. Three levels of severity are used:

I
Informational messages provide feedback about something that happened in the product or system that might be important. These messages can provide guidance when you are requesting a specific action from the product.

W
Warning messages call your attention to an exception condition. The condition might not be an error but can cause problems if not resolved.

E
Error messages indicate that an action cannot be completed because of a user or system error. These messages require user response.

The *Text* of the message provides a general statement regarding the problem or condition that occurred. The *Explanation* provides additional information about the message and the possible cause for the

condition. The *Operator Response* provides actions to take in response to the condition, particularly for error messages (messages with the "E" suffix).

Note: Many message texts and explanations contain variables, such as the specific name of a server or application. Those variables are represented in this topic as symbols, such as "&1." Actual messages contain values for these variables.

Notices

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