Tivoli® IBM Tivoli Monitoring

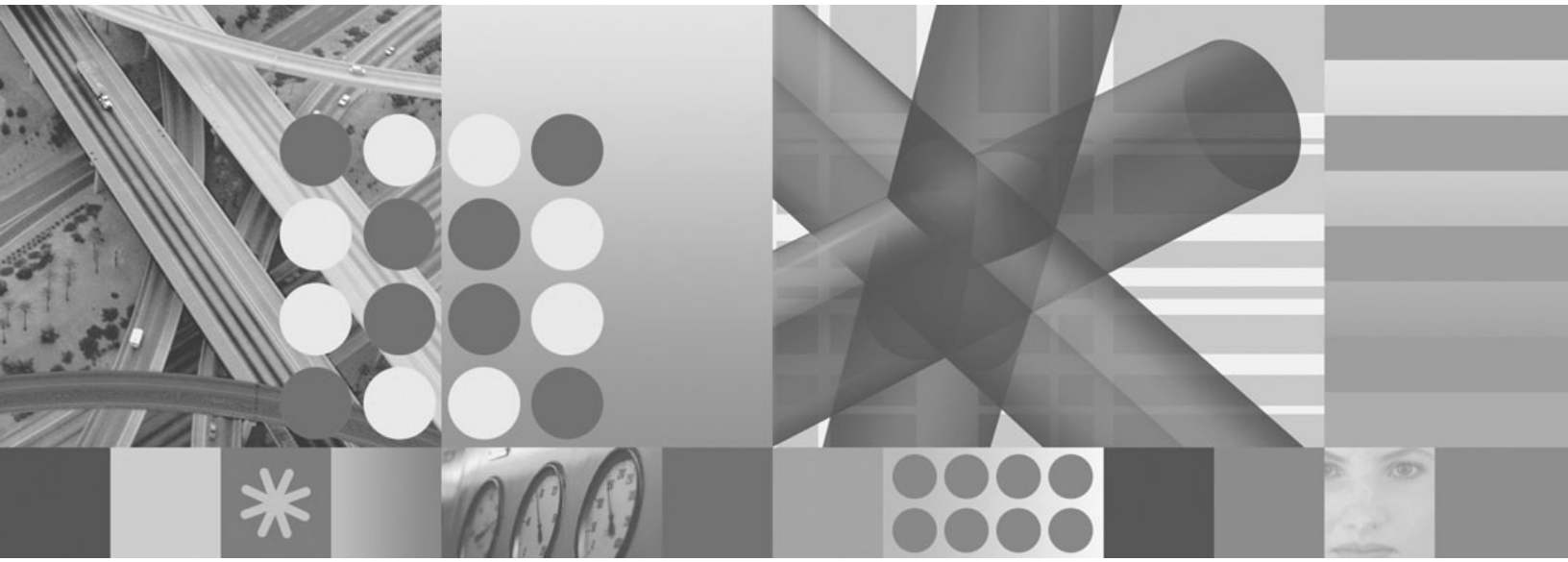
Version 6.2

Problem Determination Guide

GC32-9458-01

Tivoli® IBM Tivoli Monitoring

Version 6.2



Problem Determination Guide

GC32-9458-01

Note
Before using this information and the product it supports, read the information in "Notices" on page 163.

This edition applies to version 6.2.0 of IBM Tivoli Monitoring (product number 5724-C04) and to all subsequent releases and modifications until otherwise indicated in new editions.

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Chapter 1. Introduction to problem determination

This guide helps you to decide where to begin looking for causes when you have a problem with IBM Tivoli Monitoring. Usually, you start with a symptom, or set of symptoms, and trace them back to their cause. This process is called *problem determination*. Problem determination is not the same as problem solving, although during the process of problem determination, you can obtain enough information to solve a problem. Examples of situations where this can happen include:

- End-user errors
- Application programming errors
- System programming errors, such as in resource definitions

However, you might not always be able to solve a problem yourself after determining its cause. For example, a performance problem might be caused by a limitation of your hardware. If you are unable to solve a problem on your own, contact IBM® Software Support for a solution.

Sources of problem determination information

The primary troubleshooting feature is logging. *Logging* refers to the text messages and trace data generated by the software. Messages and trace data are sent to an output destination, such as a console screen or a file.

Typically, text messages relay information about the state and performance of a system or application. Messages also alert the system administrator to exceptional conditions when they occur. Consult the explanation and operator response associated with the displayed messages to determine the cause of the failure. See the document *IBM Tivoli® Monitoring Messages* for message information.

Trace data capture 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 the Chapter 2, “Tools,” on page 5 for more information about tracing.

Collecting data

If you have a problem that you are unable to solve using the information in this guide, gather the following information that relates to the problem and contact IBM Software Support for further assistance.

- Monitored application file as specified on the SOURCE FILE statement, if applicable.
- Appropriate IBM Tivoli Monitoring RAS1 trace output.
- Description of the operation scenario that led to the problem.
- Incorrect output, such as Tivoli Enterprise Portal screen prints or a description of what you observed, if applicable.
- Log files

  Collect logs from failing systems. You can collect all logs or logs of a certain type such as, RAS (reliability, availability, and serviceability) trace logs or message logs.
- Application information:

  - Version number and patch level
  - Sample application data file (if monitoring a file)
- Operating system version number and patch level
- Messages and other information displayed on the screen
- Version number of the following members of the monitoring environment:
  - IBM Tivoli Monitoring. Also provide the patch level, if available.
  - Monitoring Agent version number
  - Tivoli Enterprise Portal. Select **About Tivoli Enterprise Portal ...** from the Help menu.

    Note: The version number of the Tivoli Enterprise Portal and the Tivoli Enterprise Portal server must always be synchronized.
- Screen captures of incorrect output, if any.
- If the systems stops on Windows®, collect the drwtsn32.log and user.dmp files if available. The drwtsn32.log and user.dmp files are located in

  `\Documents and Settings\All Users\Documents\DrWatson`

  1. Enter the following command at the command prompt to enable Dr. Watson as default debugger:

     `drwtsn32 –i`
  2. Enter the following command at the command prompt to open the Dr. Watson configuration dialog:

     `drwtsn32`
  3. Set the **Crash dump Type** to **FULL**.
  4. Remove the check from the **Dump Symbol Table** box.
  5. Place a check in the **Dump all Thread Contexts** box.
  6. Place a check in the **Create Crash Dump File** box.
- If the system stops on UNIX-based systems, collect the core dump file from *install_home*/bin directory, where *install_home* is the directory path where you installed the monitoring agent.

Problem classification

The first task in problem determination is to determine the origin of the problem, or which component or function is experiencing a problem. To assist you in determining the origin of the problem, collect documentation at the time of the error. You might experience problems with IBM Tivoli Monitoring in the following areas:

- Installation
- Upgrading
- Configuration
- Connectivity
- Tivoli Enterprise™ Portal
- Tivoli Enterprise Portal Server
- Tivoli Enterprise Monitoring Server
- Tivoli Enterprise Monitoring Agent deployment
- Databases
- Tivoli Data Warehouse
- Universal Agent

- IBM Tivoli Enterprise Console®

Finding release notes

You can find release note information online by viewing IBM Technotes. Technotes replace the Release Notes manual for this product. Technotes are short documents that cover a single topic. You can search the Technotes collection for common problems and solutions, as well as known limitations and workarounds. Technotes are continuously updated to provide current product information.

The following two procedures describe how to view Technotes and subscribe to have future Technotes e-mailed to you. Alternatively, you can watch demos of these procedures at the following Web site:

http://www-306.ibm.com/software/support/sitetours.html

Viewing Technotes

Perform the following actions to access Technotes for this product:

1. Launch the IBM Software Support Web site: http://www.ibm.com/software/support
2. In the Products A - Z field, select the product name to open the product-specific support site.

   For this product, select **I > IBM Tivoli Monitoring**..
3. In the **Self help** field, click **Technotes**.
4. Scroll through the Technotes, or you can optionally type a search term to refine the displayed data.

   For tips on refining your search, click **Search tips**.

Creating an e-mail subscription to Technotes

You can subscribe to e-mail notification about product tips and newly published fixes through My support, a personalized portal that enables you to:

- Specify the products for which you want to receive notifications
- Choose from flashes, downloads, and Technotes
- Receive an e-mail update in your inbox

Perform the following actions to subscribe to My support e-mails:

1. Launch an IBM support Web site such as the following site:

   http://www.ibm.com/support/us/
2. Click **My support** in the upper-right corner of the page.
3. If you have not yet registered, click **register** in the upper-right corner of the support page to create your user ID and password.
4. Sign in to **My support**.
5. On the My support page, click **Edit profile**.
6. Select a product family and continue setting your preferences to specify the information you want in your e-mails.
7. Click **Submit**.

Chapter 2. Tools

IBM Tivoli Monitoring provides several tools; some include functionality for diagnosing problems. The primary diagnostic tool of IBM Tivoli Monitoring is logging. *Logging* refers to the text messages and trace data generated by the software. Messages and trace data are sent to an output destination, such as a console screen or a file.

Trace logging

Trace logs capture information about the operating environment when component software fails to operate as intended. The principal log type is the reliability, availability, and serviceability (RAS) trace log. RAS logs are in the English language only. The RAS trace log mechanism is available on the Tivoli Enterprise Monitoring Server, the Tivoli Enterprise Portal Server, and the monitoring agent. By default, the logs are stored in the installation path for IBM Tivoli Monitoring. IBM Software Support uses the information captured by trace logs to trace a problem to its source or to determine why an error occurred. The default configuration for tracing, such as whether tracing is enabled or disabled and trace level, depends on the source of the tracing. You can choose how many files to keep when the log rolls. If you cannot find the log files you need, restart the system and try again. This section includes instructions for configuring trace logging.

Table 1 lists the location of the log files directories.

Table 1. Location of log files on the Tivoli Enterprise Monitoring Server

Component	Windows	UNIX-based systems
Tivoli Enterprise Portal Server	*install_dir*\logs	*install_dir*/logs/ hostname_PC_*timestamp*.log where: *install_dir* Specifies the directory where Tivoli Enterprise Portal Server was installed. *hostname* Specifies the name of the system hosting the product. *PC* Specifies the product code. cq for the Tivoli Enterprise Portal Server. *timestamp* A decimal representation of the time at which the process was started.
Tivoli Enterprise Portal browser client	C:\Documents and Settings\ Administrator\ Application Data\ Java\Deployment\ log\plugin142.trace	None.

Table 1. Location of log files on the Tivoli Enterprise Monitoring Server (continued)

Component	Windows	UNIX-based systems
Tivoli Enterprise Portal desktop client	*install_dir*\CNP\kcjerror.log *install_dir*\CNP\kcjras1.log When launched via Java™ Web Start: %USERPROFILE%\Application Data\IBM\Java\Deployment\log\javawsnnnnn.trace where 'nnnnn' is a unique, randomly generated numeric suffix to support generational logs (i.e., the last generated log will not be overlayed by the most current execution of Tivoli Enterprise Portal using Java Web Start. This is in contrast to the Tivoli Enterprise Portal Browser client, which has a fixed name and is overlayed with each execution cycle.	*install_dir*/logs/hostname_PC_*timestamp*.log where: *install_dir* Specifies the directory where Tivoli Enterprise Portal Server was installed. *hostname* Specifies the name of the system hosting the product. *PC* Specifies the product code. cq for the Tivoli Enterprise Portal Server. *timestamp* A decimal representation of the time at which the process was started. When launched via Java Web Start: ${user.home}/.java/deployment/log/javawsnnnnn.trace where 'nnnnn' is a unique, randomly generated numeric suffix to support generational logs (i.e., the last generated log will not be overlayed by the most current execution of Tivoli Enterprise Portal using Java Web Start. This is in contrast to the Tivoli Enterprise Portal Browser client, which has a fixed name and is overlayed with each execution cycle.
Tivoli Enterprise Monitoring Server	*install_dir*\logs*hostname_PC_HEXtimestamp-nn*.log where: *install_dir* Specifies the directory where Tivoli Enterprise Monitoring Server was installed. *PC* Specifies the product code. ms for Tivoli Enterprise Monitoring Server *HEXtimestamp* A hexadecimal representation of the time at which the process was started. *nn* Represents the circular sequence in which logs are rotated. Ranges from 1-5, by default, though the first is always retained, since it includes configuration parameters.	*install_dir*/logs/*hostname_PC_timestamp*.log where: *install_dir* Specifies the directory where Tivoli Enterprise Portal Server was installed. *hostname* Specifies the name of the system hosting the product. *PC* Specifies the product code. cq for the Tivoli Enterprise Portal Server. *timestamp* A decimal representation of the time at which the process was started.

Table 1. Location of log files on the Tivoli Enterprise Monitoring Server (continued)

Component	Windows	UNIX-based systems
Monitoring agents	*install_dir*\tmaitm6\logs\ *hostname_PC_HEXtimestamp-nn*.log where: *install_dir* Specifies the directory where monitoring agent was installed. *PC* Specifies the product codes, for example, um for Universal Agent or nt for Windows. *HEXtimestamp* A hexadecimal representation of the time at which the process was started. *nn* Represents the circular sequence in which logs are rotated. Ranges from 1-5, by default, though the first is always retained, since it includes configuration parameters.	*install_dir*/logs/*hostname_PC_timestamp*.log where: *install_dir* Specifies the directory where Tivoli Enterprise Portal Server was installed. *hostname* Specifies the name of the system hosting the product. *PC* Specifies the product code. cq for the Tivoli Enterprise Portal Server. *timestamp* A decimal representation of the time at which the process was started.
IBM Tivoli Warehouse Proxy agent	*install_dir*\logs*hostname_PC_ timestamp*.log where *PC* Specifies the product code. hd is the product code for the IBM Tivoli Warehouse Proxy agent	Not supported.
IBM Tivoli Summarization and Pruning agent	The Summarization and Pruning Agent uses C-based RAS1 tracing, Java-based RAS1 tracing and Java-based internal tracing. By default, Summarization and Pruning Agent trace data is written to a file in the logs subdirectory.	
	install_dir\logs*hostname_PC_ HEXtimestamp-nn*.log *install_dir*\logs*hos tname_PC_ ras1java_HEXtimestamp-nn*.log *install_dir*\logs*hostname_PC_ java_HEXtimestamp-nn*.log	*install_dir*/logs/*hostname_PC_ HEXtimestamp-nn*.log *install_dir*/logs/*hostname_PC_ras1java_ HEXtimestamp-nn*.log *install_dir*/logs/*hostname_PC_java_ HEXtimestamp-nn*.log
	where: *install_dir* Specifies the directory where monitoring agent was installed. *PC* Specifies the product codes, for example, sy for IBM Tivoli Summarization and Pruning agent. *HEXtimestamp* A hexadecimal representation of the time at which the process was started. *nn* Represents the circular sequence in which logs are rotated. Ranges from 1-5, by default, though the first is always retained, since it includes configuration parameters.	

Table 1. Location of log files on the Tivoli Enterprise Monitoring Server (continued)

Component	Windows	UNIX-based systems
IBM Tivoli Enterprise Console Event Forwarder	*install_dir*\logs*hostname_PC_HEXtimestamp-nn*.log where: *install_dir* Specifies the directory where Tivoli Enterprise Monitoring Server was installed. *PC* Specifies the product code. ms for Tivoli Enterprise Monitoring Server *HEXtimestamp* A hexadecimal representation of the time at which the process was started. *nn* Represents the circular sequence in which logs are rotated. Ranges from 1-5, by default, though the first is always retained, since it includes configuration parameters.	*install_dir*/logs/*hostname_PC_timestamp*.log install_dir/logs/hostname_PC_HEXtimestamp-nn.log where: *install_dir* Specifies the directory where Tivoli Enterprise Portal Server was installed. *hostname* Specifies the name of the system hosting the product. *PC* Specifies the product code. cq for the Tivoli Enterprise Portal Server. *timestamp* A decimal representation of the time at which the process was started.
IBM Tivoli Enterprise Console Situation Update Forwarder	c:\tmp\itmsynch\logs\synch_trace.log c:\tmp\itmsynch\logs\synch_msg.log	/tmp/itmsynch/logs/synch_trace.log tmp/itmsynch/logs/synch_msg.log
	Note: IBM Tivoli Enterprise Console Situation Update Forwarder logs are created on the IBM Tivoli Enterprise Console server.	

The log files are managed as follows:

- On Windows, the log file name includes a time stamp in hexadecimal format. By default, the logs are stored in the installation path for IBM Tivoli Monitoring. The following is an example of a log file name that includes the time stamp in hexadecimal format:

  ```
  ibm-kpmn803v01_cq_472649ef-01.log
  ```

- On UNIX-based systems, the log file name includes a time stamp. The UNIX-based systems RAS1 log files are stored in the /logs directory. The following is an example of a log files name that includes the time stamp:

  ```
  f50pa2b_ux_1112097194.log
  ```

Note: When you communicate with IBM Software Support, you must capture and send the RAS1 log that matches any problem occurrence that you report.

Installation log files

The following table lists and describes the log files created during installations.

Table 2. Installation log files

Windows	UNIX-based systems
• `ITM_HOME\InstallITM\Abort<Product_name><date_timestamp>.log` This log is created if an abort occurs for either a first time install or a modification of previous installation of IBM Tivoli Monitoring. • `ITM_HOME\InstallITM\<Product_name>_<timestamp>.log` This log is created during a normal clean installation. • `ITM_HOME\InstallITM\MOD_<Product_name>timestamp.log` This log is created if you modify an existing product specified with the PC, or when adding or deleting components. where: *Product_name* Specifies the product name. `IBM Tivoli Monitoring 20050923 1815.log` is the log file name for the IBM Tivoli Monitoring installation CD. *timestamp* A decimal representation of the time at which the process was started.	`$CANDLEHOME/logs/candle_ installation.log`

You can find a log for uninstallation on Windows in the root directory where the product was installed:

`Uninstall<PC><date_timestamp>.log`

UNIX installer and configuration logs

For tracing and logging java code (that is run on UNIX® systems), this mechanism enables problem debugging. Two sets of information are created – logs and traces. Logs (*.log) are globalized and traces (*.trc) are in English. They contain entry and exit parameters of method and stack traces for exceptions. The amount of information traced depends on the level of tracing set.

Level name	What is logged or traced
LOG_ERR	Only exceptions and errors are logged and traced
LOG_INFO	Also log messages are logged and traced - DEFAULT
DEBUG_MIN	Also most important method entries, exits and trace messages are traced
DEBUG_MID	Most of the method entries, exits and trace messages are traced
DEBUG_MAX	All of the method entries, exits and trace messages are traced

The level can be set in configuration files or by exporting an environment variable called TRACE_LEVEL with one of the values mentioned above. Configuration of RAS settings is stored in the following files:

- CH/config/ITMInstallRAS.properties (for installation)
- CH/config/ITMConfigRAS.properties (for configuration)

Callpoints are the only component that is handled differently, their logs and traces always go to the directory CH/InstallITM/plugin/executionEvents. The default location for installation is CH/logs/itm_install.log(.trc) and for configuration it is CH/logs/itm_config.log(.trc).

To gather all the needed logs and environment information in case of an error, use the pdcollect tool described in "pdcollect tool" on page 25.

Component	Location	File name
Install logs/traces	CH/logs	candle_installation.log itm_install.log (.trc)
Config logs/traces	CH/logs	itm_config.log (.trc)
Logs for component startup	CH/logs	pc.env (lists env variables passed to the agent) hostname_pc_ID.log
Callpoint logs/traces	CH/InstallITM/plugin/executionEvents /logs/timestamp/ install(config)/ plugin_type/pc	callpoint.trc (.log) *.stderr *.stdout

Upgrading from Tivoli Distributed Monitoring log file

All upgrade actions performed by the IBM Tivoli Monitoring Upgrade Toolkit are recorded in a central log with an associated user ID and a time stamp. Upgrade actions taken outside of the Upgrade Toolkit are not recorded in the log. The detailed results from running the Upgrade Toolkit are recorded in a log file.

Table 3. Upgrading from Tivoli Distributed Monitoring log file

Windows	UNIX-based systems
$DBDIR/AMX/logs/log_*tool*_*timestamp*.log	*$DBDIR*/AMX/logs/log_*tool*_*timestamp*.log

where:

$DBDIR
The Tivoli Management Environment® Framework environment variable that specifies the directory where the Object Repository (odb.bdb) is located.

tool Specifies the IBM Tivoli Monitoring Upgrade Toolkit tool: witmscantmr, witmassess, or witmupgrade.

timestamp
Specifies a time stamp that includes data and time of execution.

For example: log_witmscantmr_20050721_15_30_15.log

The log file name displays when the Upgrade Toolkit tool completes the upgrade operation. Each time a Upgrade Toolkit tool runs, its generates a new log file that is never reused by any tool. The contents of the log file conform to the Tivoli Message Standard XML logging format. The following example is an excerpt from an Upgrade Toolkit tool log file:

```
<Message Id="AMXUT2504I" Severity="INFO">
<Time Millis="1121977824199"> 2005.07.21 15:30:24.199 CST </Time>
<Server Format="IP">YFELDMA1.austin.ibm.com</Server>
```

```
<ProductId>AMXAMX</ProductId>
<Component>ScanTMR</Component>
</Component>1</ProductInstance>
<LogText><![CDATA[AMXUT2504I The software is creating a new baseline file
C:\PROGRA~1\Tivoli\db\YFELDMA1.db\AMX\shared\analyze\scans\
1889259234.xml.]];
</LogText>
<TranslationInfo Type="JAVA"
Catalog="com.ibm.opmt.utils.messages.MigrationManager_
msgs"
MsgKey="AMXUT2504I"><Param>
<![CDATA[C:\PROGRA~1\Tivoli\db\YFELDMA1.db\AMX\shared\analyze\scans\
1889259234.xml]];
</Parm></TranslationInfo>
<Principal></Principal>
</Message>
```

Reading RAS1 logs

This section provides an example of the Universal Agent RAS1 trace logs. By default, the Universal Agent RAS1 trace log lists the following details about the health of an ODBC data provider application:

- Whether the ODBC tables come online during startup.
- Whether the ODBC table data is collected.
- Errors with the ODBC-related status messages, including informational messages about when each ODBC connection completes.
- Errors that occur during ODBC data provider data retrieval, including errors in the ODBC driver code.
- Independent Software Vendor (ISV) API errors. (The Universal Agent makes API calls to the ISV ODBC driver to implement the connections and SQL select statements.)

The following RAS1 log excerpt lists ODBC status messages using default tracing:

```
KUMP_ProcessStartUpConfig") Loading metafile
<f:\candle\cma\metafiles\TIVOLI_DATA_WAREHOUSE.mdl>
from startup config file
f:\candle\CMA\WORK\KUMPCNFG_INST1
"DCHserver::dp_register") Application TIVOLI_DATA_WAREHOUSE
successfully registered"KUMP_ProcessStartUpConfig")
1 application metafile(s) processed from startup
config
file f:\candle\CMA\WORK\KUMPCNFG_INST1
"KUMP_StartDataProvider") Starting ODBC Data Provider...
"KUMP_WaitODBCsourceReadyForMonitor")
Reusing connection handle for ODBC source
TIVOLI_DATA_WAREHOUSE table <syscharsets>
"KUMP_ODBCserver") Successfully connected to ODBC source
TIVOLI_DATA_WAREHOUSE table <syscharsets>
"KUMP_WaitODBCsourceReadyForMonitor") Reusing connection handle
for ODBC source TIVOLI_DATA_WAREHOUSE table <syscomments>
```

The `Reusing connection handle` messages indicates the ODBC provider is reusing resource to conserve memory. The ODBC data provider allocates a connection for each metafile with multiple attribute groups that connect to the same data source using the same user ID and password combination. Each SQL Select statement that is run for the various attribute groups shares the same connection handle.

The following is an excerpt from later in the same log:

```
userDataList::calculateChecksum") Initial creation of catalog/attribute tables for
applName <Tivoli_Data_Warehouse>
"KUMP_ODBCserver") ODBC source <Tivoli_Data_Warehouse> table <syscharsets> is now
```

```
online to the data provider
"KUMP_ODBCserver") ODBC source <Tivoli_Data_Warehouse> table <syscacheobjects>
is now online to the data provider
"KUMP_ODBCserver") ODBC source <Tivoli_Data_Warehouse> table <syscomments>
is now online to the data provider"
```

Setting traces

When you encounter an error with IBM Tivoli Monitoring that requires contacting IBM Software Support, you might be asked to submit a copy of the error log. The error log is part of the trace diagnostic tool in Tivoli Enterprise Portal. It is set to log errors, and you can set other parameters for collecting specific details.

Setting the trace option for the Tivoli Enterprise Portal client trace

A log file is created automatically the first time you start Tivoli Enterprise Portal, and is named `install_dir\cnp\logs\kcjras1.log`. This log file contains all of the RAS1 tracing for the Tivoli Enterprise Portal client. Whenever you start a new work session, the log file is purged and rewritten for the current work session. If you want to preserve the log file from the last work session, you must rename it or copy it to another directory before starting Tivoli Enterprise Portal again. The kcj.log file contains errors generated by the Sun Java™ libraries used in the Tivoli Enterprise Portal client.

To set the trace options:

1. From the Tivoli Enterprise Portal menu, select **File** > **Trace Options**.
2. Select a trace class from the list or as instructed by IBM Software Support (such as UNIT:Workspace ALL):

   ALL provides data for all classes. Use the setting temporarily, because it generates large amounts of data.

   ERROR logs internal error conditions. This setting provides the minimum level of tracing, with little resource overhead, and ensures that program failures will be caught and detailed.

   NONE turns off the error log so no data is collected.
3. Click **OK** to close the window and turn on logging.

To set the trace log on UNIX systems:

Setting the trace option for the Tivoli Enterprise Portal Server trace

You must set the trace options for the Tivoli Enterprise Portal Server through Manage Tivoli Enterprise Monitoring Services. Before you set the trace options for the Tivoli Enterprise Portal Server, determine the trace string. The trace string specifies the trace setting. Set trace options for the Tivoli Enterprise Portal Server when you start the Tivoli Enterprise Portal Server. The log file continues to grow until you either turn off the trace or recycle the Tivoli Enterprise Portal Server.

On Windows systems:

1. On the computer where the Tivoli Enterprise Portal Server is installed, click **Start** > **Programs** > **IBM Tivoli Monitoring** > **Manage Tivoli Enterprise Monitoring Services.**
2. Right-click the Tivoli Enterprise Portal Server service.
3. Select **Advanced** > **Edit Trace Parms** to display the **Trace Parameters** window.
4. Select the RAS1 filters. The default setting is ERROR
5. Accept the defaults for the rest of the fields.

6. Click **OK** to set the new trace options.
7. Click **Yes** to recycle the service.

On UNIX systems:

1. Set the following variable in the $CANDLEHOME/config/cq.ini:

   ```
   KBB_RAS1=ERROR (UNIT:filter trace_level)
   ```

   where *filter* is the component you want to trace and *trace_level* is the level of tracing you want.
2. Recycle the Tivoli Enterprise Portal Server by "restarting" or "stop" and then "start".

Setting the trace option for the Tivoli Enterprise Monitoring Server trace

On Windows systems:

1. On the computer where the Tivoli Enterprise Monitoring Server is installed, select **Start** > **Programs** > **Tivoli Monitoring Services** > **Manage Tivoli Enterprise Monitoring Services**.
2. Right-click the Tivoli Enterprise Monitoring Server service.
3. Select **Advanced** > **Edit Trace Parms** to display the **Trace Parameters** window.
4. Select the RAS1 filters. RAS1 is the unit trace for the Tivoli Enterprise Monitoring Server. The default setting is ERROR.

   Note: There must be a space between each UNIT trace setting. For example, ERROR (UNIT:kdy all) (UNIT:kfaprpst all).
5. Accept the defaults for the rest of the fields.
6. Click **OK** to set the new trace options.
7. Click **Yes** to recycle the service.

On UNIX systems:

1. Set the following variable in $CANDLEHOME/config/*hostname*_ms_*TEMS ID*.config

   ```
   KBB_RAS1='ERROR (UNIT:filter trace_level)'
   ```

   where *filter* is the component you want to trace and *trace_level* is the level of tracing you want. The following example traces everything in the Deploy component:

   ```
   KBB_RAS1='ERROR (UNIT:KDY ALL)'
   ```

   Note: There must be a space between each UNIT trace setting. For example:

   ```
   KBB_RAS1='ERROR (UNIT:KDY ALL) (UNIT:KFAPRPST ALL)'
   ```
2. Set the following variable in $CANDLEHOME/bin/tacmd to trace the command line interface of the Tivoli Enterprise Monitoring Server:

   ```
   KBB_RAS1='ERROR (UNIT:filter trace_level)'
   ```
3. Recycle the Tivoli Enterprise Monitoring Server by ″restarting″ or ″stop″ and then ″start″.

For information on how to set trace levels dynamically, see “Dynamically modify trace settings for an IBM Tivoli Monitoring component” on page 20.

Setting the trace option for the Agent Deploy tool

On Windows systems:

1. On the computer where the Tivoli Enterprise Monitoring Server is installed, select **Start** > **Programs** > **Tivoli Monitoring Services** > **Manage Tivoli Enterprise Monitoring Services**.
2. Right-click the Tivoli Enterprise Monitoring Server service.
3. Select **Advanced** > **Edit Trace Parms** to display the **Trace Parameters** window.
4. Type **(UNIT:kdy all)** in the **Enter RAS1 Filters** field.
5. Accept the defaults for the rest of the fields.
6. Click **OK** to set the new trace options.
7. Click **Yes** to recycle the service.

On Linux® systems, set the following variable in $CANDLEHOME/config/lz.ini:

```
KBB_RAS1=ERROR(UNIT:kdy ALL)(UNIT:kdd ALL)
```

On UNIX systems other than Linux:

1. Set the following variable in $CANDLEHOME/config/ux.ini:

   ```
   KBB_RAS1=ERROR (UNIT:kdy ALL) (UNIT:kdd ALL)
   ```
2. Recycle the OS Agent on that endpoint.

Setting the trace option for the IBM Tivoli Universal Agent

Use the IBM Tivoli Universal Agent trace facility to diagnose problems with the Universal Agent. The Universal Agent uses RAS1 tracing. By default, Universal Agent trace data is written to a file in the logs subdirectory. The default RAS1 trace level is ERROR for all Universal Agent components and modules. On Windows, Tivoli Monitoring Services overwrites the kumras1.log each time the Universal Agent starts and there is no method for archiving previous RAS1 log files. Therefore, you must obtain the RAS1 log that matches the problem occurrence before contacting IBM Software Support. You can set tracing options for individual Universal Agent components and modules in the KUMENV file on Windows or the um.ini file on UNIX-based systems.

RAS1 supports pattern matching. For example, (UNIT:kums options) traces all SNMP data provider modules because they all begin with `kums`. Detailed RAS1 tracing can degrade Universal Agent performance due to high CPU usage and I/O overhead. Therefore, set the Universal Agent RAS1 tracing to `KBB_RAS1=ERROR` after problem diagnosis. If a module produces excessive error messages and fills the RAS1 log, set (`UNIT:modulename None`) to suppress the module until you resolve the errors. If you discover an old Windows RAS1 log file, the `KBB_RAS1` environment was erased or commented out in the KUMENV file, add `KBB_RAS1=ERROR` to the `install_dir\logs\hostname_um_timestamp.log` to reactivate Universal Agent RAS1 tracing.

Set the IBM Tivoli Universal Agent trace from Manage Tivoli Enterprise Monitoring Services:

1. Right-click the Universal Agent.
2. Select **Advanced** > **Edit Trace Parms**.
3. Select the RAS1 filters. The default setting is ERROR
4. Accept the defaults for the rest of the fields.
5. Click **OK** to set the new trace options.
6. Click **Yes** to recycle the service.

Setting the trace option for the Warehouse Proxy agent

1. On the computer where the Tivoli Enterprise Monitoring Server is installed, select **Start** > **Programs** > **Tivoli Monitoring Services** > **Manage Tivoli Enterprise Monitoring Services**.
2. Right-click **Warehouse Proxy**.
3. Select **Advanced** > **Edit Trace Parms**.
4. Select the RAS1 filters. The default setting is ERROR.
5. Accept the defaults for the rest of the fields.
6. Click **OK** to set the new trace options.
7. Click **Yes** to recycle the service.

Setting the trace option for the IBM Tivoli Summarization and Pruning Agent

Use the IBM Tivoli Universal Agent trace facility to diagnose problems with the Summarization and Pruning Agent. See "Setting the trace option for the IBM Tivoli Universal Agent" on page 14. The Summarization and Pruning Agent uses C-based RAS1 tracing, Java-based RAS1 tracing and Java-based internal tracing. By default, Summarization and Pruning Agent trace data is written to a file in the logs subdirectory. The default RAS1 trace level is ERROR for all Summarization and Pruning Agent components and modules.

The following trace options are available for the IBM Tivoli Summarization and Pruning Agent:

KBB_RAS1=ERROR
: Trace general errors. KBB_RAS1=ERROR Affects the content of the C-based RAS1 tracing (hostname_sy_HEXtimestamp-nn.log).

KBB_RAS1=ERROR (UNIT:ksz ALL)
: Trace agent startup. Affects the content of the C-based RAS1 tracing (hostname_sy_HEXtimestamp-nn.log).

KBB_RAS1=ERROR (COMP:com.tivoli.twh.ksy ALL)
: Minimum level trace for summarization. Affects the content of the Java-based RAS1 tracing (hostname_sy_ras1java_timestamp-nn.log).

KBB_RAS1=ERROR (UNIT:ksy1 ALL)
: Medium level trace for summarization. Affects the content of the Java-based internal tracing (hostname_sy_java_timestamp-n.log)

KBB_RAS1=ERROR (UNIT:ksy2 ALL)
: Connection level trace for summarization. Affects the content of the Java-based internal tracing (hostname_sy_java_timestamp-n.log)

KBB_RAS1=ERROR (UNIT:ksy3 ALL)
: Statement level trace for summarization. Affects the content of the Java-based internal tracing (hostname_sy_java_timestamp-n.log).

KBB_RAS1=ERROR (UNIT:ksy4 ALL)
: ResultSet level trace for summarization. Affects the content of the Java-based internal tracing (hostname_sy_java_timestamp-n.log).

KBB_RAS1=ERROR (UNIT:ksy5 ALL)
: Column value level trace for summarization. Affects the content of the Java-based internal tracing (hostname_sy_java_timestamp-n.log).

KBB_RAS1=ERROR (UNIT:ksysql ALL)
: Traces top 10 SQL statements for summarization. Affects the content of the Java-based internal tracing (hostname_sy_java_timestamp-n.log).

Notes:

1. The following settings: (UNIT:ksy3 ALL) or (UNIT:ksy4 ALL) or (UNIT:ksy5 ALL) produce a high volume of trace output.
2. By default, the Java-based internal trace (hostname_sy_java_timestamp-n.log) wraps at 5 files, and each file contains 300000 lines. To change the defaults, use the following settings in the KSYENV (Windows) or sy.ini (UNIX) files:

   ```
   KSZ_JAVA_ARGS=-Dibm.tdw.maxNumberDetailTraceFiles=<A>
   -Dibm.tdw.maxLinesForDetailTraceFile=<B>
   ```

   where:

   <A> Specifies the maximum number of Java-based internal trace files that can exist at any one time for a single launch

   <B> Specifies the maximum number of lines per Java-based internal trace file.

Setting the trace option for the IBM Tivoli Monitoring upgrade toolkit

Table 4. Setting the trace option for the IBM Tivoli Monitoring upgrade toolkit

Trace option	Instructions
Endpoint tracing	Run the following command to setting log_threshold=3 or higher on an endpoint and enable endpoint tracing: `wep ep set_config log_threshold=3` Traces are written to lcfd.log on the endpoint in *$LCF_DATDIR*.
Tracing in a test environment.	A Boolean value of TRUE or FALSE default. The default is FALSE. Run the following command from a Tivoli Management Environment command prompt to enable tracing:`idlcall oid _set_debug TRUE` where: *oid* Specifies the object ID of the Upgrade Manager object. Run the `wlookup` Framework command to locate the Upgrade Manager object ID in the Tivoli Management Environment: `wlookup -a | grep Upgrade` **Note:** Setting the trace value to TRUE sets all Upgrade Toolkit tools to TRUE, affecting all users running Upgrade Toolkit tools. A trace file named `trace_tool_timestamp.log` is created in the *$DBDIR*`/AMX/trace/` directory in XML format, with tool being 'witmscantmr', 'witmassess', and 'witmupgrade', and *timestamp* a time stamp that includes data and time of execution. Each record in this log contains a time stamp and message. Additionally, these tools inherit Framework FFTC mechanisms such as wtrace and odstat for transaction and method stack traces. See the Tivoli management Framework documentation for more information about the commands.
OS Agent tracing	OS Agent tracing is enabled at a minimum level by default. Agent tracing levels can be adjusted with agent specific settings. Logs are stored in *install_dir*`\installITM\` on Windows agents or *install_dir*`/logs/` on UNIX-based systems agents. These logs follow the RAS1 log format.

Setting the trace option for the IBM Tivoli Monitoring event forwarding

If your monitoring environment is configured for the IBM Tivoli Monitoring event forwarding, you can forward situation events to the IBM Tivoli Enterprise Console,

and view events on the event server through the Tivoli Enterprise Portal. If you want to forward situation events to and view updates from IBM Tivoli Enterprise Console in the Tivoli Enterprise Portal, you can set the trace for the event forwarder on the Tivoli Enterprise Monitoring Server.

Use the IBM Tivoli Monitoring event forwarding trace facility to diagnose problems with the IBM Tivoli Monitoring event forwarding. The IBM Tivoli Monitoring event forwarding trace facility uses RAS1 tracing. The IBM Tivoli Monitoring event forwarding is set during installation. The acceptable values include:

- STATE
- DETAIL
- ALL

The default trace value is STATE. If you change the trace level, you must restart the Tivoli Enterprise Monitoring Server for the change to take effect.

Use the following instructions to set the trace levels:

On Windows:

1. From Manage Tivoli Enterprise Monitoring Services, right-click the **Tivoli Enterprise Monitoring Server**.
2. Click **Advanced** > **Edit trace parms**.
3. Under **Enter RAS1 Filter** add **UNIT:kfaot** *trc_class*

   where:

   trc_class
   Specifies STATE, DETAIL or ALL which produces increasingly more trace information.
4. The default log file location is `C:\IBM\ITM\CMS\logs\KMSRAS1.LOG`, change if necessary.
5. Click **OK** to set the trace.
6. Recycle the Tivoli Enterprise Monitoring Server for the trace to take effect.

On UNIX-based systems:

1. Edit *install_dir*`/config/`*hostname*`_ms_`*hostname*`.config`

   where:

   install_dir
   Specifies the install directory of Tivoli Enterprise Monitoring Server.

   hostname
   Specifies the host name value supplied during install.
2. Add `(UNIT:kfaot` *trc_class*`)` to the line `KBB_RAS1='ERROR'`

   where:

   trc_class
   Specifies one of the following levels of trace detail:
   - STATE - minimum detail.
   - DETAIL - medium detail.
   - ALL - maximum detail.

   For example, `'KBB_RAS1='ERROR (UNIT:kfaot STATE)'`
3. Save the file.

4. Recycle Tivoli Enterprise Monitoring Server for the trace to take effect.
5. The Tivoli Enterprise Monitoring Server log can be found in *install_dir*/logs/*hostname*_ms_nnnnnnn.log where is a time stamp. There might be multiple files with different time stamps in the logs directory.

Setting the trace option for the IBM Tivoli Enterprise Console Situation Update Forwarder

If your monitoring environment is configured for the IBM Tivoli Enterprise Console, you can forward situation events to the Tivoli Enterprise Console event server. You can also view events on the event server through the Tivoli Enterprise Portal. If you want to forward situation events to and view updates from IBM Tivoli Enterprise Console in the Tivoli Enterprise Portal, you can set the trace for the Situation Update Forwarder on the IBM Tivoli Enterprise Console event server. The default trace setting is low. You can edit the trace setting using the sitconfig command.

```
$BINDIR/TME/TEC/OM_TEC/bin/sitconfig.sh update
fileName=configuration_file_name logLevel=trace_level
```

where:

configuration_file_name
: The filename of the actively loaded configuration file as indicated by the situpdate.properties file.

trace_level
: Specifies the level of trace as **low**, **med**, or **verbose**.

Use the IBM Tivoli Enterprise Console Situation Update Forwarder trace facility to diagnose problems with the IBM Tivoli Enterprise Console Situation Update Forwarder. The trace for the IBM Tivoli Enterprise Console Situation Update Forwarder is set during installation. The acceptable values include:

- low
- med
- verbose

The default trace value is low. If you change the trace level after the Situation Update Forwarder is started, you must restart the Situation Update Forwarder for the change to take effect. There are two trace files:

synch_trace.log
: is always created.

synch_msg.log
: is created if an error occurs while running the Situation Update Forwarder.

Run the following command to set the trace levels:

```
$BINDIR/TME/TEC/OM_TEC/bin/sitconfig.sh update
fileName=configuration_file_name logLevel=trace_level
```

where:

configuration_file_name
: The filename of the actively loaded configuration file as indicated by the situpdate.properties file.

trace_level
: Specifies the level of trace as **low**, **med**, or **verbose**.

Setting up RAS1 tracing on z/OS systems

This syntax is used to specify a RAS1 trace in the KppENV file (where pp is the product code: HL for the OMEGAMON® z/OS® Management Console or DS for the Tivoli Enterprise Monitoring Server). After you add this command to the KppENV file, you must stop and restart the address space for the command to take effect. After that, it remains in effect for the life of the address space. To end the trace, you must edit the KppENV file again to reset the trace level, and stop and restart the address space.

The basic syntax of the RAS1 trace command is:

```
KBB_RAS1= global_class (COMP: component_type)
(ENTRY: entry_point) (UNIT: unit_name, class)
```

where:

global_class

Indicates the level of tracing that you want. This is a global setting that applies to all RAS1 filters in the process. If you set this global class by itself, it is global in scope and the trace cannot filter on any of the other keywords. Separate combined classes with a space. The following values are possible. Valid abbreviations are in parentheses.

ERROR (ER):
returns severe error messages only (this is the default for most applications).

STATE (ST):
records the condition or current setting of flags and variables in the process. If state tracing is enabled, you can see the current state of particular variables or flags as the process is running.

FLOW (FL):
causes a message to be generated at an entry or exit point of a function.

DETAIL (DE):
produces a detailed level of tracing.

INPUT (IN):
records data created by a particular API, function, or process.

ALL: causes all available messages to be recorded. This setting combines all the other forms of tracing.

COMP

Indicates that the trace includes a component type. The COMP keyword is used to trace groups of routines related by function (or component). Use this keyword only at the explicit request of an IBM Software Support representative.

component_type

Identifies a component type. An IBM Software Support representative can tell you what value to specify.

ENTRY

Narrows a filtering routine to specify a specific ENTRY POINT. Since multiple entry points for a single routine are rare, use this keyword only at the explicit request of an IBM Software Support representative.

entry_point
Represents the name of the entry point. An IBM Software Support representative can tell you what value to specify.

UNIT Indicates that the trace is to look for a match between the compilation unit dispatched and the fully or partially qualified compilation unit specified on the RAS1 statement. A match results in a trace entry.

unit_name
Represents the name of the compilation unit. In most instances, this name defines the component that is being traced. The value is likely to be the three-character component identifier for the monitoring agent (KHL for OMEGAMON z/OS Management Console).

class One of the same values specified for *global_class* but, because of its position inside the parentheses, narrowed in scope to apply only to the *unit_name* specified.

Note: The default setting for monitoring agents on z/OS is KBB_RAS1=ERROR, meaning that only error tracing is enabled. You can specify any combination of UNIT, COMP, and ENTRY keywords. No keyword is required. However, the RAS1 value you set with the global class applies to all components.

For more information on setting RAS1 tracing on z/OS system, see your individual monitoring agent's user's guide.

Dynamically modify trace settings for an IBM Tivoli Monitoring component

You can access the Tivoli Enterprise Monitoring Server, Tivoli Enterprise Portal Server, almost all of the agents, and other IBM Tivoli Monitoring components from this utility.

This method of modifying trace settings on an IBM Tivoli Monitoring component is the most efficient method since it allows you to do so without restarting the component. Settings take effect immediately. Modifications made this way 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. In order to modify these trace settings permanently, modify them in the .env files.

How to turn tracing on:

In order to use this utility you need to know a local log-on credential for the machine.

This method uses the IBM Tivoli Monitoring Service Console. The Service Console is accessed using a web browser. Access the utility by using the following link:

`http://hostname:1920`

where *hostname* is the hostname or IP address of the system where the IBM Tivoli Monitoring component is running. The utility then appears with information about the components that are currently running on this machine.

For example, the component Tivoli Enterprise Portal Server shows as cnp, the Monitoring Agent for Windows OS shows as nt, and the Tivoli Enterprise Monitoring Server shows as ms.

Select the link below the component for which you want to modify the trace settings. In the previous view if you want to modify tracing for the Tivoli Enterprise Monitoring Server, you select the ″IBM Tivoli Monitoring Service Console″ link under the Service Point: system. balayne_ms.

When you select one of the links, you will be prompted for a user ID and password to access the system. This is any valid user that has access to the system.

Typing **?** displays a list of the supported commands.

The command for modifying the trace settings is **ras1**.

If you type ras1 in the field at the bottom of the screen, you will then see the help for this command.

The **set** option (ras1 set) turns on the tracing, but does not affect existing tracing.

An example would be **ras1 set (UNIT:xxx ALL) (UNIT:yyy Detail)**. This command will enable full tracing for the *xxx* class of the component and low-level detailed tracing on the *yyy* class of the component.

The **ras1 list** command lists what tracing is set as default. It is best to do an initial list in order to track what changes you have made to the tracing settings.

The following list describes the options of tracing available:

ALL - Provides all trace levels. Shown as ALL when using the **ras1 list** command.

Flow - Provides control flow data describing function entry and exit. Shown as Fl when using the **ras1 list** command.

ERROR - Logs internal error conditions. Shown as ER when using the **ras1 list** command. The output also shows as EVERYE+EVERYU+ER.

Other settings which provide component specific information are:

Detail - Shown as Det when using the **ras1 list** command.

INPUT - Shown as IN when using the **ras1 list** command.

Metrics - Shown as ME when using the **ras1 list** command.

OUTPUT - Shown as OUT when using the **ras1 list** command.

State - Shown as ST when using the **ras1 list** command.

Setting trace to ALL includes every trace point defined for the component. This might result in a large amount of trace. If you have been given a more specific setting, use it. ALL can sometimes be necessary when isolating a problem. It is the equivalent of setting ″Error Detail Flow State Input Output Metrics″.

The **ras1 units** command is used to determine the list of UNITs and COMPs available in an IBM Tivoli Monitoring component. The first column is the list of available UNIT values, the last column lists the corresponding COMP values.

Turning on (COMP:KDH ALL) will turn ALL level tracing on for all of the files where KDH is listed in the right hand column (highlighted below).

The following is a subset of the results for the Monitoring for Windows agent:

```
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
kdhsfcn.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
```

The UNIT value matches any unit that starts with the specified value. For example, (UNIT:kra FLOW) prints the FLOW traces for all files which match kra*.

How to turn tracing back off:

The option for turning the tracing off is **ANY**. For example you would use the following command to turn off tracing for the kbbcrcd class of the Windows OS agent:

```
ras1 set (UNIT:kbbcrcd ANY)
```

Using the IBM Tivoli Monitoring Service Console

The IBM Tivoli Monitoring Service Console enables you to read logs and turn on traces for remote product diagnostics and configuration. The IBM Tivoli Monitoring Service Console is uniquely identified by its service point name. All IBM Tivoli Monitoring Service Consoles for a host are linked and presented on the IBM Tivoli Monitoring Service Index for that host. Point a browser to the HTTP port 1920 on a specific host (for example, http://goby:1920) to launch the IBM Tivoli Monitoring Service Index. You can also launch the Service console can also be launched with the https protocol by connecting via the https protocol and port 3661. You can perform operations on a specific IBM Tivoli Monitoring process by selecting the IBM Tivoli Monitoring Service Console associated with a service point name.

Starting the IBM Tivoli Monitoring Service Console

Use the following procedure to start the IBM Tivoli Monitoring Service Console.

1. Start Internet Explorer V5 or higher.
2. In the **Address** field, type the URL for the Tivoli Enterprise Portal browser client installed on your Web server.

The URL for the Tivoli Monitoring Services Web server is

`http://hostname:1920`

hostname

Specifies the computer where the Tivoli Enterprise Portal Server was installed. If the IBM Tivoli Monitoring Service Console is not displayed, a system administrator might have blocked access to it. See "Blocking access to the IBM Tivoli Monitoring Service Console" on page 23.

3. Click the IBM Tivoli Monitoring Service Console link associated with the desired process (service point name).
4. When the log in window opens, click **OK**.

   In secure environments, you need a valid user ID and password to proceed. Upon successful login, the IBM Tivoli Monitoring Service Console opens with three areas:

   - Header
   - Command Results
   - Command Field

   You can now issue IBM Tivoli Monitoring Service Console commands in the command input area. For a list available commands, type a question mark (?) and click **Submit**.

The IBM Tivoli Monitoring Service Console performs user authentication using the native OS security facility. If you use the IBM Tivoli Monitoring Service Console on z/OS systems, your user ID and password are checked by the z/OS security facility (RACF/SAF). If you use the IBM Tivoli Monitoring Service Console on Windows systems, then you must pass the Windows workstation user ID and password prompt. This is the rule except for instances of a NULL or blank password. The IBM Tivoli Monitoring Service Console never accepts a NULL or BLANK password.

A password is always required to access the service console. Blank passwords, even if correct, cannot access to the service console. Even if a user ID is allowed to login to the operating system without a password, access to the service console is denied. Create a password for the user ID that is being used to login to the service console.

Blocking access to the IBM Tivoli Monitoring Service Console

The Tivoli Monitoring Services integral Web server is installed automatically with the Tivoli Enterprise Portal Server and enables users to access the IBM Tivoli Monitoring Technology Service Console. You can prevent users from accessing the IBM Tivoli Monitoring Technology Service Console that is available through the integral Web server (http://*computer_name*:1920). To block access to the IBM Tivoli Monitoring Technology Service Console, disable the integral Web server. However, if you disable the integral Web server, you must install a third party Web server on the Tivoli Enterprise Portal Server computer to access the images and style sheets for the graphic view and edit the application parameters at every desktop client.

1. From the Windows desktop select **Start** > **Run** >
2. Type `regedit`.
3. Open the Tivoli Enterprise Portal Server Environment folder:

   `HKEY_LOCAL_computer\SOFTWARE\Tivoli Monitoring Services\KFW\Tivoli Enterprise Portal Server\KFWSRV\`**`Environment`**
4. Locate the `KDC_FAMILIES` in the right frame and add a space and type the following at the end of the line: `http_server:n`

Example:

```
IP PORT:1918 SNA use:n IP.PIPE use:n http_server:n
```

5. Install a third party Web server on each computer where you installed the Tivoli Enterprise Portal desktop client:
   a. From the Windows desktop select **Start** > **Programs** > **Tivoli Monitoring Services** > **Manage Tivoli Enterprise Monitoring Services**.
   b. Right-click **Tivoli Enterprise Portal desktop** and select **Reconfigure** from the menu.
   c. In the list of parameters that opens, double-click **cnp.http.url.DataBus** to open the **Edit Tivoli Enterprise Portal Parm** window.
   d. Type the URL to the external Web server and to the `cnps.ior` file in the `candle\cnb` directory.

      For example, if the Web server name is **myWeb.hostname.com** and its document root was configured to be `\candle\cnb`, the value to type is:

      http://myWeb.hostname.com/cnps.ior
   e. Check **In Use** and click **OK**.

Displaying tasks in the command prompt

The Tivoli Enterprise Portal Server has an option to display the tasks at the command prompt. This is used primarily with IBM Software Support for gathering diagnostic information.

1. From your Windows desktop, select **Start** > **Programs** > **Tivoli Monitoring Services** > **Manage Tivoli Enterprise Monitoring Services**.
2. Right-click **Tivoli Enterprise Monitoring Server**, then select **Change Startup** from the menu.
3. Check **Allow Service to Interact with Desktop**.

Clearing the JAR cache

If you encounter problems, IBM Software Support might instruct you to uninstall and to clear the JAR cache.

1. If Tivoli Enterprise Portal is running, exit by closing the browser window.
2. Start the Java Plug-in.

   Additional Information: You can find the Java Plug-in in **Start** > **Settings** > **Control Panel**. To start it, double-click the Java Plug-in icon. Your Windows desktop might have a shortcut to the Java Plug-in (1.4.2).
3. In the Java Plug-in Control Panel window, select the **Cache** tab and click **Clear JAR Cache**.
4. When a message indicates the JAR cache is cleared, click **OK**.

   If you want to start Tivoli Enterprise Portal browser mode again, restart Internet Explorer and type the URL for Tivoli Enterprise Portal. The Java Extension Installation progress bar shows as each Java archive file is downloaded. Upon completion, the logon window opens and prompt you to enter a user ID.

Using the UAGENT application

The UAGENT application is a diagnostic tool to help solve problems you might experience with the IBM Tivoli Universal Agent. Every Universal Agent data provider automatically activates an application called UAGENT, which includes the DPLOG and ACTION workspaces.

DPLOG

The DPLOG is a pure event table in that it maintains only the most recent 100 rows, unless overridden by the KUMA_MAX_EVENT_ENTRIES environment variable. The DPLOG contains informational and error messages about the status of a data provider that indicate:

- If a metafile was validated successfully.
- If a metafile failed validation (which means the application will not come online).
- If a data source was available at startup
- Which console ports and socket listening ports were used or unavailable.
- When monitoring started and stopped for a data source.
- When monitoring switched from one file to another.
- When an API or socket client program connected and disconnected.

The DPLOG also records other actions including metafile refreshes. The two most common Universal Agent problem symptoms are:

- One or more managed systems do not come online.
- The managed systems are online but the workspaces are empty.

Use the UAGENT application workspaces as one of the first tools to diagnose a Universal Agent problem. You might find the solutions for both problems in the appropriate DPLOG. The ODBC data provider also includes a DPLOG message indicating when monitoring started for every attribute group listed in every ODBC metafile.

ACTION workspace

Whenever a Take Action command is issued or a Reflex Action fires, an entry is added to the ACTION workspace. The Action table is keyed and ActionID is the Key attribute. The Action table rows have a time-to-live value of 30 minutes. Unlike the DPLOG which is data provider-specific, the ACTION table is shared by all data providers. If you run multiple data providers, the ACTION workspace under every UAGENT application contains the same rows.

The Action_Result can indicate what happened to a particular Take Action command. For example, if Universal Agent reflex actions fire faster than one per second, the ACTION workspace temporarily stops recording the results. Recording resumes after several minutes if the action rate slows down.

pdcollect tool

This tool allows you to collect the most commonly-used information from a system to allow for IBM service to investigate a problem. It gathers log files, configuration information, version information, etc.

This tool is available for Windows, UNIX, Linux, and z/OS systems. It is located in the *ITM_Install*/bin directory on Windows, UNIX, and Linux systems. It is supplied as the KMSPDCOL member of the RKANSAM dataset on z/OS systems.

This tool is included in the basic image install for IBM Tivoli Monitoring v6.2. Invocation is simple and is documented in the command.

There are a number of options for pdcollect that control the data collection process. You should request assistance from IBM Service to determine which, if any, of the options should be specified for the particular problem which you have encountered.

You must execute pdcollect while running under the same user ID that you use to run IBM Tivoli Monitoring to avoid problems with file access authorization.

On Windows, UNIX and Linux systems, you are prompted to examine the data that has been collected. You can add additional files pertaining to the problem by copying them into the same directory. You can also edit or remove data which you do not want to expose to IBM for confidentiality reasons, but doing so may impact diagnosing the problem. Again, consult with IBM Service if you have questions. The output produced by pdcollect is a single compressed file that should be transmitted in binary form to IBM for analysis. The name of the output file is displayed in a message at the end of pdcollect processing.

Running the following command on Windows systems results in the output that follows:

```
pdcollect /?
This program is intended to collect diagnostic information from the
computer on which it is executed. Collected data includes:


   -system configuration
   -environment
   -disk space information
   -network state
   -errors and warnings from the event log
   -configuration and log files


Command line syntax is:


   pdcollect.cmd [options] [work-directory]


where:


"work-directory" is the directory to be used to collect the data.


   Do not specify the root directory of a disk partition as the work-directory.
   If not specified, %TEMP% is used.


"options" are any of the following, in any order or case:


   "/noapp" specifies that application event log data is NOT to be collected


   "/nosec" specifies that security event log data is NOT to be collected


   "/nosys" specifies that system event log data is NOT to be collected
```

```
   "/noevent" specifies that NO event log data is to be collected
   (equivalent to specifying /noapp, /nosec and /nosys)


   "/nohist" specifies that history files are NOT to be collected


   "/nologs" specifies that ITM log/trace files are NOT to be collected


   "/noprompt" specifies that all interaction with the user is suppressed


options may also be prefixed with "-" instead of "/"
```

Note: On UNIX platforms, the combined filename and path name cannot be larger than a total of 255 characters. On AIX® systems, the filename must be less than 100 characters and path names must be less than 155 characters.

The z/OS version of pdcollect is a TSO clist that is installed in RKANSAM(KMSPDCOL). You can copy this clist into a clist library of your choice, renaming it if you desire. Once the clist resides in a dataset accessible through SYSPROC in a TSO logon procedure, then it can be invoked by name. In the following example, the ″KMSPDCOL″ name was retained:

```
%kmspdcol help
 FUNCTION -

 THIS PROGRAM IS INTENDED TO COLLECT DIAGNOSTIC INFORMATION FROM
 THE COMPUTER ON WHICH IT IS EXECUTED. COLLECTED DATA INCLUDES:

   - SYSTEM CONFIGURATION
   - NETWORK INFORMATION
   - OUTPUT FROM THE SPECIFIED JOB

 SYNTAX -

    >>-- KMSPDCOL -.- HELP ---------------------------.--->
                   |                                  |
                   .- JOBOUT(DSN) --------------------.
                   |                                  |
                   .- JOBNAME(JNAME) -.---------------.
                                      |               |
                                      .- JOBNO(JNUM) -.

     >--.-------------.--.--------------.--.----------.-->>
        |             |  |              |  |          |
        .- RHILEV(X) -.  .- RVHILEV(X) -.  .- SYS(X) -.
OPERANDS -

  HELP           REQUESTS DISPLAY OF THIS HELP INFORMATION

  JOBOUT(DSN)    IS THE NAME OF THE DATASET CONTAINING THE
                 COMPLETE OUTPUT FROM THE ITM JOB

  JOBNAME(JNAME) IS THE NAME OF THE ITM JOB IN THE JES SPOOL

  JOBNO(JNUM)    IS THE JES JOB NUMBER OF THE ITM JOB (REQUIRED
                 IF THERE ARE MULTIPLE JOBS WITH THE SAME NAME)

                 NOTE THAT SDSF IS REQUIRED TO SUPPORT THE USE
                 OF JOBNAME/JOBNO. IF YOU DO NOT HAVE SDSF, YOU
                 MUST USE JOBOUT.

  RHILEV         SPECIFIES THE HLQS OF THE NON-VSAM DATASETS
```

```
                IN THE ITM RTE

 RVHILEV        SPECIFIES THE HLQS OF THE VSAM DATASETS
                IN THE ITM RTE

 SYS            SPECIFIES THE NAME OF THE ITM RTE

RHILEV, RVHILEV AND SYS WILL NORMALLY BE EXTRACTED FROM THE
JOB OUTPUT BUT MAY BE SPECIFIED IF THE PROGRAM IS UNABLE TO
FIND THEM OR IF YOU WISH TO OVERRIDE THE EXTRACTED VALUES.
```

Note: The output data is placed in the dataset PDCOLLCT.DAT under the high-level qualifier designated by the PREFIX option of the TSO PROFILE command. See the PROFILE command description in the TSO/E Command Reference for details.

ras1log tool

This is a tool that converts the time stamps contained in trace logs into readable values. This tool can be found in the *itm_install*/bin directory on both Windows and UNIX systems. The following lists how the help appears:

```
usage: ras1log [-l|u] logfile ...
        -l for local time
        -u for UTC time
```

logfile can be either a filename or '-' for stdin (default).

You can either pass the tool a file name or you can filter a file through it to obtain a readable log. You do not need to specify any arguments.

The following examples work on Windows systems:

```
ras1log <balayne_ms_46c071a6-01.log
ras1log <balayne_ms_46c071a6-01.log | grep GetEnv
ras1log <balayne_ms_46c071a6-01.log > tems_log
```

The first example sends the result to the screen, the second sends the result to grep to find all of the lines with the text 'GetEnv' in them, which are then printed on the screen, and the third sends the result to a file named 'tems_log'.

By default this tool converts the timestamps to UTC time. When using the -l option, it writes local time instead.

Log and Trace Analyzer Tool

The Log and Trace Analyzer tool helps you view, analyze and correlate log files. You can evaluate multiple event and error logs with time synchronization.

You can find more information about the Log and Trace Analyzer at the following website:

```
http://www-128.ibm.com/developerworks/autonomic/probdet.html
```

To obtain this tool, you must follow the link to the **IBM OPAL - Best Practices and Tools for IT Service Management** website, download and install the tool to cnb\LTA.

Note: The jar file must be found in the system where the Tivoli Enterprise Portal client is invoking it.

Once it is installed, launch the Log and Trace Analyzer tool from the Tivoli Enterprise Portal Event Tools view. You can then use the tool to view logs from the Tivoli Enterprise Portal Server or Tivoli Enterprise Monitoring Server on a distributed system, or the RKLVLOG from a monitoring agent or monitoring server on z/OS system.

In addition to the Log and Trace Analyzer, specialized OMEGAMON adapters are provided to aid in problem determination for some of the more common problems that you might experience when using Tivoli Management Services (Tivoli Enterprise Portal, Tivoli Enterprise Portal Server, and Tivoli Enterprise Monitoring Server). The OMEGAMON adapters process application log files and transform their contents into a common format for logging, management, and problem determination.

OMEGAMON adapters and associated documentation are available for download as they are developed from the following website:

`http://www.ibm.com/software/tivoli/opal?NavCode=1TW10TM2U`

Backspace Check utility

On UNIX systems, if you have incorrectly configured the backspace key, you will see the following:

- When you press the backspace key, characters such as "^?" and "^H" are displayed on the screen.
- The backspace key seems to be working correctly when entering text, but you later find characters such as "^?" and "^H" in configuration files and your software malfunctions.

Configure your terminal and "stty erase" to use the same key code for backspace. Consider using "^?" as the key code. Verify your configuration with the IBM Tivoli Monitoring distributed utility, Install: BackspaceCheckUtility.

Build TEPS Database utility

You can use this utility to build a blank database. Prior to the IBM Tivoli Monitoring v6.1 release, this utility would also populate the database with tables. Now, it is necessary to also run the BuildPresentation utility to build the tables in the database.

To build and populate a database, complete the following steps:

1. From the **Manage Tivoli Enterprise Monitoring Services** window, right-click **TEPS**.
2. Select **Advanced -> Utilities -> Build TEPS Database**.
3. Run the BuildPresentation.bat file found in *install_dir*\CNPS.

Chapter 3. Installation and configuration troubleshooting

This chapter contains the following sections, which provide information about problems that might occur during installation, upgrading from previous versions, and uninstallation of the product and product components:

- "Frequently asked questions" on page 31
- "General installation problems and resolutions" on page 33
- "Windows installation problems and resolutions" on page 40
- "UNIX-based system installation problems and resolutions" on page 42
- "Troubleshooting z/OS-based installations" on page 44
- "Uninstallation problems and workarounds" on page 57

Frequently asked questions

General installation frequently asked questions

The following table lists general installation frequently asked questions.

Table 5. General frequently asked questions

Question	Answer
Are fixpacks required if a user migrates Candle® monitoring agent to IBM Tivoli Monitoring.	Fixpacks for CNP196 are delivered as each monitoring agent is migrated to IBM Tivoli Monitoring. **Note:** The IBM Tivoli Monitoring download image or CD provides application fixpacks for the monitoring agents that are installed from that CD (for example, the agents for operating systems such as Windows, Linux, UNIX, and i5/OS®). The migration software for other agents is located on the download image or CDs for that specific monitoring agent, such as the agents for database applications.If you do not migrate the monitoring agent to IBM Tivoli Monitoring, the agent continues to work. However, you must migrate to have all the functionality that IBM Tivoli Monitoring offers.
Do presentation files and customized OMEGAMON DE screens for Candle monitoring agents need to be migrated to a new zLinux system.	The migration from version 350 to IBM Tivoli Monitoring handles export of the presentation files and the customized OMEGAMON DE screens.
Does the warehouse migration tool have a rollback function?	No. You must back up the old warehouse database and the new warehouse database before running the warehouse migration tool to prevent loss of data. For more information about running the warehouse migration tool, see the *IBM Tivoli Monitoring Installation and Setup Guide*.
What if the migration tool fails?	Because you backed up the source database, you can refer to the WAREHOUSEMIGLOG table to determine which tables migrated successfully. If you want to restart without re-migrating the successfully migrated tables, you delete the tables that were completely migrated in the source database. Also, delete all the data that was incompletely exported in the last tables: use the writetime column to distinguish old data from new data.

Windows installation frequently asked questions

Table 6. Windows installation frequently asked questions

Question	Answer
How can I determine if Windows Security logging is on?	If the sysadmin account that you use to log on to Tivoli Enterprise Portal is not a Windows Administrator, you do not see the security log. Windows security logging is not turned on by default. Normally, data is not collected in the security log unless the Windows administrator turns it on. The Record Count = 0 in the Windows monitored logs report confirm that security logging is not turned on.
How can I diagnose problems with product browse settings?	1. Click on **Start > Programs > Tivoli Monitoring > Manage Tivoli Enterprise Monitoring Services** to display the Manage Tivoli Enterprise Monitoring Services window. 2. Right-click the Windows agent and select **Browse Settings**. A text window displays. 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.

UNIX-based systems installation frequently asked questions

Table 7. Frequently asked questions for UNIX-based systems installation

Problem	Solution
The product was installed as root. Without re-installing the product, how can I change from root to another ID?	If you installed and started the agent as root, the files do not have correct permissions, so the result is unpredictable. For this reason, do not use root ID either to install or start the UNIX-based systems agents. Create a user ID with all the authority and permissions to install, run or use any other ID other than root. As root, run the command UnSetRoot , which is located under `install_dir/bin/` directory. This script resets all the files under the `install_dir` directory, owned by root. `UnSetRoot [ -h CANDLEHOME ] userID` After executing the above script, run "SetPerm" command, which is located under `install_dir/bin/` directory. This command sets root permission for certain UNIX-based systems agent files.
How can I set the trace option to capture any abends (core files)?	Add the following in the agent .ini file. For an example if it is KUX agent, add the following line in install_dir/config/ux.ini file `KBB_SIG1=trace –dumpoff`
In an environment of 50 servers with at least one agent per server, a new agent (vt) was installed outside the firewall. The new agent must be configured on Tivoli Enterprise Monitoring Server for IP.PIPE communication. Is it necessary to change all the other UNIX-based systems agents for IP:PIPE?	Is it not necessary to change all the other UNIX-based systems agents for IP:PIPE. You have to configure only the agent, which connects to the Tivoli Enterprise Monitoring Server through a firewall. However, you must configure the Tivoli Enterprise Monitoring Server for IP.PIPE communication. While configuring the agent, which communicate through the firewall, you get the following options: • Does the agent connect through a firewall? [YES or NO] (Default is: NO) • IP.PIPE Port Number (Default is: 1918) • Enter name of KDC_PARTITION (Default is: null)

Table 7. Frequently asked questions for UNIX-based systems installation (continued)

Problem	Solution
Does SNMP need to be turned on to monitor UNIX-based systems host? The monitoring server is running WINNT4.0 and monitoring agent is running on HPUX?	If you are communicating only through Tivoli Enterprise Monitoring Server you do not need SNMP. However, if you are sending traps to the emitter through the Tivoli CA uni-center or HP Open-view, SNMP is required.
Pressing the backspace key, characters such as "^?" and "^H" appear on the screen. The backspace key appears to be working correctly when entering text, but you later find characters such as "^?" and "^H" in configuration files and your software malfunctions.	If you receive one of these symptoms when using the backspace on UNIX computers, you have incorrectly configured the backspace key. Configure your terminal and "stty erase" to use the same key code for backspace. Consider using "^?" as the key code. Verify your configuration with the IBM Tivoli Monitoring distributed utility, Install: BackspaceCheckUtility.
When running the install.sh script on a Linux system, I get a Memory fault (core dump) at different, random stages of the install, regardless of what selections I make.	When I run the command ″getconf GNU_LIBPTHREAD_VERSION″ on my system, the response I receive is ″linuxthreads-0.10″ or something similar. This is caused by the /etc/profile entry of ″LD_ASSUME_KERNEL=2.4″. If I unset this variable or change the value of /etc/profile to ″2.6″, the getconf command returns ″NPTL 2.3.4″ or something like it. This enables me to run the install.sh script without causing the memory fault. **OR** Changing the JAVA_COMPILER variable to NONE before upgrading allows me to continue without hitting the core dump.

General installation problems and resolutions

This section describes general installation problems and resolutions.

Incorrect behavior after an uninstallation and re-installation

You might experience incorrect behavior if you uninstall then reinstall the product without rebooting. For example, you might experience the following problems:

- Inability to create trace logs.
- Agents do not start.
- Agents data is corrupt.

Reboot the system to resolve the problems.

Receive an install.sh error when installing two components or agents in the same installation directory

Installing two components or agents in the same CANDLEHOME or installation directory is supported as long as the User ID used to run the installation is always the same.

Installing two components or agents in the same CANDLEHOME or installation directory using different User IDs is not supported.

During a remote Tivoli Enterprise Monitoring Server upgrade, you receive a "The Backup procedure for TEMS database files has failed." pop-up

During a remote Tivoli Enterprise Monitoring Server upgrade, you receive the following pop-up message:

```
"The Backup procedure for TEMS database files has failed. If you continue with the
installation your customized tables could be lost.
Would you like to abort the installation?"
```

If you click **YES**, there is a risk of losing your customized tables. To ensure that you do not lose data, complete the following steps:

1. Click **NO** and exit the upgrade installation.
2. Restart the remote Tivoli Enterprise Monitoring Server system.
3. Stop all the IBM Tivoli Monitoring components from the 'Manage Tivoli Enterprise Monitoring Services' window.
4. Rerun the upgrade installation now with the remote Tivoli Enterprise Monitoring Server in the stopped state.

The upgrade installation is complete.

Upgrade from IBM Tivoli Monitoring v6.1 and LA07 to v6.2 fails on Hub Tivoli Enterprise Monitoring Server

After completing the installation, errors are shown such as "No such file or directory" and "Exceptions.ITMException KCIIN0301E TEMS User Authentication requirements have failed."

Check to see if there are multiple .config files for the same Tivoli Enterprise Monitoring Server name. Also, files with a long hostname (fully qualified) might include references to downlevel architecture. In IBM Tivoli Monitoring v6.2, the aix513 architecture has been deprecated, so references to aix513 cause the SetPerm script to fail.

Agents register with a blank product code and expected log files are not created

On Windows systems, you have already installed IBM Tivoli Monitoring v6.2 and you are installing any IBM Tivoli Monitoring v6.1 component into this infrastructure. In this case, the component's ENV configuration files can be corrupted by the replacement of key name K*_JAVA_HOME with JAVA_HOME, where * indicates the product code. This can occur after installation or an agent upgrade.

You must manually restore this KEY name with the proper value, as listed below by product:

- Warehouse Proxy Agent - KHD_JAVA_HOME
- Summarization and Pruning Agent - KSZ_JAVA_HOME
- IBM Tivoli Composite Application Manager File Transfer Enablement - KT1_JAVA_HOME
- IBM Tivoli Composite Application Manager for Response Time Tracking - KT2_JAVA_HOME
- IBM Tivoli Composite Application Manager for End User Response Time Dashboard Agent - KT3_JAVA_HOME

- IBM Tivoli Composite Application Manager for Client Response Time Agent - KT4_JAVA_HOME
- IBM Tivoli Composite Application Manager for Web Response Time Agent - KT5_JAVA_HOME
- IBM Tivoli Composite Application Manager for Robotic Response Time Agent - KT6_JAVA_HOME
- IBM Tivoli Composite Application Manager for Web Servers - KWJ_JAVA_HOME
- Monitoring Agent for J2EE - KWJ_JAVA_HOME
- Monitoring Agent for WebSphere® - KWJ_JAVA_HOME

Various IBM Tivoli Monitoring components and tacmd commands fail with “Symbol resolution failed” message

After installing the IBM Tivoli Monitoring v6.2 Tivoli Enterprise Monitoring Server on AIX and loading support, various components such as the Tivoli Enterprise Monitoring Server, and Tivoli Enterprise Portal Server, and the tacmd commands fail with “Symbol resolution failed” message.

Confirm that version 8 for the C++ runtime environment is the version in use. Look at the “Symbol resolution failed” errors which indicate a problem with the C libraries.

To verify which version of C++ runtime environment is installed use:

```
Lslpp -1| grep xlC.rte
```

Download IBM C++ Runtime Environment Components for AIX V8 from the Web site:

```
http://www-1.ibm.com/support/docview.wss?uid=swg24012187
```

Install the version 8 C++ RTE and reboot.

On Solaris systems, GSKit installation fails to install

If you have previously installed GSKit, and then manually removed it, the installation might fail. Perform the following actions to remove the two gskit installations, and then continue the installation as normal:

```
pkgrm gsk7bas
 pkgrm gsk7bas64
```

Cannot update agent with IBM Tivoli Monitoring 6.1 fixpack or patch to an already installed IBM Tivoli Monitoring 6.2 agent

The error message returned from the tacmd updateAgent command is:

```
The agent bundle {product code} is missing the prerequisite UI which is
not in the agent bundle depot on {node name}.
The prerequisite agent bundle is not present in the agent bundle depot.
```

The workaround for this problem is to modify the template.dsc file in the fixpack or patch bundle so that the UI prerequisite is removed. Complete the following steps:

1. In the fixpack or patch directory that was created when you untarred or unzipped the binary, locate the template.dsc file.
2. Create a backup of the template.dsc file.

3. Edit the template.dsc file with a text editor and remove the following lines. *X* in the xml below is a number based on the modification level for this fixpack or patch.

```
<Prereq>
  <PrereqProdCode>UI</PrereqProdCode>
  <PrereqVersion>
    <Version>06</Version>
    <Release>10</Release>
    <Mod>0X</Mod>
    <Level>000</Level>
  </PrereqVersion>
</Prereq>
```

The agent installation log on the endpoint indicates that error AMXUT7502E occurred

The error AMXUT7512E might occur when running the Distributed Monitoring Upgrade Toolkit. The agent was not installed for one of the following reasons:

- There is another installation in progress that cannot complete until the computer is restarted.

  –OR–

- You are attempting to install a component that is already installed.

Refer to the `lcfd.log` on the endpoint and the agent installation log as listed in Table 8 to determine the exact cause of the problem.

Table 8. lcfd log file

Windows	UNIX-based systems
install_dir/Install/Abort IBM Tivoli Monitoring timeStamp.log	*install_dir*/logs/candle_installation.log

Contact IBM Software Support if you cannot install the agent.

Failure occurs when sharing directories for the agent deploy depot

Although it is more efficient to use a network shared directory for the agent deploy depot directory, there are weaknesses that might negatively impact deployment in large enterprises:

- If an NFS is used to contain the depot and there is a problem with the NFS, then the deployment activity is suspended for all deployments in progress.
- For UNIX environments, the directories that are mentioned on the shared directory must have the names of each of the Tivoli Enterprise Monitoring Server servers.
- Administrator privileges need to be assigned based on a domain User ID. This is impractical and is contrary to the desired effect of sharing.

Difficulty with default port numbers

You can use Telnet to test if the port is open in the firewall. Use the following command for this test:

```
telnet hostname 15001
```

where 15001 is the port number in question.

Selecting Security Validation User displays a blank popup

While configuring the Tivoli Enterprise Monitoring Server you have an option to select the Security Validation User. When selecting this option a blank popup is displayed. The Security Validation is working despite a blank popup with this label that has a yellow triangle and exclamation point:

```
TEMS User Authentication actions are needed!
```

OS Agent does not install and a message indicates it was already installed

The file status.properties, located in $DBDIR/AMX/data/ is not deleted when you uninstall the Upgrade Toolkit. The Upgrade Toolkit refers to the old status.properties file that contains information indicating there the OS Agent was installed. You might experience this problem if you do the following in the order listed:

1. Upgrade an endpoint.
2. Uninstall the Upgrade Toolkit.
3. Clean the endpoint manually.
4. Reinstall the Upgrade Toolkit.
5. Attempt to upgrade the endpoint you previously upgrade in 1.

use the following steps to verify that information in the status.properties file is causing this problem:

1. Open the status.properties,
2. Look for an entry like the following example:

   ```
   #Copyright IBM Corporation 2005 #Wed Sep 14 15:54:43 CDT 2005 @Endpoint\:
   \:east@EndpointClass\:TMF_Endpoint\:\:Endpoint=COMPLETE @Monitor\:Coast\
   :120401@Threshold\:critical=COMPLETE
   ```

   In this example, the status of the endpoint ″east″ is COMPLETE, which indicates that it was upgraded successfully. The witmupgrade command does not upgrade any item with the COMPLETE status and reports that it was already upgraded.

To upgrade the endpoint, the status for the endpoint ″east″ must be the INCOMPLETE, such as in the following example:

```
@Endpoint\:\:east@EndpointClass\:TMF_Endpoint\:\:Endpoint=INCOMPLETE
```

The only way to change the endpoint status in the status.properties file to INCOMPLETE is to perform a rollback on the upgrade of the item. See the *IBM Tivoli Monitoring: Upgrading from Tivoli Distributed Monitoring*.

Rolling back the upgrade

You can use the rollback option (**–r** option) of the **witmupgrade** command to remove the new IBM Tivoli Monitoring resources that you created. This is a necessary step if you want to repeat the test scenario. Rolling back the upgrade for the test scenario removes the Windows OS monitoring agent from the Windows endpoint and also removes the new situations and managed system list.

Follow these steps to roll back the upgrade:

1. Change to the $DBDIR/AMX/shared/analyze directory:

   ```
   cd $DBDIR/AMX/shared/analyze
   ```

2. Type the following command to roll back the upgrade:

```
witmupgrade -x profilemanagers/DM_TEST_PM.xml -r -f scans/baseline.xml
```

where:

-x profilemanagers/DM_TEST_PM.xml
Specifies the name and location of the output file that resulted from the assessment of the DM_TEST_PM profile manager.

-r Indicates that the purpose of this command is to perform a rollback.

-f scans/baseline.xml
Specifies the name and location of the baseline file to use as input for this command.

3. Restart the Windows endpoint.

The rollback option can also be used to roll back an endpoint upgrade or a profile upgrade independently. By rolling back the profile manager upgrade, you roll back all upgrades (profile manager, profile, and endpoint) in one step.

″SQL1_OpenRequest status = 79″ return code occurs during when upgrading an agent

The return code `SQL1_OpenRequest status = 79` occurs in the agent log when the application support is added during an upgrade. This return code results from an attempt to delete a table entry that does not exist in the table. When you add application support for a V6.1 agent, the return code is expected behavior because the agent application support data does not exist in the table.

An IBM Tivoli Monitoring 6.1 upgraded agent is not configured to point to the same Tivoli Enterprise Monitoring Server as it was before upgrading the agent

During upgrade of agents from OMEGAMON 350 to IBM Tivoli Monitoring 6.1, the OMEGAMON 350 agent specific Tivoli Enterprise Monitoring Server configuration data does not persist to the upgraded IBM Tivoli Monitoring 6.1 agent. The upgraded agents are configured to use the agent default settings. Do the following to change the default settings configured for OMEGAMON 350:

1. Right-click an agent in the Manage Tivoli Enterprise Monitoring
2. Select **Set defaults for all agents ...**

Installation of OS agent on a Microsoft Windows Server 2003 fails with this error: ″Unable to establish BSS1 environment, can’t continue..″

This error is caused by the deletion of the gskit directory, whether intentionally or by accident, without clearing the registry information. If gskit was previously installed by another product and has a dependency on it, for example DB2® 9.1, then let that product reinstall it, or if there are no other products that depend on the version of that gskit, then you can clear the GSK7 entry in the registry that can be found under ″My Computer\HKEY_LOCAL_MACHINE\SOFTWARE\IBM\GSK7″. Then rerun the IBM Tivoli Monitoring installation to allow the gskit to be reinstalled.

Note: Create a backup of the registry before editing it.

After upgrading to IBM Tivoli Monitoring V6.1, the link to the Queue Statistics workspace in the navigation tree is incorrect

The link to the Queue Statistics workspace in the navigation tree opens the Open Queue Handles workspace instead of the Queue Statistics workspace. Use the following steps to correct the link:

1. Open the Queue Statistics workspace from the navigation tree.
2. Ensure that Queue Statistics workspace opened instead of the Open Queue Handles workspace.
3. From the Tivoli Enterprise Portal select **Edit** > **Properties**.
4. Place a check in the **Assign as default for this Navigator Item** box.

Some rows do not display in an upgraded table

You might not see all tables after upgrading the Warehouse Proxy to IBM Tivoli Monitoring V6.1 because some tables might be corrupted. Do the following to find the errors that occurred during the upgrade:

1. Edit the `KHDRAS1_Mig_Detail.log` file.
2. Search for the word EXCEPTION.

The KHD_MAX_ROWS_SKIPPED_PER_TABLE environment variable allows you to skip bad data. KHD_MAX_ROWS_SKIPPED_PER_TABLE indicates the number of rows per table to skip to migrate if the data that needs to be inserted is incorrect. When this number is reached, migration of the table is aborted.

Tivoli Enterprise Monitoring Server and Tivoli Enterprise Portal Server automatically start after running Application Support Installer

After running the Application Support Installer the Tivoli Enterprise Monitoring Server and Tivoli Enterprise Portal automatically start, even if they were not running before the install. The behavior is harmless and there is no workaround currently.

Errors occur during installation of Event IBM Tivoli Monitoring Event Forwarding tool

The product functions normally in spite of the error. Check the installation log for more details.

```
One or more errors occured during the replacement of files (tecSyncAllFile1)
with files (tecSyncAllFile1).
Refer to install log for more details.
One or more errors occured during the replacement of files (tecSyncAllFile2)
with files (tecSyncAllFile)1.
Refer to install log for more details.
One or more errors occured during the replacement of files (tecSyncAllFile3)
with files (tecSyncAllFile1).
Refer to install log for more details.
.
.
.
```

Windows installation problems and resolutions

Problems that are cleared by rebooting the Windows system

There are a set of problems that are cleared by rebooting the Windows system that has been installed or upgraded:

- Situations do not fire after upgrade
- Remote update of a Windows box fails because of a pending rename that requires a reboot

  Note: In this case, a 'RC_INFO: Pending rename operations found, must reboot before install can continue' message is found in the Abort IBM Tivoli Monitoring for Databases.log file.

After upgrading IBM Tivoli Monitoring for Databases v6.1: DB2 Agent to IBM Tivoli Monitoring v6.2, the agent can no longer be started

The log file reported problems with the libkra.a file, saying that an aix513 version could not be loaded because it has an incorrect number.

If you configured the IBM Tivoli Monitoring for Databases v6.1: DB2 Agent with the -o *instance* option then you need to reconfigure the agent after upgrading to IBM Tivoli Monitoring v6.2. You can check the $CANDLEHOME/config/.ConfigData/kudenv file for entries that start with the instance name, such as:

```
db2inst1|ARCHITECTURE|tmaitm6/aix513
```

After an upgrade, the Tivoli Enterprise Portal Server is in the 'stop pending' state and cannot be manually started

After the upgrade, the Tivoli Enterprise Portal Server was in the 'stop pending' state. Attempts to manually start the Tivoli Enterprise Portal Server failed. End the kfwservices process from the Windows task manager and then attempt the manual start. Your Tivoli Enterprise Portal Server can then be started and stopped.

This behavior can happen if a program that locks files is running in the background, such as Norton Antivirus.

When running the setup.exe, an unknown publisher error message displays

If you run the `setup.exe` from a network drive on Windows, a window displays with the following message:

```
File Download - Security Warning
The Publisher could not be verified.
Are you sure you want to run this software?
```

Selecting **Cancel** closes the window and the installation cannot complete. To install the software without this problem, map the network drive and run the `setup.exe` file from a DOS prompt.

The error "Could not open DNS registry key" occurs

This message is informational an no action is required. The Windows agent reports the fact that it could not find a registry entry for the DNS Server Event Log, indicating that the DNS Server Event Log is not installed. You can stop all

situations and recycle the Tivoli Enterprise Monitoring Server with no situations in ACTIVATE AT STARTUP to prevent this message being written to the trace log.

Agent not connecting to Tivoli Enterprise Monitoring Server

If you find a message similar to ″Unable to find running TEMS on CT_CMSLIST″ in the Log file, the Agent is not connecting to the Tivoli Enterprise Monitoring Server. Confirm the following to ensure connectivity:

- Multiple network interface cards (NICs) exist on the system.
- If multiple NICs exist on the system, determine which one is configured for the monitoring server. Ensure that you specify the correct hostname and port for communication in the IBM Tivoli Monitoring environment.

InstallShield displays the error ″1607: Unable to install InstallShield Scripting Runtime″ during installation on Windows from a network-mounted drive

When running `setup.exe` on Windows from a network mounted drive, the following error occurs:

```
InstallShield: 1607: Unable to install InstallShield Scripting Runtime.
```

This is an InstallShield limitation. You cannot install the product from the specified network drive. Try installing from another network drive. Install the product from a local drive if you continue to receive the error.

Installation on a Windows 2003 server fails with Error Number: 0x80040707

The following error can occur while installing IBM Tivoli Monitoring V6.1 on a Windows 2003 Server:

This error can occur for the following reasons:

1. Windows Service Pack 1 (or higher) is not installed.
2. Windows Installer 3.1 (KB893803) is not installed.

KB893803 is included in SP1. You must install Windows Service Pack 1 or higher or the KB893803 individual update. You can download the update from www.windowsupdate.com.

Unzipping nls_replace script causes remote deploy to fail

The tool used to unzip the file might have an option to automatically convert CRLF for text files. If users unzip the UNIX or Linux installation media tar files on Windows and this option is enabled, the files are modified and become incompatible on some platforms. The CR/LF conversion must be disabled or another tool used to extract the files that does not convert the text files.

Upgrade tool deploys agent to the wrong directory

The baseline XML file used for Tivoli Distributed Monitoring upgrade contains attributes that specify an installation directory for OS monitoring agents on Tivoli endpoints. When an endpoint is upgraded, the Upgrade tool normally deploys the OS monitoring agent to the specified directory on the endpoint. However, if the CANDLE_HOME environment variable is already set on a Windows endpoint, the Upgrade tool deploys the monitoring agent to the directory specified by the environment variable, even if a different directory is specified in the baseline file.

The CANDLE_HOME environment variable is already set if any IBM Tivoli Monitoring V6.1 component is already installed on the endpoint.

Deploying an agent instance without providing any configuration properties causes KUICAR020E error

The problem occurs after you have already successfully deployed a multi-instance agent (such as a database agent) to a node, and then tried to deploy another instance without providing any configuration properties (which is an error). You see this error message:

```
KUICAR020E: The addSystem command did not complete because a deployment error
occurred.
Refer to the following error returned from the server:
 The monitoring server encountered an error while deploying the managed system.
The kuiras1.log file may provide more information about this error.
 If you require further assistance resolving the error, contact IBM Software
Support.
The agent received incorrect SQL.
The CONTEXT column was not specified and is a required parameter.
```

A correct message would tell you that required configuration properties were not provided when using the -p|--property|--properties command line option. When you have provided the required configuration properties using the -p|--property|--properties command line option, the agent instance is properly deployed.

Problems installing directly from the .zip file

Instead of installing directly from the .zip file, extract the files from the .zip, and then install from the setup.exe file.

Installation hangs or loops after presenting initial splash screen

When installing IBM Tivoli Monitoring or IBM Tivoli Monitoring agents on Windows systems, IBM Tivoli Monitoring installation should present a pop-up requesting reboot if files are locked. However, there are times when the IBM Tivoli Monitoring installation does not inform you of locked files. This can cause the IBM Tivoli Monitoring installation to loop or hang. If you experience a delay longer than fifteen minutes during an IBM Tivoli Monitoring Windows installation, cancel the IBM Tivoli Monitoring install processes and reboot the system.

UNIX-based system installation problems and resolutions

This chapter describes known problems related to installation and uninstallation that might occur with IBM Tivoli Monitoring.

Failed to attach to the DB2 instance db2inst1 ERROR: Unable to create TEPS, return code = 3

While installing a Tivoli Enterprise Portal Server on a UNIX based system and using a DB2 database, the following error message is displayed (where db2inst1 is the supplied name of the DB2 instance):

```
Failed to attach to the DB2 instance db2inst1
ERROR: Unable to create TEPS, return code = 3
```

Ensure that the DB2 instance is started by running the db2start command as the instance user:

```
$ su - db2inst1
$ db2start
```

Installation on SLES9 terminates with install.sh failure:KCI1008E terminating... license declined

On systems when LAP cannot run and Java does not function, a bad return code is returned to install.sh. The problem can be manually recreated by running the JAVA command used to launch LAP or simply by running Java –version from the jre under CANDLEHOME. Indications show that the system might be missing an OS patch required for the level of Java or possibly an incorrect version of Java has been packaged and installed on the system.

Command line interface program of the Application Support Installer is not currently available

The command line interface program of the Application Support Installer is not currently available, thus you cannot run the install in command line mode. However, you can run the install in silent mode instead. If your UNIX® or Linux® computer does not have X-Windows set up, you must use the silent installation method.

Uninstallation is not available for Application Support on Windows systems

Currently, there is not a workaround.

Silent install on UNIX-based systems of Tivoli Enterprise Monitoring Server returns an encryption key setting error

The following errors occurs if you attempt a silent install on UNIX-based systems or UNIX-based systems and the encryption key is not exactly 32 characters.

```
Exception in thread "main" candle.kjr.util.CryptoFailedException:
CRYERR_INVALID_KEY_LENGTH
 at candle.kjr.util.CRYPTO.validateKeyLength(CRYPTO.java:911)
 at candle.kjr.util.CRYPTO.setKey(CRYPTO.java:452)
 at ITMinstall.gskSetkey.<init>(gskSetkey.java:179)
 at ITMinstall.gskSetkey.main(gskSetkey.java:26)
```

Set the encryption key parameter in the silent install file to exactly 32 characters as in the following example:

```
INSTALL_ENCRYPTION_KEY=IBMTivoliOMEGAMONEncrytionKey61
```

The error "Unexpected Signal: 4 occurred at PC=0xFEC3FDE4" occurs during installation

A Java VM heap dump occurs during installation, which uses the JRE. Use the following steps to resolve the problem:

1. In a terminal window, run the following command to display the Java command:

   ```
   java -version
   ```

2. Determine where the Java executable is located by running:

   ```
   which java
   ```

3. Rename or uninstall the Java executable.

   Note: This effects any other applications which depend on Java. Be sure that it is safe to do so. If unsure just rename the Java executable.

4. Run the following command again to ensure that the java executable is not found in the path:
   ```
   which java
   ```
5. Install the product.

Installing IBM Tivoli Monitoring on Red Hat 5 and see the following error: ″KCI1235E terminating ... problem with starting Java Virtual Machine″

If you try to install IBM Tivoli Monitoring on Red Hat 5 with SELinux set to ″permissive″ or ″disabled″ mode (″enforced″ mode is not supported by IBM Tivoli Monitoring) directly after rebooting the system, and you see the following error: "KCI1235E terminating ... problem with starting Java Virtual Machine" at the beginning of the installation before the license is displayed, try executing the **prelink -a** command to resolve the issue.

Installation of the IBM Tivoli Monitoring on the Linux S390 R2.6 64-bit operating system fails with the message ″LINUX MONITORING AGENT V610Rnnn unable to install agent″ where nnn is the release number

Perform the following steps to resolve this problem before running the installation again:

1. Run the following command before running any installation or configuration command for the agent:
   ```
   export JAVA_COMPILER=NONE
   ```
2. Install the s390x.rpm RPM (Red Hat Package Manager) files, in addition to the s90.rpm files, located in the CD ISO images for Red Hat As 4.0 s390x:
   - compat-libstdc++-295-2.....s390x.rpm
   - compat-libstdc++-33-3.....s390x.rpm

   It requires the two s390x.rpm files, in addition to the s390.rpm files. You can obtain the required RPM files from the CD for Red Hat As 4.0 s390x.

The UNIX OS agent (ux) version 350 does not start on AIX 5.3 after upgrading other agents to version 6.1.0

Do one of the following to enable UNIX OS agent (ux) version 350:

- Upgrade the UNIX OS agent to version 6.1.0.

  –OR–
- Add the following line to the uxaix513.ver file in the $CANDLEHOME/registry:
  ```
  runArch = aix533
  ```

Note: Create a backup of the registry before editing it.

Troubleshooting z/OS-based installations

This section describes some problems you might experience with z/OS-based installations, including problems you can resolve with the Installation and Configuration Assistance Tool (ICAT). It includes the following sections:

- “IBM Tivoli Monitoring z/OS initialization checklist” on page 45
- “z/OS-based installations problems and resolutions” on page 52

IBM Tivoli Monitoring z/OS initialization checklist

Use the IBM Tivoli Monitoring z/OS initialization checklist to troubleshoot problems with your IBM Tivoli Monitoring installation on z/OS. The IBM Tivoli Monitoring z/OS initialization checklist includes the following sections:

- "Tivoli Monitoring Services Engine initialization" on page 45
- "RAS1 service initialization" on page 45
- "TCP/IP service initialization" on page 46
- "SNA service initialization" on page 48
- "The Server list" on page 49
- "Local Location Broker service initialization" on page 50
- "Global Location Broker service initialization" on page 51
- "Tivoli Enterprise Monitoring Server hub availability" on page 52

Tivoli Monitoring Services Engine initialization

Tivoli Monitoring Services Engine is a collection of basic Operating System and Communication service routines built specifically for the OS/390® and z/OS Operating environments. All IBM Tivoli Monitoring address spaces load and employ the services of Tivoli Monitoring Services Engine.

Initializing the Tivoli Monitoring Services Engine service: Tivoli Monitoring Services Engine successful initialization is noted by message KLVIN408 IBM OMEGAMON PLATFORM ENGINE VERSION 400 READY. There are two classes of Tivoli Monitoring Services Engine initialization failures:

- Failures that result from unsupported Tivoli Monitoring Services Engine startup parameters. For example: `User abend U0012`
- Failures that result from protocol initialization failures. For example: `User abend U0200`

Repairing Tivoli Monitoring Services Engine initialization failures: For U0012 Abends, incorrect Engine STARTUP parameters, examine and correct the parameters pointed to by the RKLVIN DD statement of the started task JCL. Most often, U0012 Abend failures can be resolved by backing out the last change made to the Tivoli Monitoring Services Engine startup parameters. For U0200 Abends, the root cause of the protocol failures must be remedied. These failures are covered in "TCP/IP service initialization" on page 46 and "SNA service initialization" on page 48.

RAS1 service initialization

The Reliability, Availability and Servicability (RAS1) service refers to the RAS1 building block (Basic Services component) used for diagnostic tracing. Nearly all diagnostic information for IBM Tivoli Monitoring is delivered via the RAS1 (trace) component. This component is configured in member KBBENV of RKANPAR using the KBB_RAS1 environment variable. Often, customers redirect the initialization member via CT/Engine INITLIST processing. INITLIST processing is always echoed to the RKLVLOG with the KLVIN411 message. The following shows an example of a typical KBBENV override to KDSENV

```
KLVIN410 INITLIST MEMBER KDSINIT BEING PROCESSED
 KLVIN411 KLVINNAM=KDSINNAM
 KLVIN411 KLVINTB=KDSINTB
 KLVIN411 KLVINVLG=KDSINVLG
 KLVIN411 KLVINNAF=KDSINNAF
```

```
KLVIN411 KLVINVPO=KDSINVPO
KLVIN411 KLVINSTG=KDSINSTG
KLVIN411 KLVINVAM=KDSINVAM
KLVIN411 KBBENV=KDSENV
```

In this instance, configuration of KBB_RAS1 must display in member KDSENV of RKANPAR.

TCP/IP service initialization

TCP/IP service is Transmission Control Protocol. TCP/IP provides end-to-end connectivity for application-layer codes such as telnet, FTP, and the IBM Tivoli Monitoring Server, Tivoli Enterprise Portal Server, and the Tivoli Enterprise Monitoring agents.

Initializing the TCP/IP service: TCP/IP services for this address space are available if any of the following messages are present:

```
"KDE1I_OpenTransportProvider") Transport opened: socket/ip.tcp
"KDE1I_OpenTransportProvider") Transport opened: socket/ip.pipe
"KDE1I_OpenTransportProvider") Transport opened: socket/ip.udp
```

These messages are only displayed when KDC_DEBUG=Y is active in the environment; KDC_DEBUG=Y must be added to member KDSENV of RKANPAR (or the appropriate initialization member) to obtain the level of tracing required to have these messages echoed to the RAS1 log. IF KDC_DEBUG=Y is set and if none of these messages are in the log, then initialization of the TCP/IP service failed.

Repairing TCP/IP service initialization failures: Use the following steps to ensure the TCP/IP transport service is available:

Note: Failure at any of the following prevents the TCP/IP service from initializing in the address space.

1. Ensure the INITAPI service is successful. See "The INITAPI call" on page 46.
2. Ensure the Name Resolution is successful. See "Name Resolution" on page 47.
3. Ensure the first SEND ran without error. See "The First SEND" on page 48.

The INITAPI call

IBM's implementation of TCP/IP requires that an address space perform an INITAPI before issuing an TCP/IP service request. The INITAPI establishes a communication pipe between the TCP/IP and the OMEGAMON Platform address space. The INITAPI identifies the TCP/IP stack to be used by name. The TCP/IP stack name used in the INITAPI is configured in the KLXINTCP member of RKANPAR. This step must complete successfully. An INITAPI failure is fatal: no TCP/IP services are available to the address space.

Confirming that the INITAPI call was successful: The following messages indicate a successful INITAPI:

```
KLXIN001 HPNS INTERFACE AVAILABLE
KLXIN001 SOCKET INTERFACE TO TCPIPL AVAILABLE
```

Repairing the INITAPI call failures: Most of INITAPI failures are the result of the wrong name specified in KLXINTCP. The following is a classic example of an INITAPI failure:

```
KLVIN405 STARTUP MODULE: KLXINTCP, SEQUENCE(1), USING RKANPAR MEMBER KLXINTCP
KLXIN001 TCP/IP CONFIGURATION: TCP/IP_USERID=TCPIPG
KLXIN003 TCP/IP INTERFACE INITIALIZED
KLXIN009 SOCKET INTERFACE TO TCPIPG UNAVAILABLE: RC(FFFFFFFF) ERRNO(000003F3)
KLXIN004 TCP/IP INTERFACE NOT OPENED: RC(4)
```

Notice that the INITAPI failure is characterized by a return code of (-1) and an ERRNO value, in this case X'3F3' or decimal 1011. ERRNO-s have names. These names are found in TCPERRNO.H and decimal 1011 is EIBMBADTCPNAME. The most common INTIAPI ERRNOs are EMVSINITIAL (156), EIBMBADTCPNAME(1011), and *no-name*(10218).

Reasons for INITAPI failures include:

- The name specified in KLXINTCP is wrong. TCP/IP_USERID is selected based on the specification for TCPIPJOBNAME found in the file pointed to by SYSTCPD in the TCP/IP started task JCL. The default (if no TCPIPJOBNAME exists) is TCPIP. There exists field documentation on the RACF® procedure. These two items should be checked first.
- The started task name does not have RACF authority for the OMVS segment. All address spaces must be given RACF (or ACF2) permission for the OMVS segment to use TCP/IP services. Failure to grant this permission (which is granted to the started task name) can result in INITAPI failures.
- MAXPROCUSER has been exceeded. For MAXPROCUSER problems, you can use console operator command SETOMVS MAXPROCUSER=xxx to increase the current MAXPROCUSER value (as seen by D OMVS,O).

Name Resolution

IBM Tivoli Monitoring V6.1 depends on IBM's HPNS EZASMI getaddrinfo and EZASMI getnameinfo calls for resolver services. These calls are used to find the symbolic name and dotted-decimal IP address of the default network interface for the z/OS image. A failure in either EZASMI call results in failure to initialize the TCP/IP service for the z/OS address space.

Confirming that the Name Resolution calls are successful: The following message indicates Name Resolution was successful:

```
kdebprc.c,661,"interface_discovery") IPV4 interface list: 'SYSL'
 9.42.46.26: source=hostname:0, seq=0, flags=0441
```

In this example, the interface 'SYSL' is found and **source=hostname** indicates that the hostname SYSL was successfully resolved to an IP address.

Repairing the Name Resolution failures: The following messages illustrate a Name Resolution failure:

```
kdebprc.c,661,"interface_discovery") IPV4 interface list: 'WINMVS2C'
9.20.138.199: source=GE1, seq=0, flags=0441
kdebprc.c,214,"register_string") Unable to resolve interface address: WINMVS2C
```

In the messages above, the absence of **source=hostname** indicates an interface was discovered but the name is not resolvable to an address. Typically, this error results when the z/OS image does not contain a TCP/IP resolver setup file that provides either GLOBAL or DEFAULT configuration data. Consequently, native z/OS address spaces are not enabled for name resolution by default. By adding a DD statement for SYSTCPD to the started task JCL of the IBM Tivoli Monitoring task (pointing to a usable file in USER.PARMLIB(TCPDATA)), resolver support can be enabled.

The following messages illustrate a variant of name resolution failure:

```
kdebprc.c,661,"interface_discovery") IPV6 interface list: 'NULL'
"KDE1I_OpenTransportProvider") Status 1DE00048=KDE1_STC_NOINTERFACESREGISTERED
```

The messages above indicate that no (IPV6) interface is registered. This can also result in TCP/IP service initialization failure for the IBM Tivoli Monitoring address space. The absence of an interface can only be fixed by the z/OS TCP/IP administrator.

The First SEND

This section provides information about confirming whether or not First SEND was successful as well as how to repair failures in the First SEND.

Confirming that he First SEND was successful: The sequence of the following communication messages indicate the first SEND operation (an lb__lookup RPC request) and the first RECEIVE operation:

```
"KDCR0_Send") request FFFF/0.0 (200): ip.pipe:#9.42.46.26[1918]
"KDCR0_InboundPacket") response FFFE/0.0 (320): ip.pipe:#9.42.46.26[1918]
"KDCL_GetBinding") Using LLB at ip.pipe:#9.42.46.26[1918]
```

When the first network I/O is successful, the response indicates link and transport connectivity with the hub computer.

Repairing the failures in the First SEND: There are two consideration specific to OS/390 and z/OS platforms:

- RACF permission to the started task for the OMVS segment
- Presence of the well known port on the TCP/IP Port List.

The RACF permission problem might not be detected until the failure of the first network I/O. The ″KDCR0_Send″ request fails with **Errno 2**: EACCESS. This failure can occur with the first use of the started task name.

A similar problem results in EACCESS: the well-known port is defined on the TCP/IP port list. ISPF Option 6, ″netstat portlist″ confirms the presence of the well-known port in the TCP/IP reserved port list. The well-known port should not be on this list.

SNA service initialization

IBM Tivoli Monitoring Address Spaces can configure be configured to use SNA exclusively, or in conjunction with TCP/IP, as a transport service. This configuration is done in the environment member (xxxENV) of RKANPAR. If SNA services are viewed as optional, then removal of KDCFC_ALIAS, KDCFC_MODE, and KDCFC_TPNAME from the xxxENV member of RKANPAR will effectively disable use of SNA.

Initializing the SNA: The following messages are printed in the RAS1/ RKLVLOG when the local SNA configuration is processed from the XXXENV member of RKANPAR:

```
kbbssge.c,52,"BSS1_GetEnv") KDCFP_ALIAS=KDCFC_ALIAS=KLXBS_ALIAS="ASIAGLB"
kbbssge.c,52,"BSS1_GetEnv") KDCFP_TPNAME=KDCFC_TPNAME=KLXBS_TPNAME="SNASOCKETS"
kbbssge.c,52,"BSS1_GetEnv") KDCFP_MODE=KDCFC_MODE=KLXBS_MODE="CANCTDCS"
kdes1rp.c,140,"getEnv") AF_SNA configuration: Alias(ASIAGLB) Mode(CANCTDCS)
TpName(SNASOCKETS)
```

KDCFC_ALIAS identifies the APPL definition of the Independent Logical Unit to be used in this process. KDCFC_MODE identifies the LOGMODE name, the same name found in the LOGMODE specification of the KDCFC_Alias APPL definition. KDCFC_TPNAME is the Transaction Processing Name. The message which indicates the LOCALLU is operational (the configuration is good) is the ″transport opened″ message:

```
kde1otp.c,118,"KDE1I_OpenTransportProvider") Transport opened: com1/sna.pipe
```

Repairing SNA initialization failures: There following lists the reasons for SNA initialization failures:

- The ILU configured for use is not available to the application. The ACBNAME (or APPLNAME) is properly defined in SYS1.VTAMLST but not in the connectable state (CONCT). The ACB must be varied ACTIVE to NET prior to Omegamon Platform Address Space startup. The MVS™ command to verify the state of the ACB is ″D NET, ID=acbname,E″ .
- The ILU is available but not a valid LU6.2 definition. In this case, the is a **KBBCM001** message with an SNA sense code found in the RAS1/RKLVLOG. Diagnose the 8-byte SNA sense code (typically, 087Dnnnn) using the ″SNA Formats and Protocol″ manual.
- The LOGMODE is not a valid LU6.2 LOGMODE, or the LOGMODE and MODETAB specification associated with the ILU definition are not the same, by name, on both systems hosting the endpoints. This is most likely the case for SNA session establishment hangs. The message in the RKLVLOG is ″Receive XID pending: NULL″, and it is followed by another RPC timeout message.

The Server list

IBM Tivoli Monitoring processes build and query a list of possible Tivoli Enterprise Monitoring Server hub addresses, called the Server list. This server list contains local (LLB) and global (GLB) entries. The LLB entries of the Server list are derived. The GLB entries of the Server list are built from the content of the KDCSSITE member of RKANPAR. Shown below are two server lists. The first Server List is for a Tivoli Enterprise Monitoring Server hub, the second Server List is for a remote Tivoli Enterprise Monitoring Server. See the following example:

```
(Server list for a HUB CMS)
LLB entry 1 is ip:#10.248.16.1.1918.
LLB entry 2 is sna:#ATOOEN01.K10DSLB.CANCTDCS.SNASOCKETS.135.
GLB entry 1 is ip:#10.248.16.1.1918.
GLB entry 2 is sna:#ATOOEN01.K10DSLB.CANCTDCS.SNASOCKETS.135.
GLB entry 3 is ip:#10.248.16.1.1918.
GLB entry 4 is sna:#ATOOEN01.K10DSLB.CANCTDCS.SNASOCKETS.135.

(Server list for a REMOTE CMS)
LLB entry 1 is ip:#10.248.17.2.1918.
LLB entry 2 is sna:#ATOOEN01.K20DSLB.CANCTDCS.SNASOCKETS.135.
GLB entry 1 is ip:#10.248.16.1.1918.
GLB entry 2 is sna:#ATOOEN01.K10DSDS.CANCTDCS.SNASOCKETS.135.
GLB entry 3 is ip:#10.248.17.2.1918.
GLB entry 4 is sna:#ATOOEN01.K20DSLB.CANCTDCS.SNASOCKETS.135.
```

Confirming the Server list is correct: In general, the first half of the GLB server list always points to the Tivoli Enterprise Monitoring Server hub. The first half of the GLB entries in the Server list are taken from member KDCSSITE of RKANPAR. If the LLB entries are derived (implicitly) and the GLB entries are explicitly configured in the KDCSSITE member, you can diagnose and repair the errors in KDCSSITE.

- The number of LLB entries must be half the number of GLB entries. If this is not the case, then there might be a mismatch between the number of transports services configured to this Tivoli Enterprise Monitoring Server (the KDC_FAMILIES environment variable) versus the number of transports configured for the hub Tivoli Enterprise Monitoring Server (KDCSSITE).
- For a hub Tivoli Enterprise Monitoring Server, each LLB entry must be identical to the corresponding GLB entry in the Server list. As in the Server list for a hub Tivoli Enterprise Monitoring Server example, LLB entry 1 is the same as GLB entry 1 and LLB entry 2 is the same as GLB entry 2.

- For a remote Tivoli Enterprise Monitoring Server, the opposite is true: each LLB entry must be different than the corresponding GLB entry in the Server list. As in the example (Server list for a REMOTE Tivoli Enterprise Monitoring Server), LLB entry 1 is different than GLB entry 1, LLB entry 2 is different than GLB entry 2.

Repairing errors in the Server list: Errors in SNA initialization might be name mismatches. Examine the LLB entries and the GLB entries for the Omegamon Platform address space for typographical errors. The VTAM® network ID is victim of frequent error. Typically the VTAM network ID (the first component of the SNA socket address, ATOOEN01 in the example above) is the same for ALL entries. While it CAN differ, typically, it does not. A difference between the LLB VTAM net ID and the GLB VTAM net ID is often an error in member KDCSSITE of RKANPAR.

Local Location Broker service initialization

An intrinsic part of Remote Procedure Call architecture is the location broker. RPC servers (callers of rpc__listen) publish their service and the address of this service in a location broker. RPC clients (callers of rpc__sar) use the location broker to obtain the address of a server prior to making a call to that server. Use of the location broker is well-defined by the lb__lookup() Remote Procedure Call. It is also appropriate to mention that there are two types of location brokers: the local location broker (LLB) and the global location broker (GLB). There is one local location broker for every RPC server (The Tivoli Enterprise Monitoring Server has it's own LLB. The monitoring agent, the Warehouse Proxy agent, and the Tivoli Enterprise Portal Server all have their own instance of a LLB.) RPC servers, by definition, publish the service offered and address of this service in their local location broker.

Confirming the Local Location Broker service initialized: The bind messages in the RKLVLOG indicate the success or failure of the LLB service initialization. One of two message IDs prefix the LLB status messages, depending on how the LLB service was started. **KDSNC007** is the message prefix issued on successful LLB process initialization when the LLB is started internally by the Tivoli Enterprise Monitoring Server.

```
 KDSNC004  Bind of local location broker complete= ip.pipe:#9.42.46.26.21343.
 KDSNC004  Bind of local location broker complete= ip:#9.42.46.26.21343.
 KDSNC004  Bind of local location broker complete= sna:
(USCACO01.VWCTHLB.CANCTDCS.SNASOCKETS).135.
 KDSNC007  Local Location Broker is active
```

Repairing errors in Local Location Broker service initialization: Bind failures due to insufficient authorization are reported with **Errno. 2** (EACCESS)o the Local Location Broker (as the name LOCAL implies) is done with a local socket address. The bind fails for the following reasons:

- Insufficient authorization
- The address is unavailable

```
 (32645848-E8E45647:kdebnws.c,64,"KDEB_NewSocket")
Status 1DE00000=KDE1_STC_CANTBIND.
 (3265B3F0-E8E45647:kdebnws.c,84,"KDEB_NewSocket")
<0x176A97D4,0x10> BSD bind details:
Family 2, Socket 0, Status 1DE00000, Errno 2.
    00000000   00022EE1 00000000  00000000 00000000   ................
 (326B1EA8-E8E45647:kdcsuse.c,98,"KDCS_UseFamily") status=1c010005,
"cant bind socket",
 ncs/KDC1_STC_CANT_BIND
 2001.252 04:42:41 KDC00008 Unable to create location server, status 1C010005
```

Bind failures due to address-in-use:

```
 (3ACDB600-DEB3B73F:kdebnws.c,62,"KDEB_NewSocket") Status 1DE00030=KDE1_STC_
ENDPOINTINUSE
 (3ACF5028-DEB3B73F:kdcsuse.c,99,"KDCS_UseFamily") status=1c010005, "cant bind
socket", ncs/KDC1_STC_CANT_BIND
```

Bind failure due to address-in-use but not fatal:

```
 (1CF7B1F8-E6D9D743:kdcsuse.c,99,"KDCS_UseFamily") status=1c010005, "cant bind
socket", ncs/KDC1_STC_CANT_BIND
 KDSNC007   Local Location Broker is active
```

If the bind failure is due to EADDRINUSE but the Broker service is started, the error might not be fatal. Determine whether or not the bind of this IBM Tivoli Monitoring address space was to the LLB in that address space. In some instances, an address space can bind to the LLB of another address space. This can only occur in the same system image. If the bind failure is fatal, then another process on this system image has the 'well-known' port. Bind failures due to insufficient authorization are fixed by granting RACF permission for the OMVS segment to the Omegamon Platform started task name.

Global Location Broker service initialization

The Global Location Broker (GLB) differs from the Local Location Brokers in one important respect other than the name: there is only one GLB for the domain or enterprise. By definition, there will be only one Local Location Broker which points to the Global Location Broker for the domain. The RPC server LLB which points to the GLB (and there will be only one of these in an enterprise) is, by definition, the hub. The important thing to remember from all this discussion of local and global brokers is this: For a process to locate the Tivoli Enterprise Monitoring Server hub, the process must query (issue lb__lookup() RPC requests to) the list of candidate Global Location Brokers in order as specified in the global site text file (glb_site.txt on distributed platforms and the KDCSSITE member of RKANPAR for OS/390 and z/OS platforms). Below are the product communication messages which enumerate the candidate GLB list (GLB entry 1, GLB entry 2, etc):

```
 GLB entry 1 is ip.pipe:#9.42.46.26.21343.
 GLB entry 2 is ip:#9.42.46.26.21343.
 GLB entry 3 is sna:(USCACO01.VWCTHLB.CANCTDCS.SNASOCKETS).135.
 GLB entry 4 is ip.pipe:#9.42.46.26.21343.
 GLB entry 5 is ip:#9.42.46.26.21343.
 GLB entry 6 is sna:(USCACO01.VWCTHLB.CANCTDCS.SNASOCKETS).135.
```

Connectivity between the Omegamon/XE and Tivoli Enterprise Monitoring Server address space fails if this list is incorrect. The GLB entries display in the order in which they are configured in the global site text file. Additionally, the address of the local platform is appended to this list. This is an RPC architecture requirement. It allows the local platform to be queried when the GLB list has been exhausted and no hub is found.

Confirming the Global Location Broker service initialized: The bind messages in the RKLVLOG indicate the success or failure of the GLB service initialization. A message ID prefixes the GLB status messages and indicates how the GLB service was started. **KDSNC008** is the message prefix issued on successful GLB process initialization when the LLB is started internally by the Tivoli Enterprise Monitoring Server.

```
 Bind of global location broker complete= ip.pipe:#9.42.46.26.21343.
 Bind of global location broker complete= ip:#9.42.46.26.21343.
 Bind of global location broker complete= sna:
(USCACO01.VWCTHLB.CANCTDCS.SNASOCKETS).135.
 Global Location Broker is active
```

Repairing errors in Global Location Broker service initialization: GLB service failures occur because there are errors in member KDCSSITE of RKANPAR. Each socket address in KDCSSITE is assumed to be the socket address of the Tivoli Enterprise Monitoring Server hub. If none of the entries in the KDCSSITE file are the correct socket address of the Tivoli Enterprise Monitoring Server hub, this process initialization fails.

Tivoli Enterprise Monitoring Server hub availability

The following message indicates the Tivoli Enterprise Monitoring Server hub is available:

```
ko4locbr.cpp,731,"Mgr::locateEverbody") lbLookupHub returned error <0>,
                                        ip<ip:#9.42.46.26.21343>
                                        sna<> pipe <ip.pipe:#9.42.46.26.21343.>
```

Do the following if the Tivoli Enterprise Monitoring Server hub is not available:

- Review the RAS1 log for the Tivoli Enterprise Monitoring Server to ensure it is connected.
- Review network topology to ensure Firewall policy does not prohibit connection initiation from the Tivoli Enterprise Monitoring Server hub.
- Review ″Transport opened″ on the Tivoli Enterprise Monitoring Server to ensure at least one transport service is common between it and this Tivoli Enterprise Monitoring address space.

z/OS-based installations problems and resolutions

This section describes problems that might occur with a z/OS-based installation.

How do you customize the following Tivoli Enterprise Monitoring Server configuration values using the Configuration tool?

You can increase the following storage-related parameters if IBM Software Support personnel instructs you to do so:

- Web Services SOAP Server
- startup console messages
- communications trace
- storage detail logging and associated intervals
- minimum extended storage
- primary and extended maximum storage request size
- language locale
- persistent datastore parameters

Use the following steps to increase the storage-related parameters:

1. From the **Configure the Tivoli Enterprise Monitoring Server** main menu, select the **Specify configuration values** option.
2. On the next panel, press **F5=Advanced** to open the **Specify Advanced Configuration Values** panel. The next panel includes the following options:
   - Enable OMEGAMON SOAP Server (applicable to a Hub Tivoli Enterprise Monitoring Server only)
   - Enable startup console messages
   - Enable communications trace
   - Enable storage detail logging and associated intervals
   - Specify the Virtual IP Address (VIPA) type
   - Specify the minimum extended storage

- Specify the primary and extended maximum storage request size
- Specify the language locale for globalization
- Specify the persistent datastore parameters

3. Customize the fields with the preferred values in the **Specify Advanced Configuration Values**.
4. Select the **Create runtime members** option to regenerate the ″DS#3xxxx Create runtime members″ job from the **Configure the Tivoli Enterprise Monitoring Server** main menu.
5. Submit the job and check for good condition codes.
6. Recycle the Tivoli Enterprise Monitoring Server.

'DATA SET NOT FOUND' JCL error occurs when submitting the DS#3xxxx Tivoli Enterprise Monitoring Server 'Create runtime members' job.

Ensure the following:

- The pp#1xxxx RTE Build job successfully ran for this RTE. To perform the RTE Build job,
  1. Place the **B** option next to the RTE on the KCIPRTE RTE main menu to instruct Configuration tool generates the pp#1xxxx mRTE Build job.
  2. Ensure that the RTE Build job contains allocations for the &rvhilev.&rte.RKDS* and &rvhilev.&rte.RK* runtime libraries.
  3. Submit the RTE Build job.
- The **Tivoli Enterprise Monitoring Server in this RTE** field is set to **Y** on the RTE Update panel if the RTE Build job does not contain &rvhilev.&rte.RKDS* libraries. If you must edit the field, regenerate the RTE Build job.

Refer to the *IBM Tivoli Monitoring Installation and Setup Guide* manual for more information about configuring a z/OS Tivoli Enterprise Monitoring Server and the RTE Build job.

The error 'CMSLIST NOT ALLOWED' occurs on the 'Specify Advanced Configuration Values' panel when Tivoli Enterprise Monitoring Server type equals hub.

The F10=CMSLIST key from the **Specify Advanced Configuration Values** panel is only applicable to a remote Tivoli Enterprise Monitoring Server. This PF Key allows the remote Tivoli Enterprise Monitoring Server to select a hub Tivoli Enterprise Monitoring Server to which it can connect. The F10=CMSLIST function key is unavailable to a hub Tivoli Enterprise Monitoring Server. Go to the previous **Specify Configuration Values** panel to verify what type of Tivoli Enterprise Monitoring Server you are configuring

The 'Enter required field' error occurs for the 'Global location broker applid of Hub' or the 'Network ID of Hub' VTAM-related fields

On the **Specify Configuration - Hub Values for Remote Tivoli Enterprise Monitoring Server** panel, the message ″Enter required field″ occurs although the remote z/OS Tivoli Enterprise Monitoring Server connects to the Hub Tivoli Enterprise Monitoring Server through IP protocols. If you are configuring a remote z/OS-based Tivoli Enterprise Monitoring Server that connects to a non-z/OS Hub Tivoli Enterprise Monitoring Server via the IP or IPPIPE communication protocol, use the following steps as a resolution:

1. On the **Specify Configuration - Hub Values for Remote Tivoli Enterprise Monitoring Server** panel, enter any value in the following fields:

- **Global location broker applid of Hub**. For example, enter default ″CTDDSLB″ if this VTAM APPLID is not used.
- **Network ID of Hub**. For example, enter the NETID value from SYS1.VTAMLST(ATCSTRnn)).

Note: Neither of these values adversely affect the connection for the remote Tivoli Enterprise Monitoring Server.

2. From the **Configure the Tivoli Enterprise Monitoring Server** main menu, select the **Specify communication protocols** option.
3. On the **Specify communication protocols** panel, specify the IP protocols of choice and ensure. Specify **SNA.PIPE** as one of the protocols that the remote Tivoli Enterprise Monitoring Server uses for connection.
4. Navigate forward to specify the communication protocols values for the selected protocols.
5. From the **Configure the Tivoli Enterprise Monitoring Server** main menu, select the **Create runtime members** option to generate the DS#3xxxx Create runtime members job.
6. Submit the job and check for good condition codes.
7. From the **Configure the Tivoli Enterprise Monitoring Server** main menu, select the **Complete the configuration** option.
8. Review the remaining tasks to finish the configuration of the product before starting the Tivoli Enterprise Monitoring Server.

The pp#Mxxxx Tivoli Enterprise Monitoring Server migration job generated by the Configuration tool ended with a condition code=08.

The JCL used to upgrade an existing RTE to IBM Tivoli Monitoring v6.1 level must perform several steps to ensure the existing data is not lost nor corrupted. The batch job stops processing data in the event of an error, such as insufficient DASD. The batch job is not submitted a second time but three batch job are created that can be used to restore the data to its original state. Therefore, the upgrade JCL can be submitted to run and start from the beginning to allow for conditions that initially caused the problem to be corrected. Based on what step was running when the failure occurred, you might need to run one or more of the following jobs in RKANSAM:

- KDSRSTRO
- KDSRSTRN
- KDSRSTRV

Use the following VSAM migration steps:

1. Run RNMEVSAM/ALLCVSAM step to:
   - Rename the previous version's VSAM file to a backup VSAM name.
   - Allocate the new V610 VSAM file based on the new format.

   Note: This step applies to VSAM files containing data that do not need to be converted.

   –OR–Edit and submit KDSRSTRN to restore to files to the original state.
2. Run KDSRCONV step to:
   - Allocate the new V610 VSAM libraries using temporary XKDS* VSAM names.
   - REPRO the previous version VSAM file data (RKDS*) to flat file.

- Convert the fields to ASCII and resize columns accordingly. REPRO the converted flat file to the new XKDS* VSAM libraries.
- Write out the output from the conversion.

–OR–Edit and submit KDSRSTRV to restore a file to original state.

3. Run RNMEEIBO step to rename the previous version's VSAM files (RKDS*) to backup VSAM names (BKDS*) if the KDSRCONV step is successful.

   –OR–Edit and submit KDSRSTRO to restore file to original state.

4. Run RNMEEIBN step to rename the new V610 XKDS* VSAM libraries to the runtime RKDS* VSAM names if the RNMEEIBO step is successful.

   –OR–Edit and submit KDSRSTRN to restore to original state.

   Note: By default the restore jobs runs against all of the processed datasets. The comments section of these jobs detail that some of the datasets can be commented out depending on the time and nature of the failure experienced. For instance, only 4 of 7 datasets were renamed during RNEVSAM, so only those 4 must be restored to their original names. If you are not certain which job to run or what datasets to comment out in these jobs, contact IBM Software Support.

The Tivoli Enterprise Monitoring Server starts normally in a system without the Integrated Cryptographic Service Facility but does not connect to the Tivoli Enterprise Portal Server

Although Integrated Cryptographic Service Facility (ICSF) provides robust password encryption, you are not required to use it as it can affect compatibility with the z/OS OMEGAMON monitoring products. Perform the following steps so that the Tivoli Enterprise Portal Server can connect to the Tivoli Enterprise Monitoring Server:

- During configuration:
  1. Select **Configure the Tivoli Enterprise Monitoring Server** > **Specify configuration values** > **Integrated Cryptographic Service Facility (ICSF) installed?**
  2. Specify **N** in the on the **Integrated Cryptographic Service Facility (ICSF) installed?** panel.
- After the Tivoli Enterprise Monitoring Server configuration is complete and it is running:
  1. The Tivoli Enterprise Portal Server configuration must be modified to use an older, less robust encoding algorithm. Edit the kfwenf file in *install_dir*\CNPS, where *install_dir* is C:\IBM\ITM by default in a text editor.
  2. In a line by itself, type the text USE_EGG1_FLAG=1
  3. Save the document and exit.
  4. Stop the Tivoli Enterprise Portal Server, if it is running, then start it.

On a system with one or more existing OMEGAMON monitoring environments, the global CSI is corrupt and cannot be used for installing a new version

Use the following steps manually merge existing datasets with IBM Tivoli Monitoring V6.1 datasets only after IBM Software Support instructs you to do so:

1. Backup the following datasets:
   - Runtime
   - Target
   - INSTDATA

- INSTDATW
- INSTJOBS
- INSTLIB
- INSTLIBW
- INSTQLCK
- INSTSTAT

Note: You must backup the specified datasets.

2. After installing the product on a new CSI, refer to the Program Directory document to verify that the datasets contain enough allocated space for the new libraries.
3. From the ISPF panel 3.3 or a JCL batch job, copy the contents of the new modified Target libraries in Table 9 to their counterparts in the old Target libraries, ensuring that like-named members are replaced.

Table 9. Modified target libraries

TKANCMD
TKANCUS
TKANDATV
TKANHENU
TKANMAC
TKANMOD
TKANMODL
TKANPAR
TKANPENU
TKANSAM
TKCIINST
TKNSLOCL

4. Manually delete obsolete datasets listed in Table 10 from TKANMODL that interfere with operation of new version of Tivoli Enterprise Monitoring Server on z/OS.

Table 10. TKANMODL obsolete members

KLXABIND
KLXACLOS
KLXAHBAD
KLXAHBNM
KLXAINIT
KLXAINTE
KLXAOPEN
KLXAPEER
KLXARECV
KLXASELF
KLXASEND
KLXASLIH

Table 10. TKANMODL obsolete members (continued)

KLXAWAIT
KLXAXDAT
KLXAXTPL
KLXI@INT
KLXI@IUC
KLXIDESP

Uninstallation problems and workarounds

This section provides information about how to troubleshoot an uninstallation.

Uninstallation is blocked by another process that is using the IBM Tivoli Monitoring eclipse help server

Kill the javaw tasks associated with the IBM Tivoli Monitoring eclipse help server on the system so that the uninstall can continue.

Removing a failed installation on Windows

The following sections describe the process for removing a release that is partially installed and cannot be removed by using the Add and Remove Programs tool. The following topics are discussed:

Table 11. Removing a failed installation on Windows

Goal	Where to find information
Remove a failed installation from computer that has never had IBM Tivoli Monitoring or Candle OMEGAMON installed.	"Removing a failed first time installation"
Remove a failed installation from a computer that you were trying to upgrade from Candle OMEGAMON.	"Removing a failed upgrade" on page 58

Removing a failed first time installation

Use the following steps to remove a partially installed IBM Tivoli Monitoring installation:

1. Ensure that there is no entry in the Add and Remove Programs tool for the component that you attempted to install. If there is an entry, use that entry to uninstall the product. If there is no entry, proceed to the next step.
2. Open the Windows Explorer and navigate to the IBM Tivoli Monitoring installation directory (C:\IBM\ITM by default).
3. Launch the Manage Tivoli Enterprise Monitoring Services utility by double-clicking the KinConfg.exe file located in either the Install or InstallITM subdirectory.
4. If any agents, the portal server, or the monitoring server are listed in the Manage Tivoli Enterprise Monitoring Services window, right-click each and click **Advanced > Unconfigure**. Repeat this step for all components that are listed. Close the Manage Tivoli Enterprise Monitoring Services utility.
5. Open the Windows Control Panel.
6. Double-click **Administrative Tools** and then double-click **Services**.

7. Verify that all related IBM Tivoli Monitoring services have been removed. These services match those listed in the Manage Tivoli Enterprise Monitoring Services window.
8. Open the Registry Editor by clicking **Start → Run** and typing `regedt32`. Click **OK**.

   Note: Create a backup of the registry before editing it.
9. Expand the key HKEY_LOCAL_MACHINE registry key.
10. Expand the SOFTWARE registry key.
11. Expand the Candle registry key and record any sub-keys that are present. If the Candle key does not exist, proceed to step 15.
12. Expand the OMEGAMON registry key under the Candle key and record the content of the OMEGAMON key values.
13. Delete the Candle registry key and all sub-keys.

    On Windows XP, you can right-click the Candle registry key and click **Delete**.
14. Close the Registry Editor.
15. Open the Windows Explorer and find the IBM Tivoli Monitoring installation location on your system. The default value is C:\IBM\ITM.
16. Delete this directory and all subdirectories.
17. Remove the IBM Tivoli Monitoring bookmark from the Start menu:
    a. Click **Start** from the Windows desktop to display the Start menu items.
    b. Click **Programs**.
    c. Right-click IBM Tivoli Monitoring to display the bookmark menu options.
    d. Click **Delete** to remove the IBM Tivoli Monitoring bookmark from the Windows desktop start menu.

You can now install IBM Tivoli Monitoring.

Removing a failed upgrade

To remove a failed upgrade, first ensure that there is no entry in the Add and Remove Programs tool for the new component you are attempting to install. If there is an entry, use that entry to uninstall the product. If there is no entry, use the following steps to remove the failed upgrade.

The first step to removing a failed upgrade is to determine where the install failed: either before the files were copied or after the files were copied. For GUI installations, the files are copied after you click **Next** on the Start Copying Files window. If you performed a silent installation, look for a pair of entries separated by a blank line:

```
FirstUIBefore exiting to file copy
FirstUIAfter entry after file copy
```

If neither exist, then the installation failed before the files were copied. See "Installation failed before files were copied."

If both entries exist, the installation failed after the files were copied. See "Installation failed after files were copied" on page 59

Installation failed before files were copied: Check to see if the entry for your previous installation exists in the Add and Remove Programs tool. If it does not exist, follow the instructions in "Removing a failed first time installation" on page 57. Your previous installation is too corrupt to use and must be completely

removed. You must either completely reinstall the previous release and then upgrade to IBM Tivoli Monitoring or just install IBM Tivoli Monitoringwithout attempting to upgrade.

If the entry exists in the Add and Remove Programs tool, you can still use your existing Candle OMEGAMON installation. Launch Manage Candle Services to start all components.

Installation failed after files were copied: If your installation failed after the files were copied, your current installation has been corrupted by the partial installation of IBM Tivoli Monitoring. You must either completely reinstall the previous release and then upgrade to IBM Tivoli Monitoring or just install IBM Tivoli Monitoring without attempting to upgrade.

Check the Add and Remove Programs tool to see if either your previously installed Candle OMEGAMON or IBM Tivoli Monitoring is available.

If neither are available, see "Neither products are available in the Add and Remove Programs tool."

If one is available see "One product is available in the Add and Remove Programs tool" on page 60.

If both are available, "Both products are available in the Add and Remove Programs tool" on page 60.

Neither products are available in the Add and Remove Programs tool: Use the following steps if neither Candle OMEGAMON or IBM Tivoli Monitoring exists in the Add and Remove Programs tool:

1. Open the Windows Explorer and navigate to the IBM Tivoli Monitoring installation directory. By default, the installation location is C:\IBM\ITM\Install, C:\IBM\ITM\InstallITM, C:\Candle\Install, or C:\Candle\InstallITM.
2. Launch the Manage Tivoli Enterprise Monitoring Services utility by double-clicking the KinConfg.exe file located in either the Install or InstallITM subdirectory. Launch the KinConfg.exe from the InstallITM directory if possible.
3. If any agents, the portal server, or the monitoring server are listed in the Manage Tivoli Enterprise Monitoring Services window, right-click each and click **Advanced > Unconfigure**. Repeat this step for all components that are listed. Close the Manage Tivoli Enterprise Monitoring Services utility.
4. Open the Windows Control Panel.
5. Double-click **Administrative Tools** and then double-click **Services**.
6. Verify that all related Candle OMEGAMON and IBM Tivoli Monitoring services have been removed. These services match those listed in the Manage Tivoli Enterprise Monitoring Services window.
7. Open the Registry Editor by clicking **Start → Run** and typing `regedt32`. Click **OK**.

   Note: Create a backup of the registry before editing it.
8. Expand the key HKEY_LOCAL_MACHINE registry key.
9. Expand the SOFTWARE registry key.
10. Expand the Candle registry key and record any sub-keys that are present. If the Candle key does not exist, proceed to step 14.

11. Expand the OMEGAMON registry key under the Candle key and record the content of the OMEGAMON key values.
12. Delete the Candle registry key and all sub-keys.

    On Windows XP, you can right-click the Candle registry key and click **Delete**.
13. Close the Registry Editor.
14. Open the Windows Explorer and find the Candle OMEGAMON and IBM Tivoli Monitoring installation directories. The default value for Candle OMEGAMON is C:\Candle; the default value for IBM Tivoli Monitoring is C:\IBM\ITM.
15. Delete this directory and all subdirectories.
16. Use the steps in "Verifying the uninstallation" to verify that you successfully removed the failed upgrade.
17. Remove the IBM Tivoli Monitoring bookmark from the Start menu:
    a. Click **Start** from the Windows desktop to display the Start menu items.
    b. Click **Programs**.
    c. Right-click IBM Tivoli Monitoring to display the bookmark menu options.
    d. Click **Delete** to remove the IBM Tivoli Monitoring bookmark from the Windows desktop start menu.

One product is available in the Add and Remove Programs tool: Use the following steps if an entry for either Candle OMEGAMON or IBM Tivoli Monitoring exists in the Add and Remove Programs tool:

1. Attempt to uninstall both releases from the Add and Remove Programs entry.
2. If this is successful, proceed to "Verifying the uninstallation."
3. If this is not successful and the entry has been removed from the Add and Remove Programs tool, see "Neither products are available in the Add and Remove Programs tool" on page 59.
4. If the entry is still present in the Add and Remove Programs tool, copy the KINWIINS.VER file (from the \WINDOWS\VERFILES\KINWIINS.VER directory on the installation CD) to the <*itm_installdir*>\Install\Ver directory, where <*itm_installdir*> is the IBM Tivoli Monitoring installation directory.

   Delete the KINWIINSMSTR.VER file from this directory if it exists.

   Note: You might need to create the Install\Ver subdirectory if it is does not exist.
5. Attempt to uninstall the release again. If it fails again, contact IBM Software Support for assistance.

Both products are available in the Add and Remove Programs tool: Use the following steps if both the Candle OMEGAMON or IBM Tivoli Monitoring entries exist in the Add and Remove Programs tool:

1. Uninstall IBM Tivoli Monitoring through the Add and Remove Programs tool.
2. Uninstall Candle OMEGAMON through the Add and Remove Programs tool.
3. Proceed to "Verifying the uninstallation."

Verifying the uninstallation: Use the following steps to verify that you successfully removed the failed installation:

1. Verify that the installation home directory and all contents have been removed.
2. Open the Registry Editor by clicking **Start → Run** and typing `regedt32`. Click **OK**.

3. Expand the key HKEY_LOCAL_MACHINE registry key.
4. Expand the SOFTWARE registry key.
5. Verify that the Candle registry key and all sub-keys have been removed from HKEY_LOCAL_MACHINE\SOFTWARE.

You are now ready to install IBM Tivoli Monitoring.

Incorrect behavior after an uninstallation and reinstallation

You might experience incorrect behavior if you uninstall then reinstall the product without restarting the system. For example, you might experience the following problems:

- Inability to create trace logs.
- Agents do not start.
- Agents data is corrupt.

Restart the system to resolve the problems.

Tivoli Data Warehouse database does not uninstall

When you uninstall IBM Tivoli Monitoring, the Tivoli Data Warehouse database is not removed and the ODBC data source exists. You must remove the Tivoli Data Warehouse database and the ODBC manually.

The agent installation log on the endpoint indicates that error AMXUT7512E occurred

The error AMXUT7512E might occur when running the Distributed Monitoring Upgrade Toolkit. The agent was not uninstalled for one of the following reasons:

- There is another uninstallation in progress that cannot complete until the computer is restarted.

  –OR–

- The uninstallation requires stopping a process that is currently in use by a another component.

Refer to the `lcfd.log` on the endpoint and agent installation log as listed in Table 12 to determine the exact cause of the problem.

Table 12. Installation logs

Windows	UNIX-based systems
install_Dir/Install/Abort IBM Tivoli Monitoring timeStamp.log	*install_Dir*/logs/candle_installation.log

You can manually uninstall the operating system agent by running the command for your platform as listed in Table 13:

Table 13. Uninstall OS command

Windows	UNIX-based systems
LCF_BINDIR\\..\\TME\\ITMUpgrade \\ITMUpgradeManager\\setup.	*LCF_BINDIR*/../TME/ITMUpgrade/ ITMUpgradeManager/uninstall.sh

Contact IBM Software Support if you cannot uninstall the agent.

Prompted to uninstall a database that was not running during uninstallation

During uninstallation, when prompted for the DB2 username and password in order to remove the Tivoli Enterprise Portal Server from the DB2 database, you were prompted with the following question:

```
would you like to delete the Tivoli Enetrprise Portal MSSQL/MSDE Database
```

The Microsoft® MS SQL Server database was not running. My Tivoli Enterprise Portal Server is installed and configured with a DB2 database and not a Microsoft MS SQL Server database.

It is likely that the system you are using at one time had a Microsoft MS SQL Server database installed that was not properly uninstalled. It does not matter whether the database is running or not; if the data source exists you will be asked the question, and if you answer yes there will be an attempt to remove the database.

Chapter 4. Connectivity troubleshooting

This section provides descriptions of and resolutions for problems you might experience with connectivity, including logging in, passwords, and communication among IBM Tivoli Monitoring components. Tivoli Enterprise Portal monitors the connections between server and client and server and host data sources continuously. When Tivoli Enterprise Portal detects a connection error it can repair the error and your client session can resume unaffected. Use the information in this section to diagnose and recover from connectivity problems.

If you are running the Tivoli Enterprise Monitoring Server on z/OS, see "Troubleshooting z/OS-based installations" on page 44 for information about configuration problems affect connectivity.

The Tivoli Enterprise Portal Server does not start after installation

Check the following log files for messages that indicate why the Tivoli Enterprise Portal Server did not start:

Table 14. The Tivoli Enterprise Portal Server does not start after installation

Log file	For messages that indicate . . .
`kfwras1.log`	A failure during upgrade.
	The Tivoli Enterprise Monitoring Server hub did not connect.
`install_dir\cnps\sqllib\migrate.log`	Any error.

Cannot log in to the Tivoli Enterprise Portal

The following table provides resolutions for problems logging in to the Tivoli Enterprise Portal.

Table 15. Cannot log in to the Tivoli Enterprise Portal

Problem	Resolution
User authorization failed -OR- `KFWITM215E: Unable to process logon request`	• The user ID and password are correct. • The Tivoli Enterprise Monitoring Server started. • The user is defined in the Tivoli Enterprise Portal Server. • The Tivoli Enterprise Portal Server database is running. • The TEPS or TEPS2 data sources are configured. • Security validation is active on the Hub Tivoli Enterprise Monitoring Server. If you still cannot log in, refer to `c:\ibm\itm\cnps\logs\kfwras1.log`. If you are still unable to log in, contact IBM Software Support.
An error message displays in the status bar of the Logon window.	Recycle the Tivoli Enterprise Portal Server.
If the status bar displays the Validating User Credentials message continuously, the Tivoli Enterprise Monitoring Server stopped.	Start the Tivoli Enterprise Monitoring Server.

Table 15. Cannot log in to the Tivoli Enterprise Portal (continued)

Problem	Resolution
If you select **Security: Validate User** for the Tivoli Enterprise Monitoring Server configuration during installation you cannot login to the Tivoli Enterprise Portal.	Use the following steps to configure the monitoring server security setting: 1. In the Manage Tivoli Enterprise Monitoring Services window, right-click the monitoring server. 2. Click **Reconfigure** (on Windows) or **Configure** (on UNIX). 3. Click **OK** on the first configuration window. 4. Clear **Security: Validate User** and click OK.

Cannot connect to Tivoli Enterprise Portal Server

Before performing any of the following problem determination steps, verify that the connection problems are not the result of firewall settings. The following table provides resolutions for problems logging in to the Tivoli Enterprise Portal Server.

Table 16. Cannot connect to Tivoli Enterprise Portal Server

Problem	Resolution
`KFWITM001W Unable to connect to Tivoli Enterprise Portal Server`	1. Check the kfw1ras.log for details if an attempt to log in fails with message KFWITM001W. The kfw1ras.log can list any of the following messages that indicate a reason for the failure: • `SQL1224N A database agent could not be started to service a request, or was terminated as a result of a database system shutdown or a force command.` • `SQL1226N The maximum number of client connections are already started. SQLSTATE=57030` Both messages SQL1224N and SQL1226N occur when the Tivoli Enterprise Portal Server attempts to validate the user ID entered in the browser. 2. Restart the database. 3. Attempt the login again.
`KFWITM215E Unable to process logon request`	

Table 16. Cannot connect to Tivoli Enterprise Portal Server (continued)

Problem	Resolution

A remote Tivoli Enterprise Portal client does not connect to a UNIX-based system Tivoli Enterprise Portal Server with the error message:
`KFWITM001W Unable to connect to Tivoli Enterprise Portal Server`
	A remote Tivoli Enterprise Portal client login dialog does not connect to a Tivoli Enterprise Portal Server hosted on a UNIX-based system, but the following are true:
	• A local Tivoli Enterprise Portal client connects to the Tivoli Enterprise Portal Server.
	• You can ping the Tivoli Enterprise Portal Server computer from the remote computer.
	• A Web browser can remotely connect to http://*host_name*:1920 to get to the service links, assuming the default service port of 1920 was used during installation.
	The hostname might not resolve to the correct IP address on the local Tivoli Enterprise Portal Server host. To confirm that the hostname resolves to the correct IP address, run the following command from the host on which the Tivoli Enterprise Portal Server was installed:
	`ping hostname`
	–OR–
	`ping -s hostname`
	The ping command displays the IP address of the computer it pings. Ensure that the IP address is the same as the one to which the remote Tivoli Enterprise Portal client is attempting to connect. For example, if your Tivoli Enterprise Portal Server is located on a host with the hostname `tepshost`, and the host's `/etc/hosts` file includes an entry similar to the following:
	`127.0.0.1 localhost.localdomain localhost tepshost`
	Running `ping tepshost` displays an IP address of 127.0.0.1, which is the address of the local loopback network interface and the reason a remote computer cannot connect to it. In this case, you must update the `/etc/hosts` file to give `tepshost` its own entry, as in the following example:
	`127.0.0.1 localhost.localdomain localhost`
	`192.168.0.9 tepshost`

Tivoli Enterprise Portal client cannot find Tivoli Enterprise Portal Server	1. Select **Start** > **Programs** > **Tivoli Monitoring Services** > **Manage Tivoli Enterprise Monitoring Services**. 2. Check that the Tivoli Enterprise Portal Server service is running and, if not, restart it. 3. If the Tivoli Enterprise Portal Server is started, see the KFWRAS1.LOG for any errors reported by the Tivoli Enterprise Portal Server application. When the server starts, an "event ID 1: KFW0001 - Tivoli Enterprise Portal Server (Tivoli Enterprise Portal Server) startup complete" information entry is logged. If you see an error entry, double-click the item to see the description.

Table 16. Cannot connect to Tivoli Enterprise Portal Server (continued)

Problem	Resolution

Cannot connect to the Tivoli Enterprise Portal Server because it stopped.	Do the following to determine if the Tivoli Enterprise Portal Server stopped and restart it:
	1. On the computer where the Tivoli Enterprise Portal Server is installed, select **Start > Programs > IBM Tivoli Monitoring Services > Manage IBM Services.**
	2. Optional: Right-click the Tivoli Enterprise Portal Server entry and select **Change Startup** from the menu.
	3. In the window that opens, select **System Account** and place a check in the **Allow Service to Interact with Desktop** box.
	4. Click **OK** to open a command prompt window when the Tivoli Enterprise Portal Server is started. Internal Tivoli Enterprise Portal Server commands display in the command prompt window.
	5. Verify that the Tivoli Enterprise Portal Server service is started. The Tivoli Enterprise Portal Server is started when the following messages display:
	`KfwServices: <timestamp> KFW1002I Starting Service: 'Configuration v1.0'`
	`KfwServices: <timestamp> KFW1003I Started Service: 'Configuration v1.0'`
	`KfwServices: <timestamp> KFW1002I Starting Service: 'Situation v1.0'`
	`KfwServices: <timestamp> KFW1003I Started Service: 'Situation v1.0'`
	`KfwServices: <timestamp> KFW1002I Starting Service: 'Automation v1.0'`
	`KfwServices: <timestamp> KFW1003I Started Service: 'Automation v1.0'`
	`KfwServices: <timestamp> KFW1002I Starting Service: 'CEV v1.0'`
	`KfwServices: <timestamp> KFW1003I Started Service: 'CEV v1.0'`
	`KfwServices: <timestamp> KFW1002I Starting Service: 'Startup Complete v1.0'`
	`KfwServices: <timestamp> KFW1003I Started Service: 'Startup Complete v1.0'`
	`KfwServices: <timestamp> KFW1020I ********* Waiting for requests. Startup complete *********`
	6. Do one of the following:
	• If it is stopped, start the Tivoli Enterprise Portal Server.
	• If it is started, recycle the Tivoli Enterprise Portal Server.

If you are running the Tivoli Enterprise Portal in browser mode and reaching the Tivoli Enterprise Portal Server across network, the network system might not be able to resolve the host name.	Do the following on the computer where the Tivoli Enterprise Portal Server is installed: 1. In Manage Tivoli Enterprise Monitoring Services, right-click the Tivoli Enterprise Portal – Browser service and select Reconfigure from the menu. 2. In the Launch URL field, change host name in http://hostname:1920///cnp/client to the IP address of the Tivoli Enterprise Portal Server to specify the numerical address, for example: http://10.21.2.166:1920///cnp/client. 3. Click **OK**. 4. Start Tivoli Enterprise Portal browser mode using the IP address instead of the host name. 5. If you are still unable to connect, contact IBM Software Support.

Cannot launch the Tivoli Enterprise Portal on an XP computer after installation with the message KFWITM215E

The message `KFWITM215E: Unable to process logon request occurs`. A firewall setting on the client computer prevents the Tivoli Enterprise Portal client from connecting to the Tivoli Enterprise Monitoring Server. Set the IBM JVM (Java launcher) as a trusted program to allow the Tivoli Enterprise Portal client to connect to the Tivoli Enterprise Monitoring Server. You might need to include the IBM Java program in the programs section of your firewall software and include the IP addresses of other Tivoli Monitoring Services components in the access control for the firewall.

Tivoli Enterprise Portal Server is initializing and is not ready for communications

If you attempt to start Tivoli Enterprise Portal just after starting the Tivoli Enterprise Portal Server, the Tivoli Enterprise Portal Server is not ready for requests from the client until initialization and kfwservices.exe, is fully started. The Tivoli Enterprise Portal Server is not ready for requests from the client until its process, `kfwservices.exe` is fully started. Keep the Logon window open and click **OK** after waiting a moment or two.

Tivoli Enterprise Portal Server lost contact with the Tivoli Enterprise Monitoring Server and is attempting to reconnect

This message displays when the Tivoli Enterprise Portal Server lost its connection to the Tivoli Enterprise Monitoring Server, usually because the Tivoli Enterprise Monitoring Server stopped or is recycling. See also KFW_CMW_RECYCLE_DELAY.

Heartbeat issues when running IBM Tivoli Monitoring v6.x on a Linux guest using VMWare

When the Linux operating system is run as a guest using VMWare, it is possible for the clock of the Linux guest to run either faster or slower than real world time. If any IBM Tivoli Monitoring v6.x products are installed on Linux guests whose clocks are not running correctly, the result can be erratic system behavior. For example, if the Monitoring Agent for Linux OS is installed on a Linux operating system guest whose clock is running too slow, heartbeats from the agent are not produced on time. This results in the agent continuously going OFFLINE and ONLINE at the Tivoli Enterprise Monitoring Server, as the heartbeats arrive after the time interval has expired.

VMWare is aware of this issue, and has written several articles that address this problem. The following articles were current at the time this guide was published:

- "Clock in a Linux Guest Runs More Slowly or Quickly Than Real Time," http://kb.vmware.com/selfservice/microsites/search.do?language=en_US&cmd=displayKC&externalID=1420
- VMWARE WHITE PAPER - "Timekeeping in VMware Virtual Machines," http://www.vmware.com/pdf/vmware_timekeeping.pdf

For the most up-to-date information on this issue, please consult the VMWare website (www.vmware.com).

How To Tell If You Have This Problem:

A simple way for determining whether or not your Linux guest has a clock problem is to benchmark it against a real world clock. Here is an example of a procedure that you can use:

1. From a Linux shell prompt, type ″date″ to get the current system date and time. While you are pressing **Enter**, look at a ″real″ clock (wall clock, watch, etc...) to get the real world time in minutes and seconds. Record the time from both your Linux guest and the ″real″ clock.

   ```
   Example:  Real Clock = 10:30:00, Linux Clock = 10:20:35
   ```

2. After 10 real time minutes have expired, type the ″date″ command again (you should type the ″date″ command ahead of time, so you only have to press **Enter** when 10 minutes have elapsed). Record the new times from both your Linux guest and ″real″ clock.

   ```
   Example:  Real Clock = 10:40:00, Linux Clock = 10:26:35
   ```

3. Compute the elapsed time for both your Linux guest and ″real″ clock. If the elapsed times are not the same, your Linux guest has a clock problem.

   Since we waited exactly 10 minutes using the ″real″ clock, we would expect that the elapsed time for the Linux clock would also be 10 minutes. Using the above figures, we can see that the elapsed time for the Linux guest is 6 minutes (10:26:35 - 10:20:35). Since this is less than the real world time, this means that the Linux guest clock is running slow. This causes the IBM Tivoli Monitoring product to behave erratically if the clock is not fixed.

Tivoli Enterprise Portal Server is unavailable

When a message indicates the server is unavailable, suspend further interactions until a message indicates the server is available unless you decide to end the current Tivoli Enterprise Portal session. When the Tivoli Enterprise Portal Server is available again, your client session is automatically reconnected and you can resume normal interactions. If the server is available and the client has not reconnected after three to five minutes, exit the browser, restart the browser, and restart a Tivoli Enterprise Portal client session.

Tivoli Enterprise Portal Server is not reconnecting

If the Tivoli Enterprise Portal Server does not reconnect, recycle the Tivoli Enterprise Monitoring Server and restart the Tivoli Enterprise Portal Server.

Cannot reconnect to the Tivoli Enterprise Monitoring Server

This message displays after the Tivoli Enterprise Monitoring Server goes down and attempts to reconnect. The Tivoli Enterprise Portal client attempts to log on once again to the Tivoli Enterprise Portal Server session. After a successful logon, the Tivoli Enterprise Portal client compares the Tivoli Enterprise Portal user authorities that were in effect when the original logon occurred with the current Tivoli Enterprise Portal user authorities. If any permission is different, you must restart the client session to ensure all components are synchronized with your user permissions. Changes to user permissions include navigator view assignment differences since the last logon.

If you want to apply new permissions for other users immediately, make all necessary changes and recycle the Tivoli Enterprise Monitoring Server. When the Tivoli Enterprise Monitoring Server recycle is complete, each user is reconnected

and their user ID validated. If there were changes to their profiles, users must restart the Tivoli Enterprise Portal client session. The Tivoli Enterprise Portal client session doe snot to be restarted if no changes were made to their profiles.

Tivoli Enterprise Portal Server cannot connect to the Tivoli Enterprise Monitoring Server private interface

If the Tivoli Enterprise Monitoring Server is installed on an AIX server with a public and a private interface, the Tivoli Enterprise Portal Server cannot connect to the Tivoli Enterprise Monitoring Server. There are two environment variables you can set to control which interfaces to publish. For IPV4 use KDEB_INTERFACELIST, for IPV6 use KDEB_INTERFACELIST_IPV6. In either address family, you can set those variables to set, restrict, or add to the interfaces in use.

Table 17. Control interface publishing

Interface control	**Environment variable**
To set specific interfaces for consideration:	`KDEB_INTERFACELIST=ip4addr-1 ... ip4addr-n` `KDEB_INTERFACELIST_IPV6=ip6addr-1 ... ip6addr-n`
To remove interfaces from consideration:	`KDEB_INTERFACELIST...=-ip4addr-1 ... -ip4addr-n` `KDEB_INTERFACELIST_IPV6=ip6addr-1 ... ip6addr-n`
To add interfaces for consideration:	`KDEB_INTERFACELIST=+ ip4addr-1 ... ip4addr-n` `KDEB_INTERFACELIST_IPV6=+ ip6addr-1 ...ip6addr-n`

where:

ip4addr
Specifies either a symbolic network name, or a raw form dotted decimal network address.

ip6addr
Specifies either a symbolic network name, or a raw form colon-separated hex digit network address.

Note: The plus sign must stand alone.

Chapter 5. Tivoli Enterprise Portal troubleshooting

This chapter describes problem you might experience with the Tivoli Enterprise Portal.

Cannot launch the Tivoli Enterprise Portal help

The Tivoli Enterprise Portal help might not display for the following reasons:

Popup blocker
If the browser toolbar has a popup blocker running, the help does not open whether you select **Contents** > **Index** from the Tivoli Enterprise Portal Help menu or click **Help** in a window. Turn off the popup blocker.

Internet Explorer shortcut keys the same for Tivoli Enterprise Portal
Some Tivoli Enterprise Portal shortcut keys are also used by Internet Explorer. If you are using the browser client and press F1 to open the Tivoli Enterprise Portal help, help for Internet Explorer displays instead. Select Contents and Index from the Tivoli Enterprise Portal Help menu.

JavaScript™ not enabled in Microsoft Internet Explorer
JavaScript might not be enabled in Microsoft Internet Explorer. See the Microsoft Knowledge Base Article 236846 for troubleshooting information.

http://support.microsoft.com/default.aspx?scid=kb;en-us;236846

Help index and search text entry fields are disabled

For some reason, your browser is unable to load the Java applets necessary to enable the Index and Search fields, and is rendering the help in Pure HTML. If you view Tivoli Enterprise Portal help with Internet Explorer use the following steps to resolve this problem:

1. From the Internet Explorer browser toolbar go to **Tools** > **Internet Options** > **Advanced** > **Java (IBM)**.
2. Clear the **Use Java version 1.4.2 for <applet> (requires restart)** check box.

If the help index and search text entry fields are still disabled after clearing the **Use Java version 1.4.2 for <applet> (requires restart)** check box, see "On Linux, IBM Tivoli Enterprise Monitoring Agent topics do not display in the Help Contents or Index tabs" on page 72.

Java exception logging onto the Tivoli Enterprise Portal from a browser

If you encounter an exception that has the following text:

```
"java.lang.UnsatisfiedLinkError: com/webrenderer/server/
NativeMozillaLibrary.setMozPath"
```

delete the WebRenderer directory under the home path. For Linux systems, this path is $HOME/.webrendererswing, and for Windows systems, this path is %HOMEPATH%/.webrendererswing.

On Linux, IBM Tivoli Enterprise Monitoring Agent topics do not display in the Help Contents or Index tabs

You can see the Tivoli Enterprise Portal help topics in the Contents tab, but none for your installed monitoring agents. Change your default browser to Internet Explorer or complete the following steps:

1. If the help is open, close the browser window.
2. On the computer where the Tivoli Enterprise Portal Server is installed, locate the contents.htm file:

   Windows:
   <*install_dir*>\cnb\classes\candle\fw\resources\help

   UNIX-based systems:
   Linux: <*install_dir*>/cnb/classes/candle/fw/resources/help
3. Rename contents.htm to contents.bak.
4. Rename contents_dhtml.htm to contents.htm.

Translated files not updated with installation

When installing applications based on a IBM Tivoli Monitoring v6.1 installation program on top of a IBM Tivoli Monitoring v6.2 installation, some translated files might be overwritten. In these cases, the Language pack might have to be reinstalled in order to update the translated files.

Tivoli Enterprise Portal Navigator items are listed in an unexpected order

When expanding items in the Tivoli Enterprise Portal Navigator, parent items might list child items in an unexpected order. Navigator items are ordered internally on the Tivoli Enterprise Portal Server and therefore might not reflect a logical ordering in any particular language. Use the **More...** indicator at the end of the branch of child items to append them until you locate a the item you need.

HEAPDUMPs and JAVACore files are placed on the desktops when running Tivoli Enterprise Portal in browser mode

The Tivoli Enterprise Portal client uses the IBM Java Plug-in, which is automatically installed on your computer with the Tivoli Enterprise Portal. Adjust the IBM Java Plug-in properties if performance is slow or your workstation receives HEAPDUMPs and JAVACore files, an out-of-memory condition, when you are logged on. Make the following adjustments to correct this problem:

- Increase the Java heap size settings. Set the minimum heap size to 128 MB. Set the maximum heap size to 256 MB. If you continue to experience problems, increase the maximum setting in increments of 64 MB until the symptoms disappear.
- When memory requests by the Tivoli Enterprise Portal cannot be satisfied from Java heap storage, the JVM performs garbage collection to reclaim free memory. If the Java heap size settings are too small, the amount of time it takes to perform garbage collection becomes excessive, resulting in high CPU utilization and poor response time. In some cases, Java HEAPDUMPS and JAVACore files are placed on user desktops, indicating an out-of-memory condition. Increasing the Java heap size parameters over the default values helps you avoid these problems.

- If you observe symptoms of heap memory exhaustion after changing the heap size settings to the suggested values, increase the maximum setting in increments of 64 MB until the symptoms disappear.
- Make sure the client workstation has enough memory to handle the maximum heap size. To determine if the client workstation has sufficient memory, observe the available physical memory (as shown on the Windows Task Manager Performance tab) when the workstation is not running the Tivoli Enterprise Portal client, but is running any other applications that need to run concurrently with the portal client. Verify that the client workstation has enough available physical memory to hold the entire maximum Java heap size for the Tivoli Enterprise Portal plus another 150 MB. The additional 150 MB provides an allowance for non-Java heap storage for the Tivoli Enterprise Portal and extra available memory for use by the operating system.
- Set the Java Plug-in cache to an unlimited size to avoid performance problems due to insufficient cache space for Tivoli Enterprise Portal JAR files.
- If you have just upgraded to a new release or fix pack, clear the plug-in cache to remove old versions of the Tivoli Enterprise Portal JAR files.

Complete the following steps to adjust the Java Plug-in settings:

1. Open the Windows Control Panel.
2. Double-click **IBM Control Panel for Java(TM)** to display the Java(TM) Control Panel.
3. From the **Java(TM)** tab:
   a. Click **View**.
   b. Double-click on the **Java Runtime Parameters** field and enter: `-Xms128m -Xmx256m` .
4. Click **OK**.
5. From the **General** tab complete the following steps to clear the browser cache:
   a. Click **Delete Files...**
   b. Check the box labeled **Downloaded Applets**.
   c. Click **OK**.
6. Click **OK** in the Java(TM) Control Panel.

Java errors occur with the IBM v1.4.2 JRE

If you experience any problems using the IBM 1.4.2 JRE use the version shipped with IBM Tivoli Monitoring v6.1.

IBM Tivoli Monitoring v6.2 ships with IBM 1.5.0 JRE. Use this version if you have installed IBM Tivoli Monitoring v6.2.

Tivoli Enterprise Portal has high memory usage and poor response time

The amount of Java memory used by the Tivoli Enterprise Portal increases with the size of the monitored environment. If the maximum Java heap size setting is too low, the amount of time spent by the JVM performing garbage collection can become excessive, resulting in high CPU utilization and poor response time. Verbose garbage collection (GC) data can be used to determine if excessive garbage collection occurs. If the percentage of time spent performing garbage collection is greater than 5%, increase the maximum Java heap size (the -Xmx parameter) to provide more memory and reduce garbage collection activity. For more information

about collecting verbose GC data and Java heap tuning parameter changes, refer to the IBM Developer Kit and Runtime Environment, Java 2 Technology Edition, Version 1.4.2 Diagnostics Guide (SC34-6358-01), which is available from http://www.ibm.com/developerworks/java/jdk/diagnosis/. Use the following steps to increase the maximum Java heap size.

Tivoli Enterprise Portal browser client

Edit the Java heap parameters using the Java Plug-in Control Panel. Before you change the values for the Java Plug-in, consider that any changes affect all Java applications that use the Java Plug-in. See "Preparing your Tivoli Enterprise Portal environment" in the *IBM Tivoli Monitoring Administrator's Guide* for more information.

1. Open the Windows Control Panel.
2. Double-click Java Plug-in for IBM Java V1.4.2 (or right-click and select Open). If you have multiple Java Plug-ins, check that you have the properties for the right plug-in opened: The About tab shows V1.4.2, and the Cache or Certificates tab shows IBM in the path or in the signed certificate.
3. In the Advanced tab, select the IBM JRE 1.4.2 from the Java Runtime Environment list.
4. In the Java Runtime Parameters field, enter -Xms128m -Xmx256m.
5. Click Apply.

Tivoli Enterprise Portal desktop client

Edit the `cnp.bat` file in `install_dir\CNP` to change the Java heap parameters in the set command to -Xms128m -Xmx256m..

Tivoli Enterprise Portal has high memory usage

The amount of Java memory used by the Tivoli Enterprise Portal depends on the size of the monitored environment. The largest component of the memory usage is for the Java heap, which contains both short-term and long-term data. When a memory request cannot be satisfied from free Java heap storage, ″garbage collection″ is performed to reclaim free memory. There are many Java heap tuning parameters for IBM Java run-time environments that can be used to influence garbage collection and memory management. Notable among these are the minimum free percentage (-Xminf) and maximum free percentage (-Xmaxf) parameters. IBM Java documentation provides the following descriptions:

-Xminf<number>

A floating point number, 0 through 1, that specifies the minimum free heap size percentage. The heap grows if the free space is below the specified amount. The default is .3 (that is 30%).

-Xmaxf<number>

A floating point number between 0 and 1, which specifies the maximum percentage of free space in the heap. The default is 0.6, or 60%. When this value is set to 0, heap contraction is a constant activity. With a value of 1, the heap never contracts.

You can lower the amount of free space maintained in the Java heap at the expense of higher CPU utilization and longer response time by setting the minimum free and maximum free percentages to lower values.

Default values:

-Xminf0.30 –Xmaxf0.60

Consider the following values:

-Xminf0.15 –Xmaxf0.30

The IBM Java documentation warns that setting these values too low can cause poor Java performance. For more information on Java heap tuning parameters, refer to the IBM Developer Kit and Runtime Environment, Java 2 Technology Edition, Version 1.4.2 Diagnostics Guide (SC34-6358-01), which is available from http://www.ibm.com/developerworks/java/jdk/diagnosis/.

Data is not returned to the Tivoli Enterprise Portal client

Do the following to ensure that data can return to the Tivoli Enterprise Portal client:

- Ensure that the monitoring agent is online.
- Verify that all the application-related files were installed with the Tivoli Enterprise Portal Server.
- Check the kfwras1.log for errors.
- Set the following trace option in the KFWENV file:

  `(UNIT:ctsql INPUT)`

DirectDraw thread loops infinitely causing poor Tivoli Enterprise Portal performance

Java uses DirectDraw by default but VMWare does not support DirectDraw. Perform the following steps for both desktop and browser clients from Manage Tivoli Enterprise Monitoring Services to set Java Runtime not to use DirectDraw for graphic rendering:

1. Right-click **Tivoli Enterprise Portal**.
2. Select **Advanced > Edit Variables . . .**
3. Double-click the line with `sun.java2d.noddraw` to open the **Edit Tivoli Enterprise Portal Parm** window.
4. Ensure the value is true.
5. Click the **In Use** box so to place a check-mark in the box.
6. Click **OK** to close the window.
7. Click **OK** to close the configuration window.

Workflow Editor is disabled and the following tools do not display: Event Console, Graphic View, Edit Navigator View (Navigator view toolbar)

If you did not enable Manage Tivoli Enterprise Monitoring Services during installation, the Workflow Editor is disabled and the following tools do not display:

- Event Console
- Graphic View
- Edit Navigator View (Navigator view toolbar)

1. On the computer where the Tivoli Enterprise Portal Server is installed, select **Start** > **Programs** > **Tivoli Monitoring Services** > **Manage Tivoli Enterprise Monitoring Services.**

2. Right-click the Tivoli Enterprise Portal Server service, point to Licensing and select Tivoli Enterprise Portal Server from the menu.
3. In the Tivoli Enterprise Portal Service License window, enter the new license key if one was issued.
4. Check **Enable Tivoli Enterprise Monitoring Server**.
5. Click **OK**.

   When you click **OK**, the server stops and a message in Tivoli Enterprise Portal says the server is unavailable. If you do not close the client work session, after the server has been started again (next step), another message says your Tivoli Enterprise Portal permissions have changed and prompts you to restart.
6. Restart the Tivoli Enterprise Portal Server and, after startup is complete, restart the Tivoli Enterprise Portal client.

Situations are not firing

Do the following to determine why situations are not firing in the Tivoli Enterprise Portal:

- Confirm the situation is firing in the event console.
- Ensure that the situation was distributed.
- Verify whether the situation is associated with a node in the Tivoli Enterprise Portal Navigator.
- Ensure that the situation condition is true.
- Check the operations log of the agent.

Historical UADVISOR situations are started on the agent if historical collection is configured to collect data

Anytime you configure an IBM Tivoli Monitoring historical collection for any agent, UA or otherwise, the name of the history situation is always called UADVISOR_xxxxx. If you see these UADVISOR_xxxxx entries in the list of defined situations, even though they were never explicitly defined, these history situations were automatically defined by an IBM Tivoli Monitoring component.

At the bottom of each view, you see a historical workspace KFWITM217E error

At the bottom of each view, you see the following historical workspace KFWITM217E error: Request failed during execution, and a red icon.

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. Views containing multi-row attributes show this message if no row data are collected.

Installation of situation data fails due to I/O on VSAM data sets

After installation of application support, product-provided situations do not appear in the Tivoli Enterprise Portal Situation editor or do not auto start. This problem occurs only with a z/OS hub monitoring server.

Explanation: The definitions of product-provided situations are installed on the hub Tivoli Enterprise Monitoring Server when application support for a product is

installed. If the VSAM data sets in which the data is stored have filled up so that the data cannot be added, situations definitions may not be installed or the definitions may be incomplete.

If application support has been installed, check the `NonResSeedk`*`pp`*`.log` files in install_dir\cnps\logs for errors (where *pp* is the two-letter product code of a monitoring product for which you installed support). Any `SQL1_OpenRequest status=81` errors may indicate that you have a VSAM I/O error.

Workaround: If you see this error, check data sets whose names end in RKDS* to determine if they are out of space or have run out of extents. For example, *&rhilev.&rte.&vsamfsv.RKSSSITF*, where *&rhilev* is the VSAM runtime high-level qualifier, *&rte* is the RTE name, and *&vsamvsf* is the monitoring server EIB VSAM low-level qualifier." Refer to the TEMS started task to see a complete list of VSAM EIB files.

If the data sets are out of space:

1. Use IDCAMS to copy the data to a flat file.
2. Delete the existing file.
3. Modify the ICAT *PP*#1*xxxx* job to increase the size (where *PP* is the two-letter product code for the product [**DS** for a standalone Tivoli Enterprise Monitoring Server] and *xxxx* is the RTE JCL suffix) as follows:
   a. Invoke the Configuration Tool by executing this TSO command:
      `EX '&shilev.INSTLIB'`

      where *&shilev* is the installation high-level qualifier.
   b. On the Configuration Tool MAIN MENU, enter **3 (Configure Products)** and select the product you are want to configure (ITM Tivoli Monitoring Services or an OMEGAMON XE monitoring agent) on the PRODUCT SELECTION MENU.
   c. On the RUNTIME ENVIRONMENTS (RTES) menu, type **B** for (Build libraries) next to the runtime environment in which the monitoring server is configured, and press **Enter**. The PP#1xxxx job that allocates the runtime libraries is displayed.
   d. Edit the `CYL()` parameter in the job to increase the VSAM allocation to whatever value your DASD can accommodate
4. Submit the PP#1xxxx job.
5. Use IDCAMS to copy data from the flat file to the new VSAM.
6. Reinstall the application support for the product or products whose situations are missing or not starting correctly.

For instructions on installing application support for a monitoring agent installed on z/OS, refer to the configuration guide for your monitoring agent.

For instructions on installing application support for monitoring agents installed on a distributed system (Windows, UNIX, Linux) see the *IBM Tivoli Monitoring: Installation and Setup Guide*.

kshsoap client fails because of missing libraries on UNIX-based systems

On UNIX-based systems, the CandleSoapClient shell script calls kshsoap binary from inside, while sourcing the environment. You don not need to run the kshsoap binary, as required on a Windows platform.

Category and Message field of the universal message does not accept DBCS

To record a DBCS IBM Tivoli Monitoring V6.1 universal message when a situation is true, following these steps on Tivoli Enterprise Portal client:

1. Open the situation editor.
2. Select a situation.
3. Select the **Action** tab.
4. Check **Universal Message** button.
5. Move the cursor to **Message** or **Category** text field.
6. Enable Input Method (IM) for DBCS.
7. Type a key to input DBCS.

However, at step 7, nothing is set into the text field because the text field does not accept double byte characters (DBCS). Disable the Input Method and input only single byte characters (SBCS).

An error occurs when remotely removing an instance on Windows

The following log shows an error occurs when remotely removing an instance on Windows.

```
(4300DFC2.0000-828:kbbssge.c,52,"BSS1_GetEnv") KBB_RAS1="ERROR ^>
C:\IBM\ITM\tmaitm6\logs\KNTRAS1.LOG"
(4300DFC2.0001-828:kbbssge.c,52,"BSS1_GetEnv") CANDLE_HOME="C:\IBM\ITM"
(4300DFCE.0000-828:kdytasks.cpp,1063,
"runCommand") Bad return code (3221225477) from command
"C:\IBM\ITM\TMAITM6\kdy_xa.exe -r DB2:FROBERTS:UD
-pc ud" (4300DFCE.0001-828:kdytasks.cpp,1066,"runCommand")
STDOUT [0 characters] is:  (4300DFCE.0002-828:kdytasks.cpp,1069,
"runCommand") STDERR [76 characters] is: Error line(391): Unable to delete file:
C:\IBM\ITM\tmaitm6\KUDCMA_DB2.exe
(4300DFCE.0003-828:kdytasks.cpp,3291,"setConfig") KDY1008E Received bad return code
[3221225477] from two-way translator
command [C:\IBM\ITM\TMAITM6\kdy_xa.exe -r DB2:FROBERTS:UD -pc ud]
(4300E020.0000-864:knt10agt.cpp,243,"getBinaryPath")
Error retrieving binary path for process ID 8.
(4300E021.0000-864:knt10agt.cpp,243,"getBinaryPath")
Error retrieving binary path for process ID 8
```

This error can occur when the Tivoli Enterprise Monitoring Server is restarted and the agent displays offline even though its running because the agent did not register a heartbeat yet.

Agents display offline in the Tivoli Enterprise Portal but still fire situations and the agent logs are report that they are running

This error can occur if the agent names in the group identified contained embedded spaces. Agent names cannot contain embedded spaces. Edit the agent names to remove the spaces. The CTIRA_HOSTNAME environment variable on the agents must include a specific definition for correct agent host names.

The Tivoli Enterprise Portal displays erratic sorting behavior when removing more than one managed system simultaneously

The Tivoli Enterprise Portal display erratic sorting behavior when you remove multiple managed systems at the same time after clicking **Remove Offline Systems** menu item from the Managed System Status view. Allow the display to finish updating before attempting another operation.

Multiple events that occur at the same time are loaded too slowly

Manually set the variable KFW_CMW_EVENT_SLEEP in `cq.ini` on Linux or `kfwenv` on Windows to less than 10 seconds:

```
KFW_CMW_EVENT_SLEEP=5
```

Desktop client performs poorly after installing Language Packs for IBM Tivoli Monitoring V6.1

Some configuration settings for the IBM Tivoli Monitoring Warehouse database can cause performance degradation. Perform the following steps from a db2cmd prompt to correct the DB2 settings:

1. Check the Health Monitor configuration:
   ```
   db2 get dbm config | find /I "health"
   ```
2. Turn the Health Monitor off:
   ```
   db2 update dbm config using HEALTH_MON OFF
   ```
3. Determine what databases IBM Tivoli Monitoring connects to:
   ```
   db2 list application
   ```
4. Check system buffer pool settings on the Tivoli Enterprise Portal Server and PROXYWH databases:
   a. `db2 connect to TEPS db2 select * from SYSIBM.SYSBUFFERPOOLS`
   b. `db2 connect reset`
   c. `db2 connect to PROXYWH`
   d. `db2 select * from SYSIBM.SYSBUFFERPOOLS`

   (Must be a value of 250.)
5. Adjust buffer pool settings that are too high:

   Note: You must be connected to that database.
   ```
   db2 alter bufferpool ibmdefaultbp size 250
   ```
6. Disconnect all applications:
   ```
   db2 force application all
   ```
7. Stop DB2:
   ```
   db2stop
   ```
8. Start DB2:

```
db2start
```

9. Recycle Tivoli Enterprise Portal Server service.

Existing OMEGAMON product imagery displays after upgrading to IBM Tivoli Monitoring V6.1

Existing OMEGAMON product imagery displays after upgrading because there it was cached on the client browser. Use the following steps to correct the problem:

1. Close all browser instances.
2. Clear the browser cache.
3. Reload the Tivoli Enterprise Portal browser client.
4. Verify the correct images display.

The Warehouse Proxy Agent started, but does not appear in the Managed System Status list on the Tivoli Enterprise Portal

The database was either not created in UTF-8 or the DB2CODEPAGE was not setup in the environment as required for proper operation. You need to set the DB2CODEPAGE=1208 (no spaces after the 1208) on the system environment After you have done this, shutdown the Warehouse Proxy Agent, drop the UTF8TEST table from the database, and then restart the agent.

Chapter 6. Tivoli Enterprise Portal Server troubleshooting

This chapter describes problems that might occur with the Tivoli Enterprise Portal Server. If you do find the resolution to a problem you experience with the Tivoli Enterprise Portal Server in this chapter, see Chapter 4, "Connectivity troubleshooting," on page 63.

Tivoli Enterprise Portal Server performance is slow

If you want to increase the performance of your portal server and you are not concerned about security, you can disable Secure Socket Layer data encryption on the portal server. If you do not want to use Secure Socket Layer communication between IBM Tivoli Monitoring components and the Tivoli Enterprise Portal Server, use the following steps to disable it:

1. In Manage Tivoli Enterprise Monitoring Services, right-click **Tivoli Enterprise Portal Server**.
2. Click **Advanced > Edit ENV file**.
3. Find the following line:

   ```
   kfw_interface_cnps_ssl=Y
   ```

4. Change the `Y` to `N`.
5. Save the file and exit.
6. Click **Yes** when you are asked if you want to recycle the service.

Cannot create a Tivoli Enterprise Portal Server database

When using DB2 8.1 or 8.2, you must install the correct fix pack versions of DB2 in order to create a Tivoli Enterprise Portal Server database. These fix pack versions are:

- DB2 V8.1 with Fix Pack 10 or higher fix packs
- DB2 V8.2 with Fix Pack 3 or higher fix packs

Also, on AIX systems, a failure occurs when you attempt to install a Tivoli Enterprise Portal Server with a DB2 database. Using the db2 installation User ID (default is db2inst1), do the following:

1. Stop the DB2 server if not already stopped using the following command:

   ```
   cd /db2inst1/sqllib/adm
   db2stop
   ```

2. Issue the following configuration changes:

   ```
   export EXTSHM=ON
   db2set DB2ENVLIST=EXTSHM
   db2set -all
   ```

3. Using your preferred editor add the following lines to the /db2inst1/sqllib/db2profile file:

   ```
   EXTSHM=ON
   export EXTSHM
   ```

4. Restart the DB2 server using the following command:

   ```
   cd /db2inst1/sqllib/adm
   db2start
   ```

5. Restart the Tivoli Enterprise Portal Server using the following command:

```
cd /opt/IBM/ITM/bin
./itmcmd agent start cq
```

You receive a KFW error when a query is sent to more than 200 managed systems

You receive the following error when a query is sent to more than 200 managed systems:

```
KFWITM217E Request error: Request to xxx nodes exceeds the limit of 200.
Please specify a smaller distribution or increase the maximum.
```

There is a default limit of 200 nodes for any single query for a workspace view. If the following conditions exist in the query for a workspace view, you must increase the **KFW_REPORT_NODE_LIMIT** environment variable for the Tivoli Enterprise Portal server environment variable as described below:

- The query is assigned to a managed system list that contains more than 200 managed systems.

  OR

- More than 200 managed systems are explicitly assigned to a query in any workspace view.

Under these conditions, you must increase the following Tivoli Enterprise Portal server environment variable.

```
KFW_REPORT_NODE_LIMIT=xxx
```

where *xxx* is an integer that is equal to or greater than one of the following:

- The number of managed systems defined in a managed system list.

  OR

- Explicitly assigned to a query over 200 in a Tivoli Enterprise Portal workspace view.

You must add the **KFW_REPORT_NODE_LIMIT** environment variable or remove the comment marker (#) in the following Tivoli Enterprise Portal Server environment files, and restart the portal server.

- Windows systems: `\ibm\itm\cnps\kfwenv`
- Linux or AIX systems: `/opt/IBM/config/cq.ini`

After you change the **KFW_REPORT_NODE_LIMIT** variable, you might receive the following error:

```
KFWITM217E Request error: SQL1_CreateAccessPlan failed, rc=1.
```

Typically this problem is caused when too many explicitly defined managed systems are assigned to a query for a workspace view. The best practice for resolving this problem is as follows:

1. Create a managed system list that specifies the explicitly defined managed systems.
2. Remove the explicit assignments from the query.
3. Assign the managed system list to the query.

Alternatively, you can reduce the number of managed systems that you explicitly define in the query.

Non-hub situations are not associated at the Tivoli Enterprise Portal Server level

Only pure hub situations should be associated to the Tivoli Enterprise Portal Server. However, if you want non-hub situations to be associated at the Tivoli Enterprise Portal Server level, set the Tivoli Enterprise Portal Server environment variable: KFW_CMW_SPECIAL_HUB_ENTERPRISE=N.

When non-hub situations are associated at the Tivoli Enterprise Portal Server, they turn TRUE, meaning they are visible in the situation event console. Through the situation editor, if you assign all the agents and managed systems lists from a situation, that situation event continues to appear in the situation event console.

Starting and stopping the Eclipse Help Server

The Tivoli Enterprise Portal Server depends on the Eclipse Help Server to display standalone help. The Eclipse Help Server is treated in the same way as Tivoli Enterprise Portal Server - as a server component (as opposed to IBM Tivoli Monitoring v6.1, where the Eclipse Help Server was treated as an agent).

This change necessitates that the Eclipse Help Server is started whenever the Tivoli Enterprise Portal Server is started (Eclipse Help Server start failure does not affect Tivoli Enterprise Portal Server startup). The UNIX command itmcmd agent stop or start all, does not stop or start the Eclipse Help Server now, since it does not also stop or start Tivoli Enterprise Portal Server. On Windows systems, starting or stopping of all components using kinconfg.exe still applies to all components without exceptions. The Eclipse Help Server, by default, cannot be stopped if the Tivoli Enterprise Portal Server is running. To stop the Eclipse Help Server, first stop the Tivoli Enterprise Portal Server. The UNIX command option [-f] itmcmd agent -f stop kf, allows you to stop the Eclipse Help Server unconditionally. On Windows systems, reconfiguration restarts all components. To reconfigure the Eclipse Help Server while the Tivoli Enterprise Portal Server is running, restart the Tivoli Enterprise Portal Server along with the Eclipse Help Server.

Non-root stopping or starting agents causes problems

You might experience issues while starting or stopping agents on servers, when using a non-root user ID. The following message might be received:

`KCIIN1191E Cannot execute` *`product_code`* `stop script.`

To avoid this situation, use the root account or an account with granted required permissions (itmuser group).

Root password is not accepted during non-root Tivoli Enterprise Portal Server configuration

While configuring the Tivoli Enterprise Portal Server, when using non-root user, the provided root password is not validated correctly. You should use root account or an account with granted required permissions (itmuser group).

Corba user exception is included in the Tivoli Enterprise Portal Server log when creating situations

When a user creates a new situation, the situation name must be unique. To verify that the new name is unique, the software attempts to access a situation by the new name. If the situation is found, then the name is already used and the user must select a new name. If the request fails, then the name is not already used. The failure to find the situation name is reflected in the log as the CORBA exception. The CORBA user exception indicates that the name is unique.

Chapter 7. Tivoli Enterprise Monitoring Server troubleshooting

This section describes problems that might occur with the Tivoli Enterprise Monitoring Server and provides resolutions to recover from those problems. It includes the following sections:

- "Troubleshooting Tivoli Enterprise Monitoring Server problems on distributed systems" on page 85.
- "Troubleshooting Tivoli Enterprise Monitoring Server problems on z/OS systems" on page 91.

Troubleshooting Tivoli Enterprise Monitoring Server problems on distributed systems

The problems described in this section might occur on distributed systems. For information about configuring the Tivoli Enterprise Monitoring Server, refer to the *IBM Tivoli Monitoring Installation and Setup Guide* .

Tivoli Enterprise Monitoring Server application support will complete all seeding functions but may crash as the program is exiting

The Tivoli Enterprise Monitoring Server seeding program that adds Tivoli Enterprise Monitoring Server application support completes all seeding functions, but may crash as the program is exiting. This crash has only been observed rarely during product testing. The IBM Tivoli Monitoring configuration tool checks the output produced by the seeding functions, and it reports that the Tivoli Enterprise Monitoring Server application support was added successfully. Since all seeding functions were completed, the Tivoli Enterprise Monitoring Server tables with application support are correct and not corrupted.

A core or dump file might be created during the program crash. Creation of a core or dump file usually depends on if the system has been configured to save crash information. However, even if the system is configured to save crash data, this particular crash might not produce a core or dump file.

The Tivoli Enterprise Monitoring Server seeding output files contains information about the crash. An operating system message indicates the condition that caused the crash. A sample crash message would be:

```
 signal 11(SIG1_SIGSEGV=29) 0B0000000000000000100000000000000F84CD256887CAE56E8F
4005700000000048010000EE5DB656B88B9655A4F700572200000022000000000000000D8F900572C
F800578C81C056ACEF0057C04DD256484DD2563EB4B656C04DD2560000000000F5005701
0000000000000002000000002000000879D8B558C81C056A8EF0057
```

The expected seeding completion messages will follow the crash message. The normal seeding messages are checked by the IBM Tivoli Monitoring configuration tool for successful completion of all seeding functions. The crash message always appears in the Tivoli Enterprise Monitoring Server seeding output even if a core or dump file is not produced.

Tivoli Enterprise Monitoring Server seeding output files are stored in different files on UNIX and Windows systems.

UNIX examples:

```
$ITM_HOME/logs/Node_ci_query_Process_ID.log
    $ITM_HOME/logs/Node_ci_query_Process_ID.log
```

where :

Node The system host name

Process_ID
The program process ID

Windows example:

```
C:\IBM\ITM\CNPS\logs\seedApp.log
```

where:

App The 3-character product code, such as knt for the Monitoring Agent for Windows OS

The exact cause of the Tivoli Enterprise Monitoring Server seeding program crash has not been determined. The program has finished all seeding functions and is exiting. The crash has only occurred when only a few seeding changes are required. Seeding functions making many updates to the Tivoli Enterprise Monitoring Server tables have never resulted in this type of program crash. It is very possible that there is something unique about the system where this crash has been seen. The crash has only been observed on one internal test system, which was a Linux for AMD (Opteron) system.

tacmd createSit does not send errors if you mistype the name of an attribute

The tacmd createSit command enables you to create situations without using the Tivoli Enterprise Portal. However, if you mistype the name of an attribute when using this command, you do not receive an error. The situation is created, skipping the attribute that you meant to type in the command. If the created situation had, for example, 6 attributes to monitor, the new created situation has only 5 if you made a mistake in typing 1 of the attribute names in the command.

If you are using the IBM Tivoli Monitoring command line tacmd createSit function for situation creation, you can use the Situation editor in the Tivoli Enterprise Portal to validate your specified attributes.

The system crashes when attempting a bulk import or export command

You might be attempting to import from a 0-byte XML file. Ensure that the XML file has content. Also, this can also occur if the file contents are corrupted (if some expected XML elements are missing).

The Tivoli Enterprise Monitoring Server fails to start, but then does after a reboot

When your Tivoli Enterprise Monitoring Server does not start up properly and you see the following messages in the Tivoli Enterprise Monitoring Server logs, you need to check if anything is using the location server/broker (default is port 1918):

```
(4703AF9A.002B-4:kdcsuse.c,99,"KDCS_UseFamily") status=1c010005,
"cant bind socket", ncs/KDC1_STC_CANT_BIND_SOCK
(4703AF9A.002C-4:kdebpap.c,125,"KDEBP_AssignPort")
```

```
ip.pipe bound to port 14206: base=1918, limit=1918 (4703B06C.0000-
4:kdcc1sr.c,562,"rpc__sar")
Endpoint unresponsive: "ip.pipe:#9.42.22.26:1918", 1C010001:1DE0000F, 210, 5(2),
FFFF/1, 1.1.1.9, d7273a (4703B06F.0000-4:kdcl0cl.c,129,"KDCL0_ClientLookup")
status=1c020006, "location server unavailable", ncs/KDC1_STC_SERVER_UNAVAILABLE
(4703B08F.0000-
4:kdcc1sr.c,562,"rpc__sar") Endpoint unresponsive: "ip:#9.42.22.26:1918",
1C010001:1DE0000F, 32, 5(2), FFFF/2, 1.1.1.9, d7273a
(4703B092.0000-4:kdcl0cl.c,129,"KDCL0_ClientLookup") status=1c020006,
"location server unavailable", ncs/KDC1_STC_SERVER_UNAVAILABLE
```

You can find out what is using that port, stop the process, and then configure your system to use another port. You can also reboot the system to clean up any stale IBM Tivoli Monitoring processes that might be bound to this port.

Remote Tivoli Enterprise Monitoring Server lost connection to the hub Tivoli Enterprise Monitoring Server and all agents display offline

Check the log for error messages in the RAS1 trace log that indicate timestamp problems such as `Ignoring invalid lastTimeStamp`. This error occurs because you synchronized the time on the hub and remote Tivoli Enterprise Monitoring Server with another time server. Restart the Tivoli Enterprise Monitoring Server experiencing the errors because timers and POSIX (timed waits, for example) depend on reliable system time.

After the set timeout, the Tivoli Enterprise Monitoring Server is still pending

When you attempt to stop or start the Tivoli Enterprise Monitoring Server service, after the set timeout, the Tivoli Enterprise Monitoring Server is still pending the start or stop. You will receive the following error:

```
TEMS service is still pending start/stop. Check ITM documentation for more details.
```

The default time for starting and stopping a Tivoli Enterprise Monitoring Server service is ten minutes. In the following two situations, this time can be ten times as long:

1. If you have a large or complicated infrastructure connected to the Tivoli Enterprise Monitoring Server.
2. If you have a remote Tivoli Enterprise Monitoring Server, but the hub Tivoli Enterprise Monitoring Server is offline.

In any other situation, call IBM Software Support.

Providing the wrong path to configuration files during LDAP configuration causes the Tivoli Enterprise Portal login window to hang

During Security and LDAP configuration at Tivoli Enterprise Monitoring Server, if you provide an incorrect path to the key.kdb and key.sth files, the Tivoli Enterprise Portal login window goes into an indefinite loop. This occurs after restarting the Tivoli Enterprise Monitoring Server and launching the Tivoli Enterprise Portal client. Ensure that the provided paths are correct during configuration. The installer does not check if the file exists under the user-provided path.

Crash on Linux remote Tivoli Enterprise Monitoring Server during hub failover to Hot Standby

The monitoring server can use a large number of file descriptors, especially in a large environment. On UNIX and Linux systems, the maximum number of file descriptors available to a process is controlled by user limit parameters. To display the user limits, run the following command:

```
ulimit -a
```

The ″nofiles″ parameter is the number of file descriptors available to a process. For the monitoring server process (kdsmain), the ″nofiles″ parameter should be set larger than the maximum number of agents that will be connecting to the monitoring server. If the monitoring server is unable to get file descriptors when needed, unexpected behavior can occur, including program failures. Consider increasing the value to 1000 file descriptors or more.

There are other user limit parameters that control how much data, stack and memory are available to a process. For large environments, consider increasing these memory-related user limit parameters for the monitoring server (kdsmain) process.

Configuring the user limit parameters usually requires root access, and involves changing system startup files which are operating system specific. Consult the operating system manuals for information on how to configure the user limit parameters.

HUB Tivoli Enterprise Monitoring Server quiesce prevents the display of the data collected by the attached Tivoli Enterprise Monitoring Agents

A HUB Tivoli Enterprise Monitoring Server has been running. A shutdown of the Tivoli Enterprise Monitoring Server and Tivoli Enterprise Monitoring Agents on the remote systems is in process, but the shutdown takes awhile due to abends in the remote Tivoli Enterprise Monitoring Server. About 8 or 9 minutes go by before the HUB Tivoli Enterprise Monitoring Server quiesces. There are a lot of remote request communication messages in the HUB's RKLVLOG prior to the QUIESCE, but no other signs of errors until after the abend. You cannot restart the remote environments following the quiesce, until after the HUB environment is recycled.

The value of the MINIMUM parameter within the KDSSYSIN member of the RKANPARU library might need to be increased if the STGDEBUG(X) or STGDEBUG(Y) parameter is also supplied within KDSSYSIN. If the address space controlled by this KDSSYSIN member enters a ″storage quiesce″ state (indicated by a KLVxxxxx message stating that there is a storage shortage or quiesce in effect), you should increase the value of the MINIMUM parameter and restart the address space.

During installation of a remote Tivoli Enterprise Monitoring Server on a Windows system, the agent support is applied, but fails

In a multiple-level Tivoli Enterprise Monitoring Server environment, the remote Tivoli Enterprise Monitoring Servers obtain their agent support from the hub Tivoli Enterprise Monitoring Server. In order to apply agent support to a remote Tivoli Enterprise Monitoring Server, the hub Tivoli Enterprise Monitoring Server must be running and reachable by the remote Tivoli Enterprise Monitoring Server.

During installation of a remote Tivoli Enterprise Monitoring Server on a Windows system, the agent support is typically applied. This fails if the hub Tivoli Enterprise Monitoring Server is unreachable.

During remote Tivoli Enterprise Monitoring Server installation on the Windows platform, ensure the hub Tivoli Enterprise Monitoring Server is running.

The addSystem command fails with error message KUICCR099E

The KUICCR099E error occurs when at least one incorrect parameter was specified. When adding managed systems with the addSystem command, ensure that you

- Specify the correct product code.
- Specify a correct node that is online. You can run the listsSystems command to verify that the node is online.
- Specify correct properties.

```
tacmd addSystem {-t|--type} TYPE
[{{-n|--node} MANAGED-OS} |
{{-d|--dir|--directory} NODEDIR}}} ]
[{-i|--imagePath} IMAGEPATH]
[{-p|--property|--properties} NAME=VALUE ...]
```

where:

-t | --type
Specifies the type of managed system to add to the monitoring system. You can specify a managed system type name or its associated two-character code. Use viewDepot to display a list of correct managed system types.

-n | --node
Specifies the node to start. A node is identified by the managed operating system that it contains.

MANAGED-OS
Specifies a correct managed operating systems.

-d | --dir | --directory} NODEDIR
Specified the correct name of the directory that contains the node components, including the OS agent. This syntax is only correct when the node is on the local machine.

-i | --imagePath
Specified the correct directory that contains agent install images.

-p | --property | --properties
Specifies one or more NAME=VALUE pairs that identify configuration properties of the new system and their values. Run the describeSystemType command to determine correct values for the properties.

UNIX and Linux Tivoli Enterprise Monitoring Server requires restart if you issue itmcmd server stop/start commands when you are already logged on

When you are logged in but restart the Tivoli Enterprise Monitoring Server using itmcmd server stop or start commands, you receive the message: KUICLR099E: The command did not complete because of a system error. Refer to the log for details and contact the system administrator.

A new login solves the problem and enables the tacmd listsystems command. This behavior is only seen on UNIX and Linux Tivoli Enterprise Monitoring Servers. Windows Tivoli Enterprise Monitoring Servers do not need a new login after a Tivoli Enterprise Monitoring Server restart.

The listSystems command consumes high CPU in enterprise environments

In enterprise environments with many managed systems, high CPU consumption is expected behavior for the listSytems command.

Log indicates Hub Tivoli Enterprise Monitoring Servers are down when they are up

The statusPut process fails periodically, resulting in an incorrect hub status. This condition is harmless and does not cause any operational change by the software. The following is an example of the log:

```
Tue Jun 14 04:27:01 2005 KO41039    Error in request sqlRequest. Status= 1103.
Reason= 1103.
(42AEA2E5.0011-6:ko4sndrq.cpp,855,"IBInterface_sqlRequest") Distributed request
failed
(42AEA2E5.0012-6:ko4state.cpp,3519,"IBInterface_sendInsert") send insert has no
request handle error
(42AEA2E5.0013-6:ko4ibput.cpp,1407,"IBInterface:insertProcessing")
General error <1103>
(42AEA2E5.0014-6:ko4ibput.cpp,1657,"IBInterface::put_sList")
table put error <1103>
(42AEA2E5.0015-6:ko4ibstr.cpp,1139,"IBStream::insertDef") IB Err: 1103
(42AEA2E5.0016-6:ko4crtsq.cpp,5547,"IBInterface_refreshIB") Hub is not there
(42AEA2E5.0017-6:ko4crtsq.cpp,5547,"IBInterface_refreshIB") Hub is not there
(42AEA2E5.0018-6:ko4crtsq.cpp,5547,"IBInterface_refreshIB") Hub is not there
(42AEA2E5.0019-6:ko4crtsq.cpp,5547,"IBInterface_refreshIB") Hub is not there
(42AEA2E5.001A-6:ko4crtsq.cpp,5547,"IBInterface_refreshIB") Hub is not there
Tue Jun 14 04:27:01 2005 KO41034    Monitoring for situation UADVISOR_OMUNX_SP2OS
ended.
(42AEA2E5.001B-6:ko4crtsq.cpp,5547,"IBInterface_refreshIB") Hub is not there
Tue Jun 14 04:27:01 2005 KO41036    Monitoring for situation UADVISOR_OMUNX_SP2OS
started.
(42AEA3C3.0000-6:kdssqrun.c,2995,"Fetch") QueryRowset error. status 302
Tue Jun 14 04:30:43 2005 KO41039    Error in request Notify. Status= 1105.
Reason= 302.
(42AEA3C3.0001-6:ko4async.cpp,4744,"IBInterface::completeRequest") Close failed
request <55BE90>
(42AEA53C.0000-6:ko4ibstr.cpp,1090,"IBStream::insertDef")
Ret code 155 indicates hub connection lost.
  Attempting to switch hubs o
r reconnect.
(42AEA53C.0001-6:kdcgbin.c,118,"KDCG_Bind") Using GLB at ip:#9.48.157.26[1918]
(42AEA53D.0000-6:ko4crtsq.cpp,6456,"IBInterface::restartAllObjects")
No access list records changed
(42AEA53D.0001-6:ko4mxque.cpp,97,"MutexQueue::~MutexQueue") Reply store <FcO798B8>
still associated with request <503D98>: info.re
ply <FC0798B8> info.oType <5546> info.oName <INSERTO4SRV.TNODESTS> info.sitName
<*noname*>
info.reqState <-1> info.physicalIO <1>
info.logIt <0> info.reqGen <412>
Tue Jun 14 04:37:01 2005 KO41034    Monitoring for situation UADVISOR_OMUNX_SP2OS
 ended.
Tue Jun 14 04:37:02 2005 KO41036    Monitoring for situation UADVISOR_OMUNX_SP2OS
started.
(42AEA61B.0000-6:kdssqrun.c,2995,"Fetch") QueryRowset error. status 302
```

```
Tue Jun 14 04:40:43 2005 KO41039    Error in request Notify. Status= 1105.
Reason= 302.
(42AEA61B.0001-6:ko4async.cpp,4744,"IBInterface::completeRequest")
Close failed request <61D5E0>
```

The Platform view in the Manage Tivoli Enterprise Monitoring Services panel shows the Tivoli Enterprise Monitoring Server as running as a 32 bit application, but my agents are shown as running as 64 bit applications

The Tivoli Enterprise Monitoring Server is a 32 bit application that runs on both 32 and 64 bit operating systems.

Tivoli Enterprise Monitoring Server does not release memory after running a large SQL query

Running a query for data beyond a 24-hour period consumes high CPU and memory because the data is not stored on the server and must be retrieved from the endpoints. All users might experience low system performance while a large amount of data is retrieved from endpoints.

Tivoli Enterprise Monitoring Server aborts unexpectedly when exiting the telnet session used to start it

A UNIX-based systems Tivoli Enterprise Monitoring Server aborts unexpectedly when exiting the telnet session used to start it, either from the client or the command line. If you start the Tivoli Enterprise Monitoring Server from a Bourne shell, the Tivoli Enterprise Monitoring Server session terminates when you exit the telnet session. Do the following so you can exit the telnet session without shutting down the Tivoli Enterprise Monitoring Server.

1. Enter the Korn shell (ksh).
2. Start Tivoli Enterprise Monitoring Server.

KCIIN0084E Timeout appears while waiting for Tivoli Enterprise Monitoring Server to start on AIX 5.3

After installation the Tivoli Enterprise Monitoring Server and Remote Tivoli Enterprise Monitoring Server performance is very slow.

Confirm that the prerequisite software has been installed. The C libraries are critical for the Tivoli Enterprise Monitoring Server performance at start and stop times and are important for communication between Tivoli Enterprise Monitoring Server and Tivoli Enterprise Portal Server.

The installation should check the prerequisites and show information in one of the logs, such as the candle installation log or the Tivoli Enterprise Monitoring Server log. If one of the prerequisites is missing the installation will not continue automatically.

Troubleshooting Tivoli Enterprise Monitoring Server problems on z/OS systems

This section includes describes problems you might experience with Tivoli Enterprise Monitoring Server on z/OS and provides resolutions. It covers problems that occur during run-time that you can resolve with the Installation and Configuration Assistance Tool (ICAT). For more information about configuring the

Tivoli Enterprise Monitoring Server on z/OS, refer to the *Configuring Tivoli Enterprise Monitoring Server on z/OS* manual.

The Tivoli Enterprise Monitoring Server start task (CANSDSST default) encountered error message 'KLVST044 LOADLIST MEMBER NOT FOUND IN RKANPAR DATASET (KDSLLIST) KppLLIST KLVST001 CANDLE ENGINE INITIALIZATION ERROR(S), ABEND U0012' in the RKLVLOG at startup

The Tivoli Enterprise Monitoring Server start task (CANSDSST default) encountered error message ″KLVST044 LOADLIST MEMBER NOT FOUND IN RKANPAR DATASET (KDSLLIST) KppLLIST KLVST001 CANDLE ENGINE INITIALIZATION ERROR(S), ABEND U0012″ in the RKLVLOG at startup. Ensure the following conditions:

- The pp#2xxxx RTE Load job ran successfully for this RTE:
  1. To perform the RTE Load, place the L option next to the RTE on the KCIPRTE RTE main menu. The Configuration tool generates the pp#2xxxx RTE Load job.
  2. Submit the RTE Load job. The RTE Load job populates the &rhilev.&RTE.RK* runtime libraries by copying required elements from the SMP/E target high-level qualifiers (&thilev.TK*).
- If the RTE Load job was performed, then the job references the &thilev.TK* SMP/E target datasets from where the members are copied. Ensure the datasets are correct SMP/E target datasets where &svhilev.CSI is installed.
- If the RTE Load job does not reference any &thilev.TK* SMP/E target datasets or generates an incomplete RTE Load job, then ensure that the Configuration tool references the correct SMP/E target high-level qualifiers. The Configuration tool only generates appropriate IEBCOPY TK*-->RK* steps for SMP/E target datasets that it can access.

Use the following steps to ensure that the Configuration tool references the correct SMP/E target high-level qualifiers:

1. From the Configuration tool main menu, select **Install products or maintenance** > **Set up product or maintenance environment** >**Specify environment information**.
2. Verify that the values for the high-level qualifiers are correct. If the high level qualifiers values are not the correct, use the following steps to unlock the SMP/E high-level qualifiers:
   a. Run &shilev.INSTLIB.
   b. On the Installation tool main menu, select **Services and utilities** > **Unlock SMP/E high-level qualifiers**.
   c. Specify **Y** on the **Unlock SMP/E high-level qualifiers?** field.
   d. Edit the high-level qualifier modifications on the **Specify installation environment information** panel.
3. Go to the RTE main menu and regenerate the RTE Load job.

Cannot encrypt text. A call to CSNBSYE failed. Cannot encrypt contents of keyfile

On the **Specify configuration values** option on the ″Configure the Tivoli Enterprise Monitoring Server main menu, you can provide the Integrated Cryptographic Service Facility (ICSF)-related values for password encryption.

These values generate the KAES256 step in the Tivoli Enterprise Monitoring Server ″Create runtime members″ job. To create the encryption key file (KAES256) in the &rte.RKANPAR library. If within this step, the error occurs, this message indicates that ICSF is not configured correctly in your system. Consult with your system administrator. Refer to the *Configuring Tivoli Enterprise Monitoring Server on z/OS* manual for more information about configuring a z/OS Tivoli Enterprise Monitoring Server and the security-related information.

The error ″KLVST005 MVS JOBSTEP AUTHORIZATION REQUIRED KLVST001 CANDLE ENGINE INITIALIZATION ERROR(S), ABEND U0012 CSV019I - Required module KLVSTWTO not accessed, it is not APF Authorized (RKANMODL) CSV028I - ABEND 306-0C″ occurs in the z/OS Tivoli Enterprise Monitoring Server RKLVLOG during startup

Ensure that the load libraries, including RKANMOD and RKANMODL are correctly APF-authorized. Additionally, in the Configuration tool **Complete the configuration** step, specify that any runtime libraries concatenated in the STEPLIB DDNAME and in the RKANMODL DDNAME of the Tivoli Enterprise Monitoring Server started task must be APF-authorized.

The error ″KLVSQ000 carved mode in effect for extended storage″ occurred in the RKLVLOG during startup

You can increase the MINIMUM() storage settings in the &rhilev.&rte. RKANPAR(KDSSYNSIN) member if IBM Support personnel instructs you to do so. The default value for the MINIMUM() parameter is MINIMUM(150000,X). Use the following steps to increase this value or any other storage-related parameters:

1. On the **Configure the Tivoli Enterprise Monitoring Server** main menu, select the **Specify configuration values** option.
2. On the next panel, navigate to the **F5=Advanced** key.
3. Do the following on the **Specify Advanced Configuration Values**:
   - Edit the **Minimum extended storage** field to 300000 K.
   - Edit the **Maximum storage request size** fields to 16 (Primary) and 23 (Extended).
4. On the **Configure the Tivoli Enterprise Monitoring Server** main menu, select the **Create runtime members** option to generate the DS#3xxxx Create runtime members job. Submit the job and verify good condition codes.
5. Recycle the Tivoli Enterprise Monitoring Server.

Error message 'KDSMA013 OPEN VTAM for VDM1APPL failed with status 8' occurs in the Tivoli Enterprise Monitoring Server start task (CANSDSST default)

Error message ″KDSMA013 and the task ends in ″ABEND=S000 U0200 REASON=00000000 KDSMA003 Tivoli Enterprise Monitoring Server data collection server ended successfully″. Ensure the following:

1. The KDS_VTAMID= parameter exists in the &rhilev.&rte.RKANPAR(KDSENV) member. If it does not exist, then ensure that the Tivoli Enterprise Monitoring Server is configured correctly. Refer to the *″Configuring Tivoli Enterprise Monitoring Server on z/OS* manual for more information about configuring a z/OS Tivoli Enterprise Monitoring Server.

2. If the KDS_VTAMID= VTAM APPLID exists, ensure that the Tivoli Enterprise Monitoring Server VTAM major node is activated correctly.

For more information, review the **Complete the configuration** option on the **Configure the Tivoli Enterprise Monitoring Server** main menu.

Chapter 8. Monitoring agent troubleshooting

This chapter describes problems you might experiences with the monitoring agent deploy tool and monitoring agents. If you do not find the resolution to a problem you experience with a monitoring agent, refer to the agent-specific user guide listed in"IBM Tivoli Monitoring library" on page 159 section of this book.

Agent upgrade and restart using non-root

The monitoring agent can run using a non-root user ID on UNIX and Linux systems. This can be done by running the **itmcmd agent start** command while logged in as a non-root user, and this can be done remotely by deploying the agent using the **Run As** option on the GUI or using the **_UNIX_STARTUP_.Username** option on the **tacmd addSystem** command line. If the agent is running using a non-root user ID, and then the agent is upgraded, restarted remotely, restarted as a result of a system reboot, or the **itmcmd agent start** is run using the root user ID, then the monitoring agent subsequently runs as the root user. To confirm the user ID that the monitoring agent is using, run the following command:

```
itm_install/bin/cinfo -r
```

If the agent is using root, and that is not the desired user ID, then use the following steps to restart the agent:

1. Log in as root.
2. Run the **itmcmd agent stop** command.
3. Log in (or 'su') to the user ID that you want the agent to run as.
4. Run the **itmcmd agent start** command.

If the agent was running as root because of a system reboot, then edit the startup file using the following steps so that the appropriate user ID is used the next time the system is rebooted:

1. Look at *install_dir*/registry/AutoStart, and get *NUM*.
2. Edit the autostart for your operating system:

   The location of the startup file is platform dependent as follows:

   - AIX: /etc/rc.itm*NUM*
   - HP-UX: /sbin/init.d/ITMAgents*NUM*
   - Linux: /etc/init.d/ITMAgents*NUM*
   - Solaris: /etc/init.d/ITMAgents*NUM*
3. Add entries for your operating system using the following command:

   ```
   /usr/bin/su - instancename
   -c "install_dir/bin/itmcmd agent
   -h install_dir
   -o instancename
   start product_code"
   ```

   Where:

   instancename
   : Name of the instance

   install_dir
   : Name of the directory

product_code
2-character product code for the agent, for example, agent_code for the monitoring agent

Examples:

- For AIX, add entries with the following format:

```
su - USER -c " /opt/IBM/ITM/bin/itmcmd agent
-o INSTANCE start agent_code"
```

Where:

USER Name of the user

INSTANCE
Name of the instance

- For Linux, HP_UX, and Solaris, add entries with the following format:

```
/bin/su - USER -c " /opt/IBM/ITM/bin/itmcmd agent
-o INSTANCE start agent_code >/dev/null 2>&1"
```

Where:

USER Name of the user

INSTANCE
Name of the instance

4. Repeat Steps 1 through 3 for all occurrences of stop.
5. Save the file.

The command tacmd restartAgent fails if the agent is already stopped

If the tacmd restartAgent command is issued against an agent that is stopped, it will generate an error message:

```
# /opt/IBM/ITM/bin/tacmd restartagent -n zpmaix13:KUX -t ul

KUICRA006I: Are you sure you want to restart the UL agent(s) that manage
zpmaix13:KUL?

Enter Y for yes or N for no: Y

KUICRA007I: Restarting UL agent(s).

KUICRA009E: A problem occurred while restarting UL - refer to the following error
returned from the server:

The monitoring server encountered an error while restarting the managed system.

If the error information returned from the server is not sufficient to help you
resolve the error, contact IBM Software Support.

The command /opt/IBM/ITM/bin/CandleAgent  -h /opt/IBM/ITM -c stop ul did not start
or stop agent.
The command returned a return code.

Enable Deployment trace logging on the agent machine. Contact Customer Service
for details on this procedure. Collect the following log files
        On Windows the log kdsmain.msg log is located in the {CANDLEHOME}\CMS
directory and {hostname}_ms_{timestamp}-XX.log files are located in
CANDLEHOME\logs directory.
        On Unix-Based systems the logs {hostname}_{timestamp}.log and
{hostname}_ms_{timestamp}-XX.log is located in the {CANDLEHOME}/logs directory.
On the target Managed System Node machine collect the following log files.
        On Windows the logs kdyproc_ras1_{timestamp}.log and {hostname}_nt_kntcma_
```

```
{timestamp}-XX.log are located in the {CANDLEHOME}\tmaitm6\logs directory.
       On Unix systems the logs kdyproc_ras1_{timestamp}.log and {hostname}_
ux_kuxagent_{timestamp}-XX.log is located in the {CANDLEHOME}/logs directory.
       On Linux systems the logs kdyproc_ras1_{timestamp}.log and {hostname}_
lz_klzagent_{timestamp}-XX.log is located in the {CANDLEHOME}/logs directory.
Refer to IBM Tivoli Monitoring v 6.2 Problem Determination Guide
for more information.
```

The user can verify the agent is stopped by running 'tacmd listSystems':

```
# /opt/IBM/ITM/bin/tacmd listsystems
Managed System Name              Product Code Version     Status
zpmaix13:KUL                     UL           06.20.00.00 N
zpmaix13:08                      08           06.20.00.00 Y
amshp16.tivlab.raleigh.ibm.com:K UX           06.20.00.00 Y
TEMS_zpmaix13                    EM           06.20.00.00 Y
```

To start the agent, user can issue 'tacmd startAgent':

```
/opt/IBM/ITM/bin/tacmd startagent -n zpmaix13:KUX -t ul
```

Using the kinconfig command and remotely starting, stopping or recycling agents fails on Windows 2000 systems

If the endpoint is a Windows 2000 systems, you must reboot the system after the Monitoring Agent for Windows is installed to allow environment variables that have been set by the OS Agent's installation to take effect for other processes to use these variables.

Agent configuration failed on remote deploy while using single quotes for configuration properties

You cannot provide a deployment or configuration property with single quote characters embedded within the properties. For paths with spaces in them, wrap the entire property in single or double quotes. The following examples are valid:

```
DBSETTINGS.SYBASE=/data/sybase
'DBSETTINGS.SYBASE=/data/sybase'
"DBSETTINGS.SYBASE=/data/sybase"
```

Whereas this example is NOT valid:

```
DBSETTINGS.SYBASE='/data/sybase'
```

New attributes missing

When viewing a workspace, not all of the attribute group's attributes are displayed in a table view. To see the new attributes in a table, you must create a new query to retrieve the new attributes, and you must create a new workspace to use the new query.

Agent deploy operations are not completing before the TIMEOUT expires

When running agent deploy operations, TIMEOUTs can occur because of slow network connections or slow hardware. The agent deploy operations can complete if you increase the TIMEOUT value. Some operations can complete even after a timeout is returned.

Table 18. Resolutions for agent deploy operations that TIMEOUT

Problem	Resolution
KDY0014E message	Increase the Tivoli Enterprise Monitoring Server timeout value to 1200 seconds (`TIMEOUT=1200`). The default is 600 seconds. On Windows: *`installation_dir`*`\CMS\KBBENV`. On UNIX-based systems: *`installation_dir\host_name`*`_ms_`*`Tivoli Enterprise Monitoring Server_ID`*`.config`.
KDY1009E KDY1017E KDY1018E KDY1022E KDY1025E KDY1030E KDY1033E	Increase the OS agent timeout to 600 seconds (`TIMEOUT=600`). The default is 300 seconds. On Windows: *`installation_dir`*`\CMS\KNTENV`. On UNIX-based systems: *`installation_dir`*`\ux.ini`. On Linux, set it in *`installation_dir`*`\lz.ini`. The value must be set in seconds:
A system error occurs when running a tacmd command.	Increase value for the TACMD_TIMEOUT environment variable to 60 minutes. On Windows: Enter the following command: `set tacmd timeout=60` **Note:** Be aware that this command does not affect the statement for ″TACMD_TIMEOUT=x″ in the KUIRAS1.log, but it does indeed change the timeout period. You can also change the environment variable in the kui.env file on Windows systems and the tacmd shell script on non-Windows systems. Both of these files can be found in the CANDLEHOME/bin directory.
A failure occurs when deploying an agent from the Tivoli Enterprise Portal.	The Tivoli Enterprise Portal Server times out waiting for deployment action to complete. The default timeout is 600 seconds. You can change the timeout setting to KFW_SQL1_ASYNC_NOTIFY_MAX_WAIT in kfwenv: `KFW_SQL1_ASYNC_NOTIFY_MAX_WAIT=1000`
KUICCN068E error when running tacmd createnode.	Increase the timeout value in seconds by adding ″-o TIMEOUT=3600″ to the createnode command.

Deploy cannot tell if the install failed

When installing an OS Agent on an endpoint that already has an OS Agent, the installation program does not write out a C:\IBM\ITM\InstallITM\Abort IBM Tivoli Monitoring 20070924 1319.log in the createNode specified directory. It writes messages to the existing C:\data\itm61_oqv_ga2_koy\InstallITM\IBM Tivoli Monitoring 20070924 1319.log log file and reports the error in that log file.

After remote deploy failure, cannot find the kuiras1.log file

On Windows systems, the kuiras1.log file is created in the %Candle_Home%\bin directory rather than the correct location %Candle_Home%\logs.

addBundles command times out

When using the addBundles command to add bundles to a depot, the command might time out. The default timeout is 600 seconds (10 minutes). The following message is returned after successful execution:

```
KUICAB022I: The following bundles were successfully added to the
C:\IBM\ITM\CMS\depot\depot
```

If the addBundles command times out, this message is not returned. Set the TIMEOUT environment variable to more than 600 before running the addBundles command. For example:

```
#set TIMEOUT=1800
```

You can also reset the TIMEOUT after the command times out. Then run the addBundles command.

You can also change the LAN linkspeed and duplex setting from auto detect to 100Mbps/Full Duplex. Then re-start the addbundle process.

createNode command fails

Table 19 on page 99 provides information to help you recover when the createNode command fails.

Table 19. createNode command fails

Symptom	Resolution
The createNode command fails on a Windows OS agent from a UNIX or Linux host when using the ″-d″ option and ″\″ as the path separator.	Because tacmd on UNIX and Linux is a wrapper script for the createNode command, the character ″\″ is removed from the command. Specify the path with the ″-d″ option using either ″/″ or ″\\\\″ when you deploy a Windows OS agent from a UNIX/Linux host. The following examples display the correct usage to install the Windows OS agent in the path C:\ITM61\WIN\OSAgent: **Windows** C:/ITM61/Win/OSAgent **UNIX or Linux** c:\\\\ITM61\\\\Win\\\\OSAgent
createNode command fails on Windows system.	On Windows systems, ensure that there are no trisvc* services running. If there are trisvc* services running, stop them and remove them. The trisvc binary is used to run remote executions on Windows. Ordinarily it is automatically removed after an operation, but in rare cases, that removal fails and the existence of the service might cause subsequent operations to fail. Run the installation again, adding `--option JLOG_LEVEL=DEBUG_MAX` to the command string to increase the amount of debugging information in the trace log by a significant amount. After the operation completes, examine the trace log for messages that indicate a reason for the failure. If access to the target computer is available, run the installation again, adding `--option AUTOCLEAN=NO` to the command string. On the remote system, examine the contents of the `~CSRI0` directory in the system temporary directory searching for information that indicates the reason for the failure. When the investigation is complete, all `~CSRI#` directories must be completely removed.

Table 19. createNode command fails (continued)

Symptom	Resolution

createNode command fails with return code: 2.	The createNode command fails and there are errors in the $CANDLEHOME/logs/trace_cn.log file. There might be a corrupt or inconsistent IBM Tivoli Monitoring software depot.
	`The agent installation appears to have failed.`
	`Return code: "2" (0 was expected)`
	Remove all software from depot directory, recreate the depot, and deploy the OS agent again.

createNode on a Windows system fails to connect with the KUICCN035E message.	Determine if Server Message Block (SMB) signing is required on the target system by looking at the following security setting: 1. From a Windows start menu, select **Program Files** > **Control Panel** > **Administrative Tools** > **Local Security Policy Under Local Policies** > **Security Options**. 2. Ensure the following Security Settings are disabled: • Server: Digitally sign communication (always) • Client: Digitally sign communication (always) If the system belongs to a domain and these settings are defined at the domain level, you must change them in the Domain Security Policy. **Note:** Disabling these settings reduces the security of the SMB protocol. See http://support.microsoft.com/?kbid=887429 for more information about SMB signing.

The createnode command fails to connect to a UNIX-based systems target system	If you run the createnode command on a machine with only sshd running, you must configure the sshd to allow password authentication. Do the following steps to enable password authentication:
	1. Edit the /etc/ss/sshd_config file on the target computer.
	2. Locate the following line:
	`PasswordAuthentication no`
	3. Change the no to yes and save the file.
	4. Restart the daemon.
	Note: If you are using private key authentication in your environment, you do not need to set SSH to permit password authentication.
	If the createnode command fails to connect after enabling password authentication, run the following command with each protocol (ssh, rexec, rsh) specified explicitly with the -h parameter to determine which protocol is used for the connection attempt:
	`createnode -h [{ssh|rexec|rsh}://]host[:port] ...`
	Errors are logged in $CANDLEHOME/logs/trace_cn.log.

createnode command does not handle or convert backslashes on Windows systems	Specify the path within double quotes and add a double slash in the path name instead of single back slash.

An agent does not display in the Tivoli Enterprise Portal or in the output from the listSystems command

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

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

An agent name truncation problem can occur when the network domain name is included in the network hostname portion of the agent name. For example, instead of just the hostname myhost1 being used, the resulting hostname might be myhost1.acme.north.prod.com. Inclusion of the network domain name causes the agent name in the example above to expand to SERVER1:myhost1.acme.north.prod.com:KXX. This resulting name is 39 characters long. It is truncated to 32 characters resulting in the name SERVER1:myhost1.acme.north.prod.

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

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

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

Create the names by completing the following steps:

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

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

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

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

1. Change **CTIRA_HOSTNAME** environment variable in the configuration file of the monitoring agent.
   - Find the KAGENT_CODEENV file in the same path mentioned in the preceding row.
   - For z/OS agents, find the **RKANPAR** library.
   - For i5/OS agents, find the **QAUTOTMP/KMSPARM** library in member **KBBENV**.
2. If you cannot find the **CTIRA_HOSTNAME** environment variable, you must add it to the configuration file of the monitoring agent:
   - **On Windows:** Use the **Advanced > Edit Variables** option.
   - **On UNIX and Linux:** Add the variable to the config/*product_code*.ini and to config/*product_code*.config files.
   - **On z/OS:** Add the variable to the **RKANPAR** library, member K*product_code*ENV.
   - **On i5/OS:** Add the variable to the **QAUTOTMP/KMSPARM** library in member **KBBENV**.
3. Some monitoring agents (for example, the monitoring agent for MQ Series) do not reference the **CTIRA_HOSTNAME** environment variable to generate component names. Check the documentation for the monitoring agent that you are using for information on name generation. If necessary, contact IBM Software Support.

Issues with starting and stopping an agent as a non-Administrator user

You might experience issues with starting and stopping an agent as a non-Administrator user. This issue is caused because of improper permissions set for the *hostname_pc*.run file.

That file is created or modified every time an instance is started or stopped. All instances must use the same user ID.

UNIX-based systems Log agent was deployed, configured, and started but returns the KFWITM290E error

The Tivoli Enterprise Monitoring Server is timing out waiting for deployment action to complete. The default timeout is 600 seconds. You can change the timeout setting to KFW_SQL1_ASYNC_NOTIFY_MAX_WAIT in kfwenv.

```
KFW_SQL1_ASYNC_NOTIFY_MAX_WAIT=1000
```

KDY1024E error displays when configuring the run-as user name for an agent

The error message KDY1024E displays when configuring the run-as user name for an agent when the UNIX-based systems monitoring agent was installed as a non-root user. For UNIX-based systems, you can only configure the run-as user name if the UNIX-based systems/UNIX-based systems monitoring agent was installed using the root user. In this case, leave the entry for the run-as user blank or set the run-as user to the same user ID used to install the UNIX-based systems monitoring agent.

Interface unknown messages in ras1 logs

Interface unknown messages appear in the ras1 log. For example:

```
(46CB65C1.0001-F:kdcsdrq.c,466,"do_request") Interface unknown
684152a852f9.02.c6.d2.2d.fd.00.00.00,
activity c638270e4738.22.02.09.2a.15.06.28.a2,
7509.0
```

These are issued to alert you that some set components are driving RPC requests to a server that is not setup to handle that request. Often, this occurs when the Warehouse Proxy Agent is not setup on a fixed port number. For information on how to setup the Warehouse Proxy Agent, see the IBM Tivoli Monitoring Installation and Setup Guide.

The Warehouse Proxy Agent fails

If the Warehouse Proxy Agent fails, this might be due to the port numbers are not the same every time you restart the Warehouse Proxy Agent. See the IBM Tivoli Monitoring Installation and Setup Guide for instructions on how to setup a static port number for the Warehouse Proxy Agent.

The Tivoli Data Warehouse fails and you either lose data or have memory problems

On distributed systems, the data is written to the local file system. When the Warehouse Proxy Agent receives the data, it copies the data to the Tivoli Data Warehouse. If the Tivoli Data Warehouse is not available, the collected data could take up a significant amount of memory.

On z/OS systems, the data is written to the persistent datastore. Maintenance procedures must be installed and workable to handle cases other then simply saving copies of the data. These procedures are used to recover corrupted datasets and to handle migration issues. When the persistent datastore is started, it looks at the status of a dataset and determines if it has corrupted data. If there is corruption, it launches maintenance with the options to export the data, reallocate and initialize the dataset, and then restore the exported data. Also when the persistent datastore is started, it compares the information in the dataset against the current configuration to see if any table structures have changed. When it detects a change, it goes through the same process that effectively does a database REORG. If you do not have the maintenance procedures installed and usable, the datasets might become unusable, and therefore there might be a loss of data.

If maintenance is set-up so that the data is rolled-over, the data that would have been copied to the Tivoli Data Warehouse is copied over after a set period of time.

You can set maintenance to roll off the data. For more information on rolling of this data so that it is backed up, see the *IBM Tivoli Monitoring Configuring Tivoli Enterprise Monitoring Server on z/OS Guide*.

If maintenance is not performed, then the agent stops writing to the Tivoli Data Warehouse until initialization is performed. Because the agent has stopped writing, the data is there ″forever″ until you re-initialize and start again writing from the top of the first dataset.

If persistent datastore maintenance is allowed to proceed automatically as it is intended, then the agent starts writing from the top of the first persistent datastore, therefore wrapping occurs.

The persistent datastore is set up to allow for 24 by 7 data collection even if maintenance is not specified when configuring the product in ICAT. There are typically 3 datasets, though having more is allowed.

The minimum of 3 datasets allows for continuous collection, the normal case is that one dataset is empty, one or more are full, and one is active. When an active dataset becomes full, the empty dataset is activated for continued writing. When the persistent datastore detects that there are no empty datasets left, it finds the one with the oldest data and maintains it. If the BACKUP or EXPORT options are not specified, maintenance is done within the persistent datastore to initialize the dataset so that its status changes from full to empty. If BACKUP or EXPORT are specified, a job runs to save the data, then the dataset is initialized and marked as empty. If the BACKUP or EXPORT was specified, but the maintenance jobs fail to do their job, the recording would stop in the persistent datastore. In this case, datasets are taken off-line until there are no more available datasets for reading or writing.

Note: If you allocate persistent datastores that fit more than 24 hours worth. The agent initializes and writes as much data as it can fit in the persistent datastores, 24 hours or more. The Tivoli Enterprise Portal, for short term history display, only pulls up 24 hours worth of data. The warehouse can archive ALL the data in the persistent datastores, regardless if it has been 24 hours or more worth of data.

If you create a Tivoli Enterprise Portal query that is over 24 hours, then the warehouse fulfills that request regardless if the data is in the online persistent datastores.

Also, because the agent or Tivoli Enterprise Monitoring Server reads the entire persistent datastores at initialization time, you should not allocate very large persistent datastores to potentially store more than 24 hours. That increases the Tivoli Enterprise Monitoring Server and agent startup time. As mentioned above, the agent writes to it, but the Tivoli Enterprise Portal only displays 24 hours from it. The warehouse processing reads all the data in the persistent datastores (24 hours or more), but there is a trade-off in Tivoli Enterprise Monitoring Server and agent startup time. It is always best to calculate space for 24 hours as best as possible.

As far as the potential of losing historical data, if the warehouse is down over 24 hours, that is a potential problem, assuming the persistent datastore's backup processing is functioning and, therefore, the agent does not stop writing to the persistent datastores.

Since you have the choice of collecting history data at the Tivoli Enterprise Monitoring Server or the Tivoli Enterprise Monitoring Agent, the persistent datastore should be defined in both places. If you are 100% sure that you will always collect at the Tivoli Enterprise Monitoring Agent or always collect at the Tivoli Enterprise Monitoring Server then you can optionally define the persistent datastore in only one location. Note that many configuration issues occur because the person installing the product selects one location for the persistent datastore and sometime later someone else enables history collection for the other location.

Error list appears in warehouse logs

The following error list appears in the warehouse logs:

```
== 25 t=Thread-1 com.ibm.db2.jcc.c.DisconnectException:
A communication error has been detected.
 Communication protocol being used: T4Agent.sendRequest().
Communication API being used: OutputStream.flush().
Location where the error was detected:
There is no process to read data written to a pipe.
Communication function detecting the error: *. Protocol specific error codes(s)
TCP/IP SOCKETS   DB2ConnectionCorrelator: G92A17E8.C3D2.071018074633
 at com.ibm.db2.jcc.b.a.a(a.java:373)
 at com.ibm.db2.jcc.b.a.y(a.java:346)
 at com.ibm.db2.jcc.b.a.l(a.java:298)
 at com.ibm.db2.jcc.c.j.c(j.java:234)
 at com.ibm.db2.jcc.c.uf.lb(uf.java:1934)
 at com.ibm.db2.jcc.c.uf.addBatch(uf.java:1348)
 at com.tivoli.twh.khd.khdxjdbc.addBatch(khdxjdbc.java:1290)
```

Check the ethernet adapter settings on both the client and server. There are problems if the adapter is set to Auto and the switch is set to 100/Full Duplex.

The Warehouse Proxy Agent leaks memory when either the User ID or password is incorrect

A memory leak can occur if the Warehouse Proxy Agent User ID or password is incorrect, and this leak is most probably occurring in the ODBC layer.

When configuring the Monitoring Agent for Sybase and the Warehouse Proxy Agent, receive message to use CandleManage

The CandleManage command has been deprecated. The message should reference the ./itmcmd manage command.

listSit command with the type option fails with a KUIC02001E message on Japanese Systems

Edit the kuilistsitVld.xml file to replace the following text:

```
<Type    arg1="-t"  arg2="--type"  Type ="String" ValidationRegExp=
"[-A-Za-z0-9 _/()\&%.]" Required="Y"/>
```

with the following text:

```
<Type    arg1="-t"  arg2="--type"  Type ="String" ValidationRegExp=
"[-A-Za-z0-9 _/()\%.]" Required="Y"/>
```

New agents do not display in the Tivoli Enterprise Portal navigator

The Tivoli Enterprise Portal navigator does not update automatically when an agent is installed or uninstalled from to the managed system. You must refresh the navigator to display changes. Do the following to refresh the navigator from the Tivoli Enterprise Portal menu:

- Press the F5 key on your keyboard.

  –OR–

- Click **View** > **Refresh**.

An agent does not start on a Solaris system

The log shows error messages such as the following:

```
(42D58E75.001B-1:kglcry.c,204,"checkICCStatus") ICC error detected
(42D58E75.001C-1:kglcry.c,172,"printICCStatus") majRC=2, minRC=3, mode=0
(42D58E75.001D-1:kglcry.c,174,"printICCStatus") desc=Unable to load
/icc/osslib/libcrypto.so.0.9.7
(42D58E75.001E-1:kglcry.c,2196,"initializeICC") ICC attachment failed
```

These log messages indicate that you are running the IBM Tivoli Monitoring agent on Solaris 2.9 hardware, which is not supported. Install the IBM Tivoli Monitoring agent on Solaris 2.10 hardware.

An agent displays unavailable in the Tivoli Enterprise Portal

The agent is not online. Do the following to ensure the agent is online:

- Check the agent log for data communication errors.
- Check the managed system status in the Tivoli Enterprise Portal.
- Ensure that the agent process started.
- Check the Tivoli Enterprise Monitoring Server kfwras1.log for errors.
- Check the Tivoli Enterprise Monitoring Server kfwras1.log.

CTIRA_HOSTNAME has no effect on log file names

Setting CTIRA_HOSTNAME with the virtual hostname shows the agent on the workspace as one entity no matter the node on which it is running. However, the setting has no effect on the log file names. These names still use the local nodename instead of the virtual hostname.

Summarization and Pruning Agent in large environment

The following index and tuning changes were made to reduce Summarization and Pruning run time in an environment with 10,000 agents. The database server was DB2 running on AIX:

- Async IO changes to AIX

  Change Minimum Servers and Maximum Servers from 1 and 10 to 40 and 80. A reboot is required.

- Change the DB2MAXFSCRSEARCH value, using the following command:

  ```
  db2set DB2MAXFSCRSEARCH=2
  ```

- Enable the DB2_USE_ALTERNATE_PAGE_CLEANING value, using the following command:

  ```
  db2set DB2_USE_ALTERNATE_PAGE_CLEANING=ON
  ```

- Enable the DB2_PARALLEL_IO value (with the number of disks in the largest array):

  ```
  db2set DB2_PARALLEL_IO=*:9
  ```

- Increase the DBHEAP value from 1800 to 3000 by updating the database configuration for the WAREHOUS database by using the following command:

  ```
  update database config for WAREHOUS using dbheap 3000
  ```

- Increase the LOGBUFSZ value from 1024 to 2048 by updating the database config for the WAREHOUS database by using the following command:

  ```
  update database config for WAREHOUS using logbufsz 2048
  ```

- Increase the prefetch size from AUTOMATIC (32) to 288 by altering the tablespace userspace1 by suing the following command:

  ```
  alter tablespace USERSPACE1 prefetchsize 288
  ```

- Drop all HX2 and DX2 indexes from aggregate tables.
- Drop all of the indexes on the WAREHOUSELOG table:

  ```
  drop index "ITMUSER"."WHLOG_IDX1";
  drop index "ITMUSER"."WHLOG_IDX2";
  drop index "ITMUSER"."WHLOG_IDX3";
  ```

- Create this index on the WAREHOUSELOG table. This index greatly improves SELECT statements made during pruning of the WAREHOUSELOG.:

  ```
  CREATE INDEX "ITMUSER "."WHLOG_IDX1" ON "ITMUSER "."WAREHOUSELOG"
         ("ORIGINNODE" ASC, "EXPORTTIME" ASC) ALLOW REVERSE SCANS;
  ```

- In the Summarization and Pruning Agent configuration file, increase the KSY_MAX_ROWS_PER_TRANSACTION value from 1000 to 3000 in the file, ksy.ini.
- From the root user, change the Ulimit file parameter by using the following command:

  ```
  ulimit -f unlimited
  ```

- Increased the NUM_IOCLEANERS value from 14 to 24.

The Summarization and Pruning Agent is logging ″Interface unknown″ messages

This happens when you have the Warehouse Proxy Agent and some other component on the same system and you shutdown the Warehouse Proxy Agent and start the other component, which may re-use the same port previously used by the Warehouse Proxy Agent. These messages are benign but end up filling the logs until the Warehouse Proxy Agent is restarted, and the synchronization of the Warehouse Proxy Agent location is sent to all Tivoli Enterprise Monitoring Servers.

The Summarization and Pruning Agent and the Warehouse Proxy Agent do not work with DB2 9.1 Fix Pack 2

Do not try to use these agents with this version of DB2.

An error of 'can bind a LONG value only for insert' appears

The following message appears in the Warehouse Proxy Agent:

```
ORA-01461: can bind a LONG value only for insert into a LONG column
```

Upgrade to Oracle 10.1.0.5 or later.

Errors in either the Warehouse Proxy Agent or Summarization and Pruning Agent logs

You receive the following error in either the Warehouse Proxy Agent or Summarization and Pruning Agent logs:

```
DB2 SQL error: SQLCODE: -964, SQLSTATE: 57011, SQLERRMC: null
```

The solution is to increate the DB2 logging for the warehouse database. See the *IBM Tivoli Monitoring for Databases: DB2 Agent User's Guide* for more information.

Receive a message saying that the statement parameter can only be a single select or a single stored procedure

You receive the following message when connecting to a Microsoft SQL Server 2000 database on a Windows 2000 system from a Warehouse Proxy Agent on a Linux system using Microsoft SQL Server 2005 JDBC driver 1.2 April 2007.

```
SSQL error: Exception message: sp_cursoropen/sp_cursorprepare:
The statement parameter can only be a single select
or a single stored procedure.
```

This was fixed by not adding by default the selectMethod=cursor string in a Microsoft SQL Server URL, but you also must remove the string selectMethod=cursor that comes by default when choosing the Microsoft SQL Server database in the Warehouse Proxy Agent configuration panel on UNIX systems.

The Summarization and Pruning Agent hangs or has a worker thread that hangs

This can be caused (on DB2 at least) if there is another application (DB2 Control Center) holding a lock on the table. DB2 by default has LOCKTIMEOUT set to -1, meaning a long wait that causes the Summarization and Pruning Agent to appear to hang. Closing the offending application (or resolving the deadlock) solves the problem.

Chapter 9. Universal Agent troubleshooting

This chapter describes problems that might occur with the Universal Agent.

Preliminary Universal Agent problem determination

Correct operation of the IBM Tivoli Monitoring requires correct application data definitions, environment variables, and Tivoli Enterprise Monitoring Server and Tivoli Enterprise Portal configuration. Many problems are caused by incorrectly formatted data or data interpretation. Therefore, begin Universal Agent problem determination with the data provider.

Before troubleshooting a problem with the Universal Agent, review the following list of fundamental Universal Agent problem determination tasks.

- Validate the metafiles using the console command VALIDATE. Review the validation messages and report. Resolve all identified errors and warnings. Because the IBM Tivoli Monitoring calls the same validation subroutines when it loads a metafile, it encounters the same problems as the KUMPCON VALIDATE program.
- Verify that the first three characters of the application name defined in the APPL statement of the metafile are unique throughout the enterprise.
- Verify that the sequence of data fields on the data record matches the listed sequence of attributes in the metafile. In addition, ensure that the attribute type and the maximum data value size correspond to the actual application data values.
- Verify that the actual data fields are delimited exactly as specified in the delimiter specification of the ATTRIBUTES statement. If the delimiter is specified as NONE, ensure that defined attribute value sizes exactly match the data values on the application data record.
- For FILE Data Providers, verify that only one file source (SOURCE FILE statement) is specified for each attribute group (NAME statement) or that you used ManagedSystemName to distinguish the sources.
- For SOCK Data Providers, verify that you have the correct socket source host name (SOURCE SOCK) specified for the application.
- Examine the UAGENT DPLOG report in Tivoli Enterprise Portal. It might include messages that provide clear indications concerning data provider operation and the data source disposition.

Universal Agent does not start

The Universal Agent did not allocate its DCH port 1919 for one of the following reasons:

Table 20. Universal Agent does not start

Problem	Explanation
Another Universal Agent process is running on the same system and the other Universal Agent was not shut down.	The following are the last messages that display in the Universal Agent RAS1 log. `kum0sock.c,110,"KUM0_OpenLocalSocket") bind failed for local address UDP socket 512, port=1919, = error=10048 kum0sock.c,110, "KUM0_OpenLocalSocket") bind failed for local address TCP socket 512, port=1919, error=10048 kumdsock.cpp,964, "ipcSock::allocateDCHport") Error: Could not open TCP/UDP sockets bound to universal agent DCH port 1919 kumdsock.cpp,965,"ipcSock::allocateDCHport") Determine if another copy of Universal Agent is already active on this system. Exiting...`  **Note:** In the RAS1 log above, the Winsock error code 10048 indicates the "Address is in use". On UNIX-based systems platforms, the equivalent "Address in use" error code is usually 125. Run `netstat –a` for more information about port usage on the local system.Stop the other process if it is not required. If the other process is required, set KUMA_DCH_PORT=nnnnn in the KUMENV or um.ini file. The environment variable causes the Universal Agent to allocate a different DCH port during startup.
There is a non-Universal Agent process running on the same system and the Universal Agent was not shut down.	

Custom Universal Agent's data is not being summarized

Specify the PRIMARYKEY option for the key fields to tell the Summarization and Pruning Agent how to distinguish multiple instances.

The option below is used to designate a key attribute:

`OPTION{PRIMARYKEY=n}`

This option is required for every attribute group. The variable *n* starts at 0 for each attribute and increases by 1 as necessary. Use PRIMARYKEY=0 for the key of the unique identifier in a multirow attribute group. For example, if an attribute group describes disk drives, you should specify PRIMARYKEY=0 with each attribute that contains the unique ID for each disk drive. This keyword is used at the column level.

The sysxlogins report is empty in the TIVOLI_DATA_WAREHOUSE ODBC application

Use the steps to determine why the sysxlogins report is empty in the TIVOLI_DATA_WAREHOUSE ODBC application.

1. Check the UAGENT DPLOG for the ODBC DP for error messages.
2. Resolve any errors. If there are no error messages, the log indicates that monitoring started for the sysxlogins table.
3. Verify that other attribute groups for this metafile display data.

   If other attribute groups display data, the connection to the data source is performing as expected and only the sysxlogins report is having the problem.
4. Check the RAS1 log for error messages pertaining to the sysxlogins attribute group, including message that state data was not found for key attributes srvid and sid.

   The following example shows that indexed key attributes srvid and sid are not defined with a value. Therefore all four rows in the attribute group table were skipped, resulting in error an empty sysxlogins report.

```
***** No ODBC table data found for key attribute <srvid> row #1
in attribute group <sysxlogins>, skipping this row...
***** No ODBC table data found for key attribute <srvid> row #2
in attribute group <sysxlogins>, skipping this row...
***** No ODBC table data found for key attribute <srvid> row #3
in attribute group <sysxlogins>, skipping this row...
***** No ODBC table data found for key attribute <sid> row #4
in attribute group <sysxlogins>, skipping this row...
```

5. Check the sysxlogins attribute group in the generated TIVOLI_DATA_WAREHOUSE metafile for the following data:

```
//NAME sysxlogins K 300 @System table
//SOURCE ODBC 'Tivoli Data Warehouse' user=sa pswd=tivoli
//SQL Select * from dbo.sysxlogins
//ATTRIBUTES
srvid  C  999999 KEY
sid  D  88 KAY ATOMIC
xstatus C  999999
xdate1 D  24
xdate2 D  128 KAY ATOMIC
password D  256
 dbid  C  999999
```

   Note: When ODBC metafile generation occurs, every column defined in the catalog as indexed receives the KEY specification in the associated Universal Agent attribute. KEY attributes in any Universal Agent metafile must have a correct value or the row is not sent to the data server. The srvid and sid columns are not correctly defined as indexed because they often do not contain a value.

6. Remove the KEY specifications for these two attributes and refresh the metafile. The table can maintain the KEY designation because there is another attribute in sysxlogins marked as KEY.

Universal Agent console program fails to connect

The Universal Agent console interface, implemented with the um_console shell script on UNIX and the kumpcon program on Windows, requires a successful socket connection to the main Universal Agent process. The following error message can occur whenever you issue a Universal Agent console command or a Distributed Monitoring Upgrade Toolkit command:

```
KUMPS005E Unable to connect to console command server on myhost[7700]
```

This error can occur for the following reasons:

- Universal Agent is not currently running.
- An alternate instance of Universal Agent is running. Alternate instances do not use the default console server listening port number of 7700. Instead, the first alternate instance uses 8700, the next instance uses 9700, and so on. To target the correct alternate instance, set the KUMP_DPCONSOLE_PORT environment variable. See the following example:

  ```
  KUMP_DPCONSOLE_PORT=8700
  kumpcon import monitor.mdl
  ```

- There is a firewall on the system that blocks the socket connection between the Universal Agent console program and the Universal Agent process. If all port communications on the system require explicit permission, then the kumpcon program must be granted access to the console server listening port.

The agent fails, but events are still seen as active

It is possible for a situation to remain open for almost four times the sample period before the event closes. For example if a situation had a sample period of 15 minutes the following could occur:

```
The first sample true - 00:00
- sample true - no change in status 15:00
- agent crashes - 15:01
- proxy sends last sample - 30:01
- proxy sends last sample - 45:01
- proxy ends. return no sample 60:00
```

Previously defined situations display in the Tivoli Enterprise Portal with a Problem or Error status

Situations with a problem or error status are most likely the result of running um_cleanup, which deletes the Tivoli Enterprise Portal Server catalog and attribute files and the Tivoli Enterprise Portal Server ODI files for all Universal Agent applications. When the Tivoli Enterprise Portal Server and Tivoli Enterprise Portal server are recycled, they detect situations with no corresponding definition files. These situations are flagged as a problem until the application definition files are regenerated and uploaded again to the Tivoli Enterprise Portal Server and Tivoli Enterprise Portal Server.

All Universal Agent-emitted traps display with the same severity

Many different policy-generated traps are sent by Universal Agent to a 3rd party SNMP Manager product, but all the traps show up with the same severity and it's not the severity specified in the policy definition. Turn on the Universal Agent environment variable KUMP_TRAP_USE_POLICY_SEVERITY:

```
KUMP_TRAP_USE_POLICY_SEVERITY=Y
```

The Managed system version suffix increases

Each time the Universal Agent is restarted, the managed system version suffix for an application is incremented even though the metafile has not changed. There are two metafiles activated that have the same three-character application prefix. If the metafiles are activated one after the other, the Universal Agent determines that the three-character application was modified and registers a new version suffix and upload new CAT, ATR, and ODI files.

Tivoli Enterprise Portal column headings are missing for a Universal Agent application

A Universal Agent application is online to Tivoli Enterprise Portal but all of its column headings are missing in the application workspace.

The Universal Agent-generated CAT, ATR, and ODI files were not uploaded to the Tivoli Enterprise Portal Server and Tivoli Enterprise Portal Server directories. The most current and accurate copies of these definition files are in Universal Agent's work directory. If necessary, you can copy or FTP these files from the work directory to the appropriate Tivoli Enterprise Portal Server and Tivoli Enterprise Portal Server directories.

A variation of this problem is that some of the column headings display but not all of them, or the column headings are incorrect. This could indicate old or out-of-synch CAT, ATR, and ODI files in the Tivoli Enterprise Portal Server and Tivoli Enterprise Portal Server directories. Again, you can always synchronize these files by copying them from the Universal Agent work directory and recycling the Tivoli Enterprise Portal Server and Tivoli Enterprise Portal Server.

Another possible explanation is that Universal Agent is connected to a remote Tivoli Enterprise Portal Server, and the Universal Agent-generated CAT and ATR files for the application didn't get propagated to the hub Tivoli Enterprise Portal Server. Tivoli Enterprise Portal Server only queries the hub Tivoli Enterprise Portal Server, so it's unable to retrieve the data rows. Copy or FTP the Universal Agent-generated CAT and ATR files from the remote Tivoli Enterprise Portal Server to the hub Tivoli Enterprise Portal Server.

Tivoli Enterprise Portal charts and graphs do not work for numeric data

Tivoli Enterprise Portal charts and graphs for a Universal Agent application are empty even though the attributes are defined as ″N″ in the Universal Agent metafile. The Universal Agent ″N″ attribute type means DisplayNumeric. It is a string representation of a numeric attribute that can include non-numeric characters, such as a floating point number or a large number with comma separators. A DisplayNumeric attribute is a string in the ODI file and is not eligible for Tivoli Enterprise Portal charting and graphing. If you want to use a Universal Agent attribute in a chart or graph, define the attribute in the metafile as a true numeric attribute, for example:

- C for Counter
- G for Gauge

kumstrap and kumsnetd processes do not start

After running `itmcmd agent start um` on UNIX-based systems, the following error messages display:

```
elsun02% itmcmd agent start um
itmcmd agent  : installer level 350 / 552.
itmcmd agent  : running sol25 jre.
Starting agent  . . .
Note: Universal agent process kumsnetd did not start.
NOte: UNiversal agent process kumstrap did not start.
Agent Started . . .
```

When you check the Universal Agent RAS1 log file, the following messages display at the bottom:

```
-16:kum0sock.c,132,"KUM0_OpenLocalSocket") bind failed for local address
UDP socket 71, port=162, error=13
-F:kumsrcfg.c,73,"KUMS_ReadNetConfigFromExt")
Network configuration file /control1/dbisk/
candleUa410/sol276/um/work/KUMSNETS open failed,
ErrorText <No such file or directory>. \
Load network configuration bypassed
-18:kbbssge.c,52,"BSS1_GetEnv") KUMP_SNMP_NET_DISCOVER_ENTERPRISE="N"
Network configuration discovery tasks started.
-17:kumsrcfg.c,267,"KUMS_ReadRouterConfigFromExt") Router configuration
file /control1/dbisk/ candleUa410/sol276/um/work/KUMSROUT open failed,
ErrorText <No such file or directory>. \
Load router configuration bypassed 17:kumsrcfg.c,294,
"KUMS_ReadRouterConfigFromExt") 0 router record(s) loaded from router
```

```
configuration file /control1/dbisk/candleUa410/sol276/um/work/KUMSROUT
-19:kbbssge.c,52,"BSS1_GetEnv") KUMP_SNMP_MANAGE_LOCAL_NETWORK="N"
-16:kumsplst.c,167,"KUMS_PrepareListenSNMPtrap") *****
Unable to open SNMP trap listen port
-16:kumsplst.c,193,"KUMS_PrepareListenSNMPtrap")
Note: Determine if another SNMP Manager \
process is active on this system.
Monitoring of SNMP traps disabled. No trap receiving port or API available.
Insufficient process authority for executing ICMP procedures.
-17:kum0sock.c,132,"KUM0_OpenLocalSocket") bind failed for local address
 UDP socket 71, port=520, error=13
-17:kumslrtu.c,148,"KUMS_ListenRouterUpdates")
***** unable to open socket with router \
well-known port-17:kum0sock.c,132,"KUM0_OpenLocalSocket")
bind failed for local address UDP socket 73, \
port=520, error=13
-17:kumslrtu.c,148,"KUMS_ListenRouterUpdates")
***** unable to open socket with router well-known port
```

The `error=13` indicates a permission failure. The Universal Agent was not started with a root ID so the trap receiving and router/network discovery processes did not acquire the low-numbered ports needed. The kuma610 continues to run without those two processes.

Note: The kumstrap and kumsnetd processes are required only if you configured the SNMP data provider on a UNIX-based system with the following environment variables specified:

- KUMP_SNMP_MONITOR_TRAP=Y
- KUMP_SNMP_NET_DISCOVERY=Y

You can correct the authorization problem either by doing one of the following:

- Start the Universal Agent with a root ID.

  –OR–

- Use the SetPerm script in the /bin directory to grant root access to the kumstrap and kumsnetd binaries.

  If you use the SetPerm script to grant root access to kumstrap and kumsnetd, you do not need to start Universal Agent with a root ID for the two processes to start successfully. Because the kumsnetd process has the necessary root authority to acquire port 520, you can ignore the following error messages in the Universal Agent RAS1 log file:

  ```
  kum0sock.c,134,"KUM0_OpenLocalSocket") bind failed for local address UDP
  socket 67, port=520, errno=13
  kumslrtu.c,148,"KUMS_ListenRouterUpdates") ***** unable to open socket with
  router well-known port
  ```

The Universal Agent stops functioning if the system IP address changes while it is running

If a network connection failure occurs and the UA system is assigned a different IP address after the reconnection, UA will stop processing new input data because of socket bind failures. Recycle the Universal Agent so that it uses the new IP address.

'Unable to get attribute name for tablename/column' error occurs in the Tivoli Enterprise Monitoring Server log after creating a situation

After creating a situation for Universal Data Provider to fire event, the following error occurs in the Tivoli Enterprise Monitoring Server log file:

```
(4320916A.0049-F60:kfaottev.c,1572,"Translate_ResultBuffer")
Unable to get attribute name for tablename/column <UAG524400.UA4>. Ignored.
```

The Tivoli Enterprise Monitoring Server log messages are harmless for Universal Agent applications because of the time lag between the issuing of the messages and when the Universal Agent-uploaded attribute files are stored at the Tivoli Enterprise Monitoring Server. However, if these messages occur for other agent applications, they can indicate that the agent attribute files were not installed on the Tivoli Enterprise Monitoring Server.

SNMP data provider problems

This section describes symptoms and tips for diagnosing SNMP data provider problems.

SNMP-MANAGER Trap workspace is unavailable in many columns

Every Independent Software Vendor (ISV) product that emits a trap to the SNMP DP must have a Type 2 and Type 3 record with a unique enterprise OID defined in Universal Agent trapcnfg file in Universal Agent work directory. When a trap is received, the SNMP data provider looks up the trap enterprise OID value, generic trap number, and specific trap number in the trapcnfg. The trap definition values received by the SNMP data provider must match the definitions in the trapcnfg file. If the SNMP data provider does not find a match for the values in the trapcnfg, it sets the status of the trap as ″Unavailable″ in the SNMP-MANAGER Trap table attributes. Although the traps are received, they display the ″Unavailable″ status in the SNMP-MANAGER Trap workspace.

The following example shows an intelliWatch trap definition:

```
intelliWatch-Monitor {1.3.6.1.4.1.1983.1.1}
    (Type 2)
criticalAlarm {1.3.6.1.4.1.1983.1.1} 6 1 A 1 0 "Status Events" (Type 3)
```

where:

1983 Specifies the Enterprise OID.

6 Specifies generic trap number.

1 Specifies the specific trap number.

Define the correct traps values in the trapcnfg file in the Universal Agent work directory.

The TRAP workspace does not display expected traps

For the SNMP to receive traps from SNMP agents, the trap destination list of the monitoring agent must include the host name or IP address of the host on which the Data Provider resides. Configuration of SNMP agents varies from monitoring agent to monitoring agent. Refer to your SNMP monitoring agent documentation.

If you are not receiving traps ensure that:

- SNMP is in the list of data providers being started
- The host of the SNMP Data Provider is configured to receive traps
- Agents are configured to send traps to the host of the SNMP data provider.
- That the trap listener started successfully by checking the UAGENT DPLOG workspace for the SNMP Data Provider
- KUMP_SNMP_MONITOR_TRAP is not set to N
- You add the trap description data to the file `trapcnfg` if a trap field shows UNAVAILABLE,

SNMP metafiles are imported but MIB data collection is not working

The MIB application workspaces are empty after initiating MIB data collection (**Take Action** > **Monitor Start**).

Table 21. MIB data collection is not working

Problem	Resolution
The community name was not specified correctly for the SNMP agent.	Use an MIB browser or freeware utility such as snmputil to retrieve MIB variables from this SNMP agent to determine the source of the problem.
The SNMP agent is not responding to any SNMP Get requests.	
The MIB OIDs on the SNMP agent host do not match the OIDs specified in the Universal Agent metafile.	
The agent does not respond to basic SNMP Get requests from Universal Agent.	All SNMP agents support the MIB2 OIDs such as SysName and SysLocation. Use the rfc1213 metafile to establish a baseline of functionality. Use the Universal Agent RFC1213_mib-2.mdl to collect MIB-2 data from the agent to verify that the SNMP agent responds to basic SNMP Get requests from Universal Agent.

Universal Agent-emitted traps are not received by third-party SNMP Manager

The policies are configured to emit SNMP traps, but the traps do not display in the receiving system console. Use the following table to determine the source of this problem.

Table 22. Universal Agent-emitted traps are not received by third-party SNMP Manager

Symptom	Explanation

There are error messages in the Universal Agent RAS1 log in the kumaeagt.cpp module.	Error messages indicate why the policy is not being driven, for example:
	`kumaeagt.cpp,154,"kum_kumact_agent::TakeSample")`
	`Error: could not find terminator in`
	`<Local_Time.Day_Of_Week> = '02' AND Local_Time.Day_Of_Week <= '06' AND Local_Time.`
	`Time>= '053000' AND Local_Time.Hours <= '21' AND Queue_Statistics.Current_Depth >= 12800 \`
	`AND STRSCAN(QMQUEUES.QNAME, 'ACK') = 0;> tok1 @NULL tok2 @NULL tok3 @NULL attrValTemp <>`
	
	The kumaeagt.cpp module implements Universal Agent's Alert Emitter probe. Any error messages in this module might indicate that the policy request never got to the Universal Agent module that sends the traps.

Table 22. Universal Agent-emitted traps are not received by third-party SNMP Manager (continued)

Symptom	Explanation
There are no error messages in the Universal Agent RAS1 log but the traps are not received.	If the Universal Agent RAS1 log has no error messages, check whether there are error messages in the Tivoli Enterprise Monitoring Server log. If there are errors that report a duplicate CAT and ATR files, there might be a name conflict with other installed IBM Tivoli Monitoring emitters.
Search for errors showing policies ending with a "cmd failed" reason code.	In an MVS-based Tivoli Enterprise Portal Server, a "cmd failed" reason code indicates the KUMATR and KUMCAT files are missing from RKANDATV.
If the Universal Agent RAS1 log contains "SNMP trap emitted to destinations(s) ..." messages, but the traps do not display on the 3rd party SNMP Manager console.	A firewall might prevent communication between the machine where Universal Agent is running and the machine where the SNMP Manager product is running.
	Security rules might filter, block, or divert SNMP traps.
	Configuration steps might be required on the SNMP Manager product so that it can receive and display the Universal Agent traps.
	The SNMP Manager product might have a log file that indicates whether it receives or rejects the Universal Agent traps.
	If the host name of the Universal Agent SNMP Data Provider is added as a trap destination, the Universal Agent Emitter traps do not display in the SNMP-MANAGER Trap workspace.

The NETWORK workspace is empty

Ensure the following:

- The host where the SNMP Data Provider is running is TCP/IP configured.
- You can ping the default router/gateway from the host of the SNMP Data Provider.
- You have initiated network discovery using **Take Action > Manage Start**.

A MIB workspace is not showing expected data

For MIB workspaces to display data, you must initiate data collection using the **Monitor Start** option of the **Take Action** feature. If you are still not receiving data:

- Ensure that the correct metafile was loaded.
- Confirm that the correct target monitoring agent nodes were specified in the **Monitor Start** window, separated by commas.
- Confirm that the node and correct community name were entered in brackets. The following example displays correct formatting if the SNMP community name of the target is not the default (public) nor specified by KUMP_SNMP_NET_COMMUNITY, and there is no entry in the KUMSCOMM file:

```
{athens IBM}
```

Take Action > Manage Start or Take Action > Manage Stop is not working

Ensure the following for the Manage Start and Manage Stop Take Action to work:

- The address is correct if you entered the network address manually (rather than selecting it in the NETSUMMARY workspace).

- The destination managed system you specified when distributing the action is *host name*:SNMP-MANAGER*NN*.

Problems with Take Action commands and curly brackets

Take Action commands that are created with curly brackets, {}, are not recorded and cannot be selected from the Tivoli Enterprise Portal. This happens only for ″{″ (ALT+123) and not for ″}″.

There has been a change in syntax where attributes that are enclosed in curly brackets, {}, no longer are required to have quotes. See the following example:

```
&{grp1.atr1}.&{grp2.atr2}
```

The SNMP Data Provider does not start with IBM Tivoli Universal Agent

Ensure you included SNMP as a value for environment variable KUMA_STARTUP_DP.

You do not see the TakeAction options

Seed the Tivoli Enterprise Monitoring Server with KUM.SQL and restart the Tivoli Enterprise Monitoring Server and Tivoli Enterprise Portal sessions.

A managed system for a MIB application does not come online as expected

Ensure that you imported the application metafile either through the console command IMPORT or updating your KUMPCNFG file. Check your DPLOG workspace in the application UAGENT for error messages regarding the importing of the metafile.

The NETSUMMARY workspace does not show expected data

Ensure that you can ping the default gateway or router from the host running the SNMP Data Provider.

A MIB workspace displays empty when you expect to see data

A MIB workspace displays empty if the community name used for the SNMP query was not the correct one for a particular SNMP monitoring agent.

To determine that a MIB workspace is empty as a result of an incorrect community name, monitor for the Authentication failure trap from the SNMP monitoring agent. Assuming the SNMP monitoring agent is configured to generate traps to the host running the SNMP DP, you can browse your SNMP-MANAGER TRAP workspace to look for Authentication failure traps (Generic trap number 4).

Chapter 10. Database troubleshooting

This chapter provides information you need to solve problems you might experience with the database. It covers data loss prevention information and descriptions of common problems and appropriate resolutions. It also addresses issues you might experience with the Tivoli data warehouse and Warehouse Proxy agent.

Data loss prevention

This section provides information about utilities you can use to back up and restore databases.

Backing up the database for recovery purposes

You can use the following utilities to back up the database:

Table 23. Utilities for backing up the database

migrate-export.bat	The migrate-export.bat utility backs up the entire database by writing its contents as insert statements to a flat file called saveexport.sql located in *install_dir*\cnps\sqllib. It can also be used to move the contents of the database from one database instance to another. You might use this utility to move the contents of the database from one windows server to another.
migrate-import.bat	This utility is used to read the contents of the saveexport .sql file created in the migrate-export process and insert them back into the database. This utility can be used to recover the database. It reads the contents in the *install_dir*\cnps\sqllib\saveexport.sql and rebuilds the database tables and contents. You can also use the migrate-import.bat to move the contents of the database to another windows server running the database. 1. Run migrate-export.bat 2. Copy the saveexport.sql file from the old Tivoli Enterprise Portal Server to the new Tivoli Enterprise Portal Server into the *install_dir*\cnps\sqllib directory. 3. Run migrate-import.bat to read and build the database tables and contents on the new machine.

Restoring the original database contents

The migrate-clean.bat utility cleans the contents of the database. Use the migrate-clean.bat file with caution. You must backup the database before running the migrate-clean.bat file or you lose all customization of the database. When you restart the Tivoli Enterprise Monitoring Server, the database is restored to its original state after installation. This is a quick way to reset the database back to its original state. After running this bat file and restarting the Tivoli Enterprise Monitoring Server server, the original content provided by IBM Tivoli Monitoring is restored to the database.

If you modify your password or if it expires

The database requires the following user IDs:

db2admin
This ID is added when you install the database and is required by the product installer when you configure the Tivoli Enterprise Portal Server data source.

TEPS This ID is added during installation for creating the Tivoli Enterprise Portal Server data source.

If the Windows Local Security Settings are enabled for long or complex passwords, ensure your password meets those syntax requirements for these IDs. If your Windows environment requires you to change passwords regularly do the following to change the Tivoli Enterprise Portal Server database user account password.

Note: The following instructions do not apply in UNIX-based systems.

1. On the computer where the Tivoli Enterprise Portal Server is installed, be sure you are logged on to Windows with an ID having administrator authority.
2. From your Windows desktop, select **Start > Programs > Tivoli Monitoring Services > Manage Tivoli Enterprise Monitoring Services**.
3. Right-click the Tivoli Enterprise Portal Server and select **Advanced > Utilities > Build Tivoli Enterprise Portal Server Database** from the menu.
4. Click **DB2** to open the Tivoli Enterprise Portal Server Data Source Config Parameters window.
5. Enter the Admin Password.
6. Enter the new Database Password for the Tivoli Enterprise Portal Server Database User ID.

Tivoli Enterprise Portal Server cannot connect to the database

If an error message displays indicating the connection failed for security reasons, the end user is logged in to the server with a userid with administrator authority, but is logged into the local domain instead of locally on the machine. The user does not have authority to create a data source and register with windows, or the authority to create a windows user account. Continue installing the software, using the following steps to resolve the error:

1. When the install completes, log off the current Windows user session and log in with using the db2admin userid.
2. Run *install_dir*\installITM\DB2DataSource.exe from Windows Explorer or a command prompt. You can run this program again, even if one or more of the tasks completed the first time it ran.
3. Start the Tivoli Enterprise Monitoring Server after the software indicates the Tivoli Enterprise Portal Server configuration was successful.

If the Tivoli Enterprise Portal installation is complete but it does not start, the data source might not be defined. Go to the *install_dir*\cnps\kfwras1.log file. If error messages similar to the following are present in the log, the data source was not defined.

```
[IBM][ODBC Driver Manager]
Data source name not found and no default driver specified.
```

Use the follow steps verify whether or not the data source was created and resolve the problem:

1. Open the ODBC datasource window: **Start** > **Settings** > **Control Panel** > **Administrative tools** and double-click the **Data Sources** (ODBC) .

2. Verify that the Tivoli Enterprise Monitoring Server **IBM DB2 ODBC DRIVER** datasource is defined.
3. If the **IBM DB2 ODBC DRIVER** data source is not present, run the *install_dir*\installITM\DB2DataSource.exe file.
4. Read the error messages after running the program.
5. If the error is security related or mentions incorrect user IDs or passwords, log in to the windows server with the db2admin user account and run the db2datasource program.

If the password for db2admin changes, the logon information for the services must also change, otherwise the Tivoli Enterprise Portal Server database does not start because the DB2 processes cannot logon. Use the following steps to resolve this problem:

1. From a Windows desktop, select **Start** > **Control Panel** > **Administrative Tools** > **Services**
2. Scan the column on the right for the value .\db2admin
3. Do the following for each .\db2admin value:
   a. Open the **Properties** window.
   b. Select the **Log On** tab.
   c. Type the new password for the user.

Data did not migrate from the Microsoft SQL Server database to the DB2 Universal Database

You can run the movefrom-m2i.bat located in the *install_dir*\cnps directory to recover the contents of the Universal Database. The movefrom-m2i.bat utility creates a flat file from the SQL server database contents and imports into the Universal Database. The movefrom-m2i.bat utility runs during the installation of the Tivoli Enterprise Portal when the option to migrate from Microsoft SQL Server to the Universal Database is selected but can also be used after installation or routine Tivoli Enterprise Portal usage. This migration utility can fail if the Tivoli Enterprise Portal userid and password do not have the correct authority to connect to the Tivoli Enterprise Monitoring Server Universal Database. The movefrom-m2i.bat requires that the Microsoft SQL server database is on the same Windows platform as the Tivoli Enterprise Monitoring Server server and the new Universal Database installation. Use this utility only after migration problems and before customizing Tivoli Enterprise Monitoring Server. The movefrom-m2i.bat is only used to migrate the contents of Microsoft SQL Sever to Universal Database.

Database contents are incorrect after installation

You can run the movefrom-m2i.bat located in the *install_dir*\cnps directory to recover the contents of the database. The movefrom-m2i.bat utility creates a flat file from the SQL server database contents and imports into the Universal Database. The movefrom-m2i.bat utility runs during the installation of the Tivoli Enterprise Portal when the option to migrate from Microsoft SQL Server to the Universal Database is selected but can also be used after installation or routine Tivoli Enterprise Portal usage. This migration utility can fail if the Tivoli Enterprise Portal userid and password do not have the correct authority to connect to the Tivoli Enterprise Monitoring Server Universal Database. The movefrom-m2i.bat requires that the Microsoft SQL server database is on the same Windows platform as the Tivoli Enterprise Monitoring Server server and the new Universal Database installation. Use this utility only after migration problems and before customizing

Tivoli Enterprise Monitoring Server. The movefrom-m2i.bat is only used to migrate the contents of Microsoft SQL Sever to Universal Database.

The error SQL0443N with 'SYSIBM:CLI:-805' occurs after upgrading to DB2 UDB Version 8.1 Fix Pack 10

An error occurs with the SQLTables if the database was created before applying IBM DB2 V8.1 Fix Pack 10 (also known as Version 8.2 Fix Pack 3), you encounter an SQL0443N error if you run a DB2 Call Level Interface (CLI) catalog function (such as SQLTables(), SQLColumns(), or SQLStatistics()). The following is an example of the error in a log:

```
(430F82BD.0000-3C4:khdxodbc.cpp,319,"initializeDatabase") Connection with
Datasource "ITM Warehouse" successful
(430F82BD.0001-3C4:khdxbase.cpp,250,"setError") Error 20/3/-443(FFFFFE45)/0
executing SQLTables
(430F82BD.0002-3C4:khdxbase.cpp,266,"setError") Error "[IBM][CLI Driver][DB2/NT]
SQL0443N Routine "SYSIBM.SQLTABLES" (specific name "TABLES") has returned an
error SQLSTATE with diagnostic text "SYSIBM:CLI:-805".  SQLSTATE=38553
+430F82BD.0002 "
```

Bind the db2schema.bnd file against each database to resolve this error. Run the following command from a DB2 command prompt:

1. `db2 connect to` *`dbname`* `(Warehouse Database)`

   where:

   dbname
   Specifies the name of a database to which you want to bind the utilities, or the Warehouse Database name.

2. `DB2 bind` *`path_name`*

   where:

   path_name
   Specifies the full path name of the directory where the bind files are located, usually sqllib/bnd.

The following examples shows the rebinding commands from the `c:\SQLLIB\bnd>DB2` directory:

```
c:\SQLLIB\bnd>DB2 connect to dbname (Warehouse Database)
c:\SQLLIB\bnd>DB2 bind @db2ubind.lst blocking all grant public
c:\SQLLIB\bnd>DB2 bind @db2cli.lst blocking all grant public
c:\SQLLIB\bnd>DB2 bind db2schema.bnd blocking all grant public
```

Some rows do not display in an upgraded table

You might not see all rows after upgrading the Warehouse Proxy agent to IBM Tivoli Monitoring V6.1 because some tables might be corrupted. Do the following to find the errors that occurred during the upgrade:

1. Edit the KHDRAS1_Mig_Detail.log file.
2. Search for the word EXCEPTION.

The KHD_MAX_ROWS_SKIPPED_PER_TABLE environment variable in the KHDENV_MIG file allows you to skip bad data. Use KHD_MAX_ROWS_SKIPPED_PER_TABLE to specify the number of rows per table to skip to migrate if the data that needs to be inserted is incorrect. When this number is reached, migration of the table is aborted.

Historical data is not warehoused

Check the following Warehouse Proxy agent logs for errors that indicate why historical data is not warehoused:

- Windows Event Log (all critical errors)
- WHProxy Agent RAS1 Log.
- Operations Log

The Warehouse Proxy agent contains an audit trail for each export written to the warehouse database. You can also check the database table called WAREHOUSELOG as it contains the same information as the logs.

Historical data for logs is incorrect

If there are duplicate or missing rows in a table, incorrect historical data is collected for logs, such as managed system or situation status. Correct the incorrect rows to ensure reliable logs.

Warehouse Proxy Agent or Summarization and Pruning Agent fails due to DB2 transaction log full

If the DB2 transaction log is not large enough and fills, operations performed by the Warehouse Proxy Agent or Summarization and Pruning Agent will fail. If this happens you will see a message like the following in the Warehouse Proxy Agent log file (*hostname*_hd_java_nnnnnnnnnn.log) or the Summarization and Pruning Agent log file (*hostname*_sy_java_nnnnnnnnnn.log):

```
com.ibm.db2.jcc.a.SqlException: DB2 SQL error: SQLCODE: -964, SQLSTATE: 57011,
SQLERRMC: null
```

Increase the DB2 transaction log size. See the DB2 manuals for altering the LOGFILSIZ, LOGPRIMARY, and LOGSECOND parameters within DB2.

Too much historical data is collected

The Summarization and Pruning agent is responsible for generating and storing summarized data, and pruning the data based on information that is stored in the Tivoli data warehouse. The data in the Tivoli data warehouse is a historical record of activity and conditions in your enterprise. The size of summarization data that is collected depends on the following criteria:

- The number of agents collecting data
- The number of table collected per agent
- The size of the table (number and size of columns)
- The collection interval (for example 5, 10, 15 or minutes)

Pruning data is deleting old data automatically, rather than manually. To reduce the data that is collected, limit the size of your database tables by regularly pruning old data from the Tivoli data warehouse. If you installed the Summarization and Pruning agent, your configuration settings are set to default values. You can view the current values in the History Collection Configuration window. Refer to "Changing configuration settings using the History Collection Configuration window in the Tivoli Enterprise Portal" in the *IBM Tivoli Monitoring Administrator's Guide* for instructions.

If you need to install the Summarization and Pruning agent, see the *IBM Tivoli Monitoring Installation and Setup Guide*. There you can find information for environment-wide capacity planning. You can find agent-specific capacity planning information in the user guide for the specific monitoring agent.

Warehouse Proxy agent failed to export data

The ODBC connection enables the Warehouse Proxy agent to export data to the warehouse database. The WAREHOUSELOG table lets you know how many exports succeeded and how many failed because of an ODBC error or a TIMEOUT issue. See the *IBM Tivoli Monitoring Installation and Setup Guide* for more information about the WAREHOUSELOG table and configuring the Warehouse Proxy agent.

There are ORACLE or DB2 errors in the khdras1.log file

The following errors can occur in the khdras1.log if the globalization system environment variable is not set correctly:

ORACLE error: [Oracle][ODBC][Ora]ORA-01461: can bind a LONG value only for insert into a LONG column

1. Set the environment variable NLS_LANG=AMERICAN_AMERICA.AL32UTF8 as a system environment on the Windows computer on which the Warehouse Proxy is installed.
2. Restart the Windows computer so that the Warehouse Proxy windows service recognizes the change.

DB2 error: SQL0302N The value of a host variable in the EXECUTE or OPEN statement is too large for its corresponding use. SQLSTATE=22003 sqlstate = 22003

1. Set the environment variable DB2CODEPAGE=1208 as a system environment on the Windows computer where the Warehouse Proxy is installed.
2. Restart the Windows computer so that the Warehouse Proxy windows service recognizes the change.

SQL0552N "ITMUSER" does not have the privilege to perform operation ″CREATE BUFFERPOOL″ SQLSTATE=42502

If the Warehouse database user does not have the correct permission, the following error can occur:

```
(42ED71FA.0000-E4C:khdxbase.cpp,250,"setError")
Error 20/3/-552(FFFFFDD8)/0 executing SQLExecute
(42ED71FA.0001-E4C:khdxbase.cpp,266,"setError")
Error "[IBM][CLI Driver][DB2/NT] SQL0552N "ITMUSER" does not have
the privilege to perform operation "CREATE BUFFERPOOL" SQLSTATE=42502
```

When you configure a DB2 Warehouse Proxy connection from the Manage Tivoli Enterprise Monitoring Services utility using the **Configure DB2 Datasource for Warehouse** window, the user ID the Warehouse Proxy uses to connect to the warehouse database must have SYSADM permission. SYSADM permission is required to create an 8K Tablespace and Bufferpool.

Windows

If the database is on Windows, the user must be a member of the local Administrators group.

UNIX-based system

If the database is on Linux or UNIX user must belong to the SYSADM group.

1. Log in as the DB2 instance owner (usually ″su - db2inst1″),
2. Run the following command to determine the group that the UNIX-based system user must belong.

```
db2 get dbm cfg | grep SYSADM
```

Chapter 11. IBM Tivoli Enterprise Console event synchronization troubleshooting

This section provides descriptions of and resolutions for problems you might experience with IBM Tivoli Enterprise Console event synchronization, including the forwarding situations and the Rules Check Utility.

Preliminary IBM Tivoli Enterprise Console event synchronization problem determination

Before troubleshooting a problem with IBM Tivoli Enterprise Console event synchronization, review the following list of fundamental IBM Tivoli Enterprise Console event synchronization problem determination tasks:

- Before you install the IBM Tivoli Enterprise Console event synchronization on Windows and import event forwarding functionality into an existing rule base with an absolute path, you must copy setupwin32.exe to the local drive on which the rule base resides to import the IBM Tivoli Enterprise Console event synchronization functionality into that rule base. Launch the copied setupwin32.exe to start IBM Tivoli Enterprise Console event synchronization installation.
- Use the IBM Tivoli Enterprise Console Java Console to make any configuration changes to consoles and associated operator and event groups.
- Connect to a different IBM Tivoli Enterprise Console server using the embedded viewer:
  - From the desktop client:
    1. Log off the Tivoli Enterprise Portal.
    2. Log on the Tivoli Enterprise Portal.
    3. Log into a different IBM Tivoli Enterprise Console server.
  - From the browser client:

    Recycle the browser.
- For a listing of product messages, refer to the document *IBM Tivoli Monitoring Messages*.

T/EC ITM Synchronization Tasks

By default, all situation events that originate from a recycled Tivoli Enterprise Monitoring Server are CLOSED. As a result, you do not need to run any of the three tasks that reside in the T/EC ITM Synchronization Task Library.

Changing the TCP/IP timeout setting on your event server

If the Situation Update Forwarder cannot reach a monitoring server to send an update, depending on the TCP/IP settings for the computer where your event server is running, it could be up to 15 minutes before the Situation Update Forwarder tries to connect to the monitoring server again. This might occur if your event server is running on an AIX, Solaris, or HP-UX computer.

Use the following steps to change the TCP/IP timeout for your computer.

On AIX, run the following command:

```
no -o tcp_keepinit=<timeout_value>
```

where <*timeout_value*> is the length of the timeout period, in half seconds. To configure a timeout of 30 seconds, set the <*timeout_value*> value to 60.

On Solaris and HP-UX, run the following command:

```
ndd -set /dev/tcp tcp_ip_abort_cinterval <timeout_value>
```

where <*timeout_value*> is the length of the timeout period, in milliseconds. To configure a timeout of 30 seconds, set the <*timeout_value*> value to 30000.

Situation continues to send events even after it is stopped or sends events for undefined processes

You create a situation and set a take action to send email when the situation occurs. The situation checks for specified missing processes ''/usr/*/sshd','/usr/*/syslogd','/usr/*/ntpd','/usr/*/xinetd','/usr/*/crond'. The situation continues to send email even after the situation has been stopped, the take action has been removed and applied, and the situation has been deleted. You try to recycle the agent, recreate the situation and delete, but you still receive the emails.

Also, the situation event console only reports on the defined situations as expected, but the take action commands send events for several processes, rather than reporting only those that are defined.

The primary remote Tivoli Enterprise Monitoring Server probably has a required but missing C++ Runtime.

IBM Tivoli Enterprise Console task timeout expires while in process

Some tasks like "Close_All_Reset_Events" can require up to an hour to complete, depending on the number of events processed. The task continues processing in the background if the timeout expires, however, the task output does not display. You do not need to run the task again. You can increase the task timeout value on task panel to prevent the task from timing out.

Situations with assigned severity not taking the user-assigned severity from the Tivoli Enterprise Portal

This issue only occurs in situations that were defined in fix packs prior to IBM Tivoli Monitoring Fix Pack 5. You set the Tivoli Enterprise Portal severity, but there was a SEV= parm in the SITINFO that took precedence over the "assign tec severity by situation name suffix" rule in the code. Complete one of the following options to correct this problem:

- Code an entry in the tecserver.txt file to explicitly assign the correct Tivoli Enterprise Console severity for the situation.
- Manually update the situation definition to either remove the SEV= parm from the SITINFO column or remove the SEV= parm.

Situations are not forwarded from Tivoli Enterprise Monitoring Server to the Tivoli Enterprise Console server

Table 24 on page 129 provides troubleshooting information for when Tivoli Enterprise Monitoring Server does not forward situations to the Tivoli Enterprise Console server:

Table 24. Troubleshooting when situations are not forwarded

Problem	Resolution
The IBM Tivoli Enterprise Console Event Integration Facility is not enabled or configured correctly.	See "Configuring IBM Tivoli Enterprise Console integration" in the *IBM Tivoli Monitoring Administrator's Guide*
The correct values are not specified for connection to the Tivoli Enterprise Console server in the om_tec.config file.	Edit the following parameters in the om_tec.config to specify the correct information for connection to the Tivoli Enterprise Console server: **ServerLocation** Specifies the host name or IP address of IBM Tivoli Enterprise Console server. **ServerPort** Specifies the IBM Tivoli Enterprise Console server listening port. Specify 0 if the IBM Tivoli Enterprise Console server uses port mapper. • On a Windows system: 1. Click **Start** > **Programs** > **IBM Tivoli Monitoring** > **Manage Tivoli Enterprise Monitoring Services**. 2. Right-click Tivoli Enterprise Monitoring Server >**Advanced**. 3. Select **Edit EIF configuration** to open the om_tec.config file in Notepad. 4. Specify the correct parameters and save the file. • On a UNIX-based systems system: 1. `cd/opt/IBM/ITM/tables/`*`hubname`*`/TECLIB` where: *hubname* Specifies the name of the hub monitoring server. 2. Open the om_tec.config file in a text editor. 3. Specify the correct parameters and save the file. where: *hubname* Specifies the name of the hub monitoring server.

Table 24. Troubleshooting when situations are not forwarded (continued)

Problem	Resolution
Events are filtered out based on the parameter values in the om_tec.config file.	Edit the om_tec.config file in the following locations: • On a windows system: c:\ibm\itm\cms\TECLIB. • On UNIX-based systems: /opt/IBM/ITM/tableshostname/TECLIB. where: /opt/IBM/ITM is the default location where the Tivoli Enterprise Monitoring Server is installed and the host name is the value supplied during the Tivoli Enterprise Monitoring Server configuration. • On a Windows system: 1. Click **Start** > **Programs** > **IBM Tivoli Monitoring** > **Manage Tivoli Enterprise Monitoring Services**. 2. Right-click Tivoli Enterprise Monitoring Server >**Advanced**. 3. Select **Edit EIF configuration** to open the om_tec.config file in Notepad. 4. Examine the `FilterMode:` and `Filter:` statements. 5. Specify the appropriate filter statements. – See the *IBM Tivoli Monitoring Administrator's Guide* for the supported EIF configuration parameters – Also see the *Tivoli Event Integration Facility, Version 3.9* reference manual SC32-1241 for more details. • On a UNIX-based systems system: 1. `cd /opt/IBM/ITM/tables/`*`hubname`*`/TECLIB` where: *hubname* Specifies the name of the hub monitoring server. 2. Open the om_tec.config file in a text editor. 3. Examine the `FilterMode:` and `Filter:` statements. 4. Specify the appropriate filter statements. – See the *IBM Tivoli Monitoring Administrator's Guide* for the supported EIF configuration parameters – Also see the *Tivoli Event Integration Facility, Version 3.9* reference manual SC32-1241 for more details.

Table 24. Troubleshooting when situations are not forwarded (continued)

Problem	Resolution
Events are cached because the target IBM Tivoli Enterprise Console server is not currently running.	1. Check the cache files to determine if events are cached on the Tivoli Enterprise Monitoring Server. The cache files are located in the TECLIB directory on Tivoli Enterprise Monitoring Server: • Windows: /IBM/ITM/cms/TECLIB • UNIX-based systems: /opt/IBM/ITM/tables/*hubname*/TECLIB where: *hubname* Specifies the name of the hub monitoring server. 2. Run the `wstartesvr` command to restart the IBM Tivoli Enterprise Console server from a Tivoli sourced environment. 3. Run the `wstatesvr [-S server]` command on the IBM Tivoli Enterprise Console server to check the status of an event server. where: **-S server** Specifies the name of an event server in name registry format. The default server is the local event server. To indicate a remote server, specify @EventServer#tmr, where *tmr* is the name of a Tivoli region. Refer to the IBM Tivoli Enterprise Console documentation for more information about checking the status of the IBM Tivoli Enterprise Console server.

See "Trace logging" on page 5 for more information about tracing for IBM Tivoli Enterprise Console forwarding.

Verifying that events are being received by Tivoli Enterprise Console

On the Tivoli Enterprise Monitoring Server, set this UNIT trace level:

```
ERROR (UNIT:kfaot ALL)
```

This will trace the communication between the Tivoli Enterprise Monitoring Server and Tivoli Enterprise Console. The *_ms_* logs from the Tivoli Enterprise Monitoring Server show this traffic. You can then verify that events are being received by Tivoli Enterprise Console by looking at the wtdumprl output. If there are no "PARSE FAILED" messages and the Tivoli Enterprise Console is working correctly, the events should be processed and show in the Tivoli Enterprise Console.

Enabling tracing of events from the Tivoli Enterprise Console to the Tivoli Enterprise Monitoring Server

Complete the following steps to enable tracing of events:

1. Rule tracing can be set up for the omegamon.rls. In the OMEGAMON rule trace file verify that the exec_program predicate is called in the rules trace to indicate that the rule set invoked situpdate.sh. A line like this will be seen in the log:

```
[357]                          call    exec_program(0x209372e8,
'OM_TEC/bin/situpdate.sh','-size %s
-num %s -path %s %s',['50000','10','"/space/Tivoli_
4141/var/TME/TEC/OM_TEC/persistence"',
       '/tmp/SUF0.tmp'],NO)
```

2. Tracing can be set up within the situpdate.sh running by editing the script (the situpdate.sh script is located at $BINDIR/TME/TEC/OM_TEC/bin). Change the debugVerbose=`expr 0` to debugVerbose=`expr 1` .

   The files are then /tmp/situpdate.log and /tmp/situpdate.trace.
3. The tracing can be increased on the Situation Update Forwarder, by editing the sitconfig.sh script to change the logLevel in the configuration file to low, med, or verbose. The logfiles will be /tmp/itmsynch/logs/synch_trace.log and synch_msg.log.
4. Verify that the situpdate.log log file for the short-running script indicates events are being written to the cache file, such as:

   ```
   Sat Sep  2 15:36:03 GMT 2006 : 51600 : 1 events from /tmp/SUF1.tmp written
   to cache file /space/Tivoli_4141/var/TME/TEC/OM_TEC/persistence
   /situpdate_1157135641
   ```
5. Verify that the Situation Update Forwarder is running.
6. Verify from the SUF log synch_trace.log file that it is reading from the cache files, such as:

   ```
   2006.09.02 17:36:05.876+02:00 com.tivoli.candlenet.SituationUpdateForwarder
    readCacheLine IBM Tivoli Monitoring  TEC Synchronization
   ```
7. Verify that the SUF log synch_trace.log file contains successful send event messages:

   ```
   2006.09.02 17:36:06.311+02:00 com.tivoli.candlenet.SituationUpdateForwarder
    pollCacheFile IBM Tivoli Monitoring  TEC Synchronization
   Machine_Name IP Successfully sent event:
   ```
8. If there are no successful event sent messages, check the synch_trace.log for exceptions.
9. If there is no indication that the Situation Update Forwarder attempted to send the event, ensure the Situation Update Forwarder is running and verify that the Tivoli Enterprise Monitoring Server of the event (indicated by sv=*TEMS_server*:*port* in the cache file or the cms_hostname attribute of the TEC event) matches any of the Tivoli Enterprise Monitoring Servers defined in the situser.conf configuration file.

Situation Events have an UNKNOWN severity in the Tivoli Enterprise Console

If a situation was not mapped to a specific severity in the tecserver.txt file in TECLIB directory, then IBM Tivoli Enterprise Console event synchronization forwards these situation events to Tivoli Enterprise Console with an UNKNOWN severity.

You can determine the event severity by checking the following:

- The situation SITINFO field.
- The severity keyword if the situation name was defined in tecserver.txt.

See the section "Defining event severities from forwarded IBM Tivoli Monitoring situations" in the *IBM Tivoli Monitoring Administrator's Guide* .

Forwarded IBM Tivoli Enterprise Console events display with the PARSING_FAILED status in the IBM Tivoli Enterprise Console reception log

The following table lists possible causes and resolutions for the PARSING_FAILED status:

Table 25. Forwarded events display with the PARSING_FAILED status

Problem	Resolution
The IBM Tivoli Enterprise Console event synchronization was not installed or was not installed correctly.	Reinstall the IBM Tivoli Enterprise Console event synchronization functionality. See the *IBM Tivoli Monitoring Installation and Setup Guide* for instructions.
The expected rule base was not loaded.	Actively load the expected rule base. You can run the following command from the IBM Tivoli Enterprise Console event server to load a rule base: `wrb -loadrb rule_base` where: **rule_base** The name of the rule base to load. This makes rule_base the currently active rule base on the event server. The rule base must already be defined at the server, and any event class specification files and rule files in the directory must be valid. The loaded rule base replaces all event class specifications and rules currently defined at the server. Only one rule base can be active at a time. Loading another rule base overwrites the currently active rule base. **Note:** **Notes:** 1. If you do not compile the rule base before attempting to load it, you get an error message. 2. You must stop and restart the TEC server for changes to the rule base to be active. Use the following commands: • wstopesvr [-S server] • wstartesvr [-S server] See the IBM Tivoli Enterprise Console documentation for more information about loading rule bases, including the *IBM Tivoli Enterprise Console Command and Task Reference*.

Table 25. Forwarded events display with the PARSING_FAILED status (continued)

Problem	Resolution

There are missing BAROC files that must be imported to support the IBM Tivoli Monitoring V6.1 events.	The BAROC files are located in the TECLIB directories on Tivoli Enterprise Monitoring Server:
	• Windows:
	/IBM/ITM/cms/TECLIB
	• UNIX-based systems:
	/opt/IBM/ITM/tables/*hubname*/TECLIB
	where:
	hubname
	Specifies the name of the hub server.
	
	You can run the following command from the IBM Tivoli Enterprise Console event server to import a BAROC file (a file of event class specifications into a rule base), appending it to the end of the class specifications unless otherwise specified with arguments:
	`wrb -imprbclass class_file [-encoding encoding ]`
	`[-before class_file |`
	`-after class_file] [-force] rule_base`
	
	where:
	class_file
	Specifies the name of the class file to import. This must be a path to BAROC file.
	rule_base
	The name of the rule base to receive the imported class set.
	-after class_file
	Specifies the name of the class file after which the imported class file is to be placed.
	-before class_file
	Specifies the name of the class file before which the imported class file is to be placed.
	-encoding encoding
	Specifies the character encoding of the class file. If this option is not specified, a class file being imported into a rule base is opened in UTF-8 character encoding.
	-force Imports the class file even if it can cause rule base inconsistency.
	An error message is displayed if the class set file contains syntax errors, references to nonexistent event classes or enumerations, or if duplicate event classes or enumeration are defined. If the classes in a class file are derived from classes in another file, import the class files into the rule base in an order that preserves the inheritance structure. For example, if class file B.baroc contains classes that are derived from class file A.baroc, you must import class file A.baroc first.
	
	For any changes you make to the rule base to take affect you must complete the following steps:
	• Recompile the rule base
	• Load the rule base
	• Stop the Tivoli Enterprise Console server
	• Restart the Tivoli Enterprise Console server
	
	Continued on the next page.

Table 25. Forwarded events display with the PARSING_FAILED status (continued)

Problem	Resolution
There are missing BAROC files that must be imported to support the IBM Tivoli Monitoring V6.1 events. (Continued)	Refer to the *IBM Tivoli Monitoring Administrator's Guide* for information about changing the omegamon.rls file. See the *IBM Tivoli Enterprise Console Command and Task Reference, V3.9.0* for more information about importing class files into rule bases.
Parsing errors reported in Tivoli Enterprise Console server for ITM_ManagedSystem events.	The ITM_ManagedSystem event class is defined in the kib.baroc file. The kib.baroc file is not included in the active rule base. Copy the kib.baroc file from the Tivoli Enterprise Monitoring Server from CandleHome/cms/TECLIB and compile it into the current rule base.

The IBM Tivoli Enterprise Console is disabled

The Tivoli Enterprise Console relies on the Tivoli Management Framework for common services, including communications. If the console loses contact with Tivoli Management Framework, no new events are added to the view. Do the following to enable event reporting:

1. Reestablish contact between Tivoli Enterprise Console and IBM Tivoli Monitoring.
2. Log off the Tivoli Enterprise Portal.

   Note: If you use Tivoli Enterprise Portal browser client, you must also close and restart the Web browser.
3. Log in to the Tivoli Enterprise Portal again to enable the Tivoli Enterprise Console view to resume event reporting.

The IBM Tivoli Enterprise Console does not indicate that a situation event was acknowledged or closed

Table 26. Situation event was not acknowledged or closed

Problem	Resolution
The omegamon.rls rule set was not imported in the currently loaded rule base.	Run the following commands from the IBM Tivoli Enterprise Console event server to import a rule set into a rule base: 1. `wrb -imprbrule rule_file [-encoding encoding ] [-force] rule_base` where: **rule_base** The name of the rule base in which the rule pack lives. **rule_file** The file name of the rule set to import to the rule base. This must be a path to a rule set file (with a file extension of .rls). **-encoding encoding** Specifies the character encoding of the class file. If this option is not specified, a class file being imported into a rule base is opened in UTF-8 character encoding. **-force** Adds the rule set to the rule base even if a rule references a nonexistent event class 2. `wrb -imptgtrule {rule_set | rule_pack} [{-before | -after} {rule_set | rule_pack}] target rule_base` where: **rule_base** The name of the rule base that contains the rule base target. **rule_pack** The name of the rule pack to import. The rule pack must have been imported into the rule base first. **rule_set** The name of the rule set to import. The rule set must have been imported into the rule base first. **target** The name of the rule base target to receive the imported rule set or rule pack. You must have first created the target with the -crttarget command option. **-after rule_set | rule_pack** Specifies the name of the rule set or rule pack after which the imported rule set or rule pack should be located. **-before rule_set | rule_pack** Specifies the name of the rule set or rule pack before which the imported rule set or rule pack should be located. For any changes you make to the rule base to take affect you must complete the following steps: • Recompile the rule base • Load the rule base • Stop the Tivoli Enterprise Console server • Restart the Tivoli Enterprise Console server Refer to the *IBM Tivoli Monitoring Administrator's Guide* for information about changing the omegamon.rls file.

Table 26. Situation event was not acknowledged or closed (continued)

Problem	Resolution
The events are not cached in the expected location.	The location of the cache file is specified during installation. The default locations are as follows: • On Windows: C:\tmp\TME\TEC\OM_TEC\persistence • On UNIX-based systems: /var/TME/TEC/OM_TEC/persistence The value of *fileLocation* is defined in the active configuration file as indicated by the situpdate.properties file in the following locations: • On Windows: C:\Program Files\TME\TEC\OM_TEC\etc • On UNIX-based systems :/etc/TME/TEC/OM_TEC You can edit the location of the cache file by running the sitconfig.sh script. Refer to the *IBM Tivoli Monitoring Administrator's Guide* for sitconfig.sh script usage.

The IBM Tivoli Enterprise Console Situation Update Forwarder is not currently running.	To use event forwarding, you must start the Situation Update Forwarder. This process is started automatically when the event server starts. To start the process manually, change to the *$BINDIR*/TME/TEC/OM_TEC/bin directory and run the following command:
	On Windows:
	`startSUF.cmd`
	On UNIX-based systems:
	`startSUF.sh`
	To stop the process, run the `stopSUF.sh` command (`stopSUF.cmd` on Windows) in the same directory.
	Note: If the Situation Update Forwarder process stops abnormally, run the `stopSUF.sh` (`stopSUF.cmd` on Windows) command before restarting the process.

The correct Tivoli Enterprise Monitoring Server information is not defined for the updated events in the cms_hostname attribute.	1. Ensure the event cms_hostname attribute includes a fully qualified host name for the computer where the monitoring server is running. The monitoring server hostname must match the hostname recorded in events coming from this monitoring server. 2. Ensure user validation is enabled on Tivoli Enterprise Monitoring Server and the correct userid and password information is specified for the Tivoli Enterprise Monitoring Server. 3. Run the sitconfsvruser.sh script to update the configuration for the Tivoli Enterprise Monitoring Server. Refer to the *IBM Tivoli Monitoring Administrator's Guide* for more information.
There is a communication problem between IBM Tivoli Enterprise Console server and Tivoli Enterprise Monitoring Server.	Run the `test.sh` command on UNIX based systems or the `test.cmd` on Windows to determine if there is a communication problem between IBM Tivoli Enterprise Console server and Tivoli Enterprise Monitoring Server. Refer to Chapter 4, "Connectivity troubleshooting," on page 63 for additional information about solving connectivity problems.
The expected server ports 3661 and 1920 are not currently open on the Tivoli Enterprise Monitoring Server.	Ports 3661 and 1920 must be available. Run the `test.sh` command on UNIX based systems or the `test.cmd` on Windows to determine if there is a communication problem between IBM Tivoli Enterprise Console server and Tivoli Enterprise Monitoring Server. Refer to Chapter 4, "Connectivity troubleshooting," on page 63 for additional information about solving connectivity problems.

Table 26. Situation event was not acknowledged or closed (continued)

Problem	Resolution
There a firewall between Tivoli Enterprise Monitoring Server and Tivoli Enterprise Console that is blocking communication over certain ports.	You might need to include the IP addresses of other IBM Tivoli Monitoring components in the access control for the firewall. Refer to Chapter 4, “Connectivity troubleshooting,” on page 63 for additional information about solving connectivity problems.

TEC_ITM_OM_Situation_Sync_Error events occur

TEC_ITM_OM_Situation_Sync_Error events occur if there is a Tivoli Enterprise Console server communication problem or if you need to increase the rules cache.

Table 27. Reasons for the TEC_ITM_OM_Situation_Sync_Error event

Problem	Resolution
IOException is generated. There is no connectivity with SOAP.	Verify that the network connections are up and running, the SOAP server is running and receiving requests, and the ports 3661 and 1920 on the Tivoli Enterprise Monitoring Server machine are open. Use the following steps to determine why the error occurred: 1. Ensure that the userid and password configured for the Tivoli Enterprise Monitoring Server serverid on the event server during installation is correct. Run the sitconfsvruser.sh script to update the configuration for the Tivoli Enterprise Monitoring Server. Refer to the *IBM Tivoli Monitoring Administrator's Guide* for more information. 2. Run the `test.sh` command on UNIX based systems or the `test.cmd` on Windows to determine if there is a communication problem between IBM Tivoli Enterprise Console server and Tivoli Enterprise Monitoring Server. 3. If the SOAP Server is running and receiving requests, initiate a CT_GET request for the SOAP server from the Web client. See the "Tivoli Enterprise Monitoring Web services" section in the *IBM Tivoli Monitoring Administrator's Guide* for more information.
Logon Validation Failure is returned by the SOAP server.	
Fatal Error is returned by the SOAP server.	
The connection to the SOAP server repeatedly times out because of broken communication, network outage or the SOAP server is down.	
The event message indicates reset, resurface, or acknowledge action failed. The original event was not in the Tivoli Enterprise Console rules cache.	Increase the size of the rules cache using the Tivoli desktop or the **wsetesvrcfg** command. Refer to the *IBM Tivoli Enterprise Console Command and Task Reference* for more information and the "Configuring Tivoli Enterprise Console integration" section in the *IBM Tivoli Monitoring Administrator's Guide* for more information.

Receiving error message when running the Rule Check Utility with the -cd and -rd options

Ensure the class definitions in the TEC_CLASSES directory that you specified with the -cd option include the supporting classes for all rule sets defined in the rule base directory specified by the by -rd option.

Table 28. Rule Base directory and BAROC event class definition directory

Option	Description
-rd	Used to specify a directory containing the rulesets (*.rls) to be checked. If not provided, the TEC_RULES subdirectory for the actively loaded rule base is used by default.

Table 28. Rule Base directory and BAROC event class definition directory (continued)

Option	Description
-cd	Used to specify a directory containing the BAROC event class definitions files (*.baroc) to be used as input. If not provided the TEC_CLASSES subdirectory for the actively loaded rule base is used by default.

The following lists the syntax for the Rule Check Utility:

wrules_check {[-h] | [-v] | [-rd rules_directory] [-cd baroc_classes_directory] {class[,attribute,attribute...] [:classN,attributeN,attributeN] | [-f class_file]} [-of output_file]}

For more information about the Rules Check Utility, refer to the *IBM Tivoli Monitoring Administrator's Guide*.

Expected impacted rules are not displayed when entering multiple event classes with class attributes

Ensure you input ran the Rules Check Utility command with the correct options:

wrules_check {[-h] | [-v] | [-rd rules_directory] [-cd baroc_classes_directory] {class[,attribute,attribute...] [:classN,attributeN,attributeN] | [-f class_file]} [-of output_file]}

For more information about the Rules Check Utility, refer to the *Tivoli Enterprise Portal Administrator's Guide*.

The wrules_check command fails

When you run the wrules_check without specifying the –cd and –rd options, you must have permission to run the wrb subcommands. Run the wrules_check command with the –cd and –rd options or refer to the IBM Tivoli Enterprise ConsoleIBM Tivoli Enterprise Console documentation for more information about running the wrb subcommands.

The following lists the syntax for the Rule Check Utility:

wrules_check {[-h] | [-v] | [-rd rules_directory] [-cd baroc_classes_directory] {class[,attribute,attribute...][:classN,attributeN,attributeN] | [-f class_file]} [-of output_file]}

Table 29. Rule Base directory and BAROC event class definition directory

Option	Description
-rd	Used to specify a directory containing the rulesets (*.rls) to be checked. If not provided, the TEC_RULES subdirectory for the actively loaded rule base is used by default.
-cd	Used to specify a directory containing the BAROC event class definitions files (*.baroc) to be used as input. If not provided the TEC_CLASSES subdirectory for the actively loaded rule base is used by default.

For more information about the Rules Check Utility, refer to the *Tivoli Enterprise Portal Administrator's Guide*.

The NetView menus are unavailable

Ensure the NetView® console or Web console are installed on the Tivoli Enterprise Portal machine and that the NVWC_HOME or NV_DRIVE variables are set correctly.

Errors occur during installation of IBM Tivoli Enterprise Console event synchronization

When installation is complete, the results are written to the itm_tec_event_sync_install.log file located in the following directories:

- Windows:

  The itm_tec_event_sync_install.log file is created in the directory defined by the %TEMP% environment variable. To determine where this directory is defined for the current command line window, run the following command:

  ```
  echo %TEMP%
  ```

- UNIX-based systems:

  The itm_tec_event_sync_install.log file is always created in the /tmp directory.

The following error is harmless and there is currently no resolution:

```
One or more errors occured during the replacement of files (tecSyncAllFile1)
with files (tecSyncAllFile1).
Refer to install log for more details.
One or more errors occured during the replacement of files (tecSyncAllFile2)
with files (tecSyncAllFile)1.
Refer to install log for more details.
One or more errors occured during the replacement of files (tecSyncAllFile3)
with files (tecSyncAllFile1).
Refer to install log for more details.
.
.
.
```

The IBM Tivoli Enterprise Console does not display in a workspace after logging off and logging on the Tivoli Enterprise Portal

Recycle the Tivoli Enterprise Portal browser so the Tivoli Enterprise Portal can display the IBM Tivoli Enterprise Console in a workspace.

The Tivoli Enterprise Portal stops when attempting to launch the IBM Tivoli Enterprise Console behind a router

After a two-minute timeout, the following message might display when you try to add a IBM Tivoli Enterprise Console to a Tivoli Enterprise Portal client that is behind a router:

```
The RDBMS cannot be reached.
```

During the timeout period the Tivoli Enterprise Portal client seems hung. To avoid this problem, the Tivoli Management Framework Administrator must enable communications based on the host name rather than the IP address. Use the following steps to prevent this problem:

1. On the IBM Tivoli Enterprise Console Server on which you are logged in, set the `single_port_bdt` and `set_iom_by_name` Tivoli Management Framework settings to `TRUE` by running the following commands on the IBM Tivoli Enterprise Console Server:

```
odadmin single_port_bdt TRUE all
odadmin set_iom_by_name TRUE all
```

2. Run the following command to recycle the object dispatchers:

```
odadmin reexec all
```

Refer to the *Tivoli Management Framework Reference Manual* for more information about the odadmin command.

The error 'ECO2029E: Failed to connect to http://servername:port_number/cgi-bin/tec_help.pl.' occurs after clicking the Information button on the IBM Tivoli Enterprise Console

Error ECO2029E occurs because the spider Web Server provided with the IBM Tivoli Enterprise Console Server does not automatically start. To start the spider Web Server, run the `wstarthttpd` command on the IBM Tivoli Enterprise Console that you are logged in to. After the `wstarthttpd` command completes, the information button works. Refer to the *IBM Tivoli Enterprise Console 3.9 Installation Guide* for more information about the `wstarthttpd` command.

Situations return to acknowledged

The default action of the omegamon.rls rule set is to reject acknowledgement expirations that are received from the Tivoli Enterprise Monitoring Server, and to then acknowledge the situation again on the Tivoli Enterprise Monitoring Server. This action of the omegamon.rls rule set might be changed to accept acknowledgement expirations from the Tivoli Enterprise Monitoring Server, and therefore leave the situation open in the Tivoli Enterprise Monitoring Server. Refer to the *IBM Tivoli Monitoring Administrator's Guide* for information on changing parameters of the omegamon.rls rule set.

tacmd refreshTECinfo -t all shows no results on console

The Tivoli Enterprise Monitoring Server facility used (DS START command) to trigger the refresh of the EIF info does not give a return code. So, it is not possible to give feedback as to the success or failure of the operation back to the CLI. For a result of the refresh, look in the Tivoli Enterprise Monitoring Server log or the Universal Message Console on the Tivoli Enterprise Portal.

Some situation states are missing

In IBM Tivoli Monitoring v6.2, there are 4 additional states that you can assign a situation to:

- Unknown
- Harmless
- Minor
- Fatal

Unless your agent is a IBM Tivoli Monitoring v6.2 agent, you will not see these 4 additional states.

Pre-existing situations do not display in the Tivoli Enterprise Portal after performing an initial installation of IBM Tivoli Monitoring v6.2

When installing a single server AIX system, the situations were not seeded properly. After performing an initial install and running the ″itmcmd support″ command, there were no situations displayed in the Tivoli Enterprise Portal. Reinstalling the Tivoli Enterprise Monitoring Server and the Tivoli Enterprise Portal Server Support and re-running the ″itmcmd support″ command, only sees partial seeding of the situations. When reviewing the log itmaix8_ci_39128.log, there are many errors similar to the one below:

```
/*******************************************/
  /********** Create Request Was Done **********/
  /*******************************************/
   UPDATE O4SRV.TOBJACCL
     SET LSTRELEASE = "",
         LSTUSRPRF = "IBM"
     WHERE NODEL = "*NT_SYSTEM"
        AND OBJCLASS = "5140"
        AND OBJNAME = "NT_Available_Bytes_Critical";
   /*******************************************/
  /********** Create Request Was Done **********/
  /*******************************************/
   SQL1_OpenRequest status = 79
```

If you have situations before you seed, this can cause the installer to run the upgrade sql rather than the sql for a fresh seeding.

Appendix A. IBM Tivoli Monitoring processes

The following table lists the processes according to operating system platform and IBM Tivoli Monitoring component.

Table 30. IBM Tivoli Monitoring processes by operating system

Component	Windows	UNIX and Linux-based systems
Tivoli Enterprise Monitoring Server	cms.exe kdsmain.exe	cms kdsmain
Tivoli Enterprise Portal Server	KfwServices.exe	KfwServices
UNIX agent	N/A	kuxagent
Linux agent	N/A	klzagent
Windows agent	kntcma.exe	N/A
Universal agent	kuma610.exe	kuma610
Log Alert agent	N/A	kulagent
Warehouse proxy agent	khdxprto.exe	khdxprtj
Summarization and Pruning Agent	ksy610.exe	ksy610
Eclipse help server	kkfhelpsvr.exe	kkfstart.sh for the java process, search for /kf/ in the process name

Appendix B. Environment variables

This appendix lists IBM Tivoli Monitoring environment variables that you can customize.

Common environment variables

The following table lists the environment variables that are common to all components:

Table 31. Common environment variables

Variable	Value type	Useful for . . .
KDC_DEBUG	Y or N	Default is N. Diagnosing communications or connectivity problems between the Tivoli Enterprise Portal Server to the Tivoli Enterprise Monitoring Server.
KDH_DEBUG	Y or N	Default is N. Diagnosing connectivity problem with integrated web server.
KDH_SERVICEPOINT		Determining the service point.
KBB_RAS1	Trace specification string	See each specific environment variable section below.
KBB_RAS1LOG		Determining the count limit and the max files settings.

Tivoli Enterprise Portal Server environment variables

The following table lists Tivoli Enterprise Portal Server environment variables.

Table 32. Tivoli Enterprise Portal Server environment variables

Variable	Value type	Useful for . . .
DSUSER1	Y or N	Part of a set of 9 variables DSUSER1...DSUSER9 that you can set using the tacmd configureportalserver command. For more information, see the *IBM Tivoli Monitoring Administrator's Guide*.

Table 32. Tivoli Enterprise Portal Server environment variables (continued)

Variable	Value type	Useful for . . .
KBB_RAS1	Trace specification string	Default tracing level: KBB_RAS1=ERROR Diagnosing client request problems: KBB_RAS1=ERROR (UNIT:ctsql IN ER) (UNIT:ctdata IN ER) Diagnosing client or Tivoli Enterprise Monitoring Server interaction problems: KBB_RAS1=ERROR (UNIT:ctsql IN ER) (UNIT:ctdata IN ER) (UNIT:ctcmw IN ER) (UNIT:kv4 IN ER) Diagnosing SQL generation problems: KBB_RAS1=ERROR (UNIT:ctsql IN ER) (UNIT:ctdata IN ER) (UNIT:ctreport ALL) Diagnosing login problems: KBB_RAS1=ERROR (UNIT:ctsql IN ER) (UNIT:ctdata IN ER) (UNIT:ctauth ALL)
KFW_CMW_SPECIAL_HUB_ ENTERPRISE=N	Y or N	Default is N. When set to Y, associates situations to the Tivoli Enterprise Portal Server.
KFW_DATABUS_INPUT_ TRACE_IGNORE_HEARTBEAT	Y or N	Default is N. Reduces trace volume by skipping client heartbeat requests when (UNIT:ctdata IN ER) request tracing is used.
KFW_DATABUS_QUERY_ VERBOSE	Y or N	Default is N. Tivoli Enterprise Portal Server client side response time and request life cycle tracing.
KFW_MIGRATE_CMS	Y or N	Default is N. When set to Y, causes initial migration of managed objects and user IDs from the monitoring server the first time the Tivoli Enterprise Portal Server starts after installation.
KFW_MIGRATE_FORCE	Y or N	Default is N. When set to Y, SQL seed files are processed even if the date, time, or size of the files have not changed since prior seeding. This occurs when running the buildpresentation.bat file (Windows) and when running the InstallPresentation.sh file or reconfiguring the Tivoli Enterprise Portal Server (UNIX/Linux). To be effective, this value must be set in kfwalone (Windows) or in cq.ini or lnxenvnocms (UNIX/Linux).
KFW_MIGRATE_VERBOSE	Y or N	Default is N. When set to Y, provides greater detail about operations performed in migrate.log when seeding the Tivoli Enterprise Portal Server database. This occurs when running the buildpresentation.bat file (Windows) and when running the InstallPresentation.sh file or reconfiguring the Tivoli Enterprise Portal Server (UNIX/Linux). To be effective, this value must be set in kfwalone (Windows) or in cq.ini or lnxenvnocms (UNIX/Linux).
KFW_REPORT_TERM_ BREAK_POINT	Y or N	Default is N. When set to Y, specifies the point where a historical request selects from short-term or long-term history data.
KFW_SQL_VERBOSE	Y or N	Default is N. When set to Y, provides RAS1 trace of each SQL statement issued by the Tivoli Enterprise Portal Server to the Tivoli Enterprise Monitoring Server or to the DB2/ODBC data source. The use of this variable is deprecated because the same capability is available using the standard RAS1 trace setting ″KBB_RAS1=ERROR (UNIT:ctsql IN ER)″

Tivoli Enterprise Monitoring Server environment variables

The following table lists Tivoli Enterprise Monitoring Server environment variables.

Table 33. Tivoli Enterprise Monitoring Server environment variables

Variable	Purpose
ATTRLIB	Specifies the Tivoli Enterprise Monitoring Server attribute (ATR) files directory.
CANDLE_HOME	The directory where the product was installed.
CMS_BINPATH	Specifies the Tivoli Enterprise Monitoring Server binary files directory.
CMS_EXTERNALBROKERS	Whether there are internal brokers.
CMS_FTO	Whether to use Tivoli Enterprise Monitoring Server Hot Standby.
CMS_MSGBASE	Specifies the Tivoli Enterprise Monitoring Server message file directory.
CMS_NODEID	The Tivoli Enterprise Monitoring Server IBM Tivoli Monitoring Node ID.
KDC_GLBSITES	Specifies the Tivoli Enterprise Monitoring Server global sites network file with Tivoli Enterprise Monitoring Server Hub host names.
KDH_SERVICEPOINT	The service point.
KDS_CATLGLIB	Specifies the catalog library.
KDS_HUB	Specifies that this Tivoli Enterprise Monitoring Server is a Hub Tivoli Enterprise Monitoring Server (*LOCAL) or Remote Tivoli Enterprise Monitoring Server (*REMOTE).
KDS_NCS	Whether to use IBM Tivoli Monitoring network lookup services.
KDS_RULELIB	Specifies the rule library.
KDS_RUN	Specifies Tivoli Enterprise Monitoring Server components or probes to run at Tivoli Enterprise Monitoring Server startup.
KDS_START	Specifies Tivoli Enterprise Monitoring Server KDS component startup.
KDS_VALIDATE	Whether to use Tivoli Enterprise Monitoring Server authentication.
KGLCB_FSYNC_ENABLED	Whether to enable UNIX or Linux fsync calls.
KGL_CBTBUFCNT	Specifies Tivoli Enterprise Monitoring Server internal table buffer count.
KGL_CBTBUFSZ	Specifies Tivoli Enterprise Monitoring Server internal table buffer size.
KGL_KEYRING_FILE	Specifies LDAP authentication SSL GSKit keyring file.
KGL_KEYRING_LABEL	Specifies LDAP authentication SSL GSKit keyring label.
KGL_KEYRING_PASSWORD	Specifies LDAP authentication SSL GSKit keyring password.
KGL_KEYRING_STASH	Specifies LDAP authentication SSL GSKit keyring password stash file.
KGL_KGLMSGBASE	Specifies the Tivoli Enterprise Monitoring Server KGL message file directory.
KGL_LDAP_BASE	LDAP authentication LDAP search base.
KGL_LDAP_BIND_ID	LDAP authentication LDAP server bind Distinguished Name (DN).
KGL_LDAP_BIND_PASSWORD	LDAP authentication LDAP server bind password.
KGL_LDAP_HOST_NAME	LDAP authentication LDAP server host name.
KGL_LDAP_PORT	LDAP authentication LDAP server port.
KGL_LDAP_SSL_ENABLED	Whether to use LDAP SSL communications.
KGL_LDAP_USER_FILTER	LDAP authentication user filter.
KGL_LDAP_VALIDATE	Whether to use LDAP authentication.
KGL_MSG2_EVENTLOG	Whether to format Event Log.
KGL_MSG2_UNIVERSAL	Whether to enable Universal Messages.

Table 33. Tivoli Enterprise Monitoring Server environment variables (continued)

Variable	Purpose
KGL_TRC1	Whether to enable the error log.
KHD_HISTRETENTION	Specifies the default retention period in hours for the short term history files (default is 24 hours). This can be used to reduce the amount of data kept on disk after a successful upload to the warehouse is performed.
KIB_MAXCOLS	Tivoli Enterprise Monitoring Server internal dictionary column maximum.
KMS_DISABLE_TEC_EMITTER	TEC Emitter to be disabled.
KMS_OMTEC_ GLOBALIZATION_LOC	TEC Integration Globalization locale.
KMS_OMTEC_INTEGRATION	TEC Integration enabled.
KPX_WAREHOUSE_LOCATION	Allows a fixed warehouse route for the agents connected to that Tivoli Enterprise Monitoring Server when the usage of the Global Location Broker default algorithm is not supported. It is a list of fully qualified, semicolon delimited network names such as: `KPX_WAREHOUSE_LOCATION= family_protocol: #network_address[port_number]; ...`
KPX_WAREHOUSE_REGCHK	Number of minutes to wait between re-checking the Global Location Broker for any warehouse proxy agent registration changes. The default value is set to 60 minutes.
KSH_DIRECTORY	Specifies the Tivoli Enterprise Monitoring Server SOAP Server HTML files directory.
NLS1_LOCALEDIR	The directory of the locale file.
RKDSCATL	Specifies the Tivoli Enterprise Monitoring Server catalogue (CAT) files directory.
SQLLIB	Specifies the Tivoli Enterprise Monitoring Server seeding and query (SQL) files directory.

Universal Agent environment variables

The following table lists environment variables you can set to customize tracing for the Universal Agent.

Table 34. Universal Agent environment variables

Variable	Purpose
KBB_RAS1=ERROR (UNIT:kumamain ALL)	Problems involving managed system online/offline processing.
KBB_RAS1=ERROR (UNIT:kumpdpda Error Output) (UNIT:kumpmd2a Error Detail)	Incorrect report data.
KBB_RAS1=ERROR (UNIT:kumpfile Error State Detail Flow Metrics) (UNIT:kumpdcmf ALL)	Detailed File Data Provider tracing.
KBB_RAS1=ERROR (UNIT:kumpsosr ALL) (UNIT:kumpspst ALL) (UNIT:kumpscku ALL) (UNIT:kumpstcp ALL) (UNIT:kumplpba ALL)	Detailed API or Socket Data Provider tracing.
KBB_RAS1=ERROR METRICS	Problems involving Universal Agent memory usage.
KUMA_DCH_TRAPEMIT	SNMP Emitter tracing. Use to display emitted traps in the UAGENT Action report.

Table 34. Universal Agent environment variables (continued)

Variable	Purpose
KUMA_VERBOSE	Tracing a Universal Agent API client program. This variable must be set on the machine where the API client program is executing, not where Universal Agent is running) Example: KUMP_API_VERBOSE=Y dpapi.log. The KUMP_API_VERBOSE option is valuable when debugging an API program that communicates with the Universal Agent API data provider.
KUMP_HTTP_DEBUG	HTTP Data Provider tracing.
KUMP_ODBC_DEBUG	ODBC Data Provider tracing.
KUMP_SCRIPT_DEBUG	Script Data Provider tracing.
KUMP_SNMP_DEBUG_TRAP KUMP_SNMP_DEBUG_DISCOVERY_ROUTE KUMP_SNMP_DEBUG_DISCOVERY_NETWORK KUMP_SNMP_DEBUG_MIB_MANAGER KUMP_SNMP_DEBUG_MIB_IO	SNMP Data Provider tracing. All of the debug environment variables listed default to No. As an example, if you use the SNMP Data Provider and have problems collecting MIB data, you set these two environment variables: KUMP_SNMP_DEBUG_MIB_MANAGER=Y KUMP_SNMP_DEBUG_MIB_IO=Y

For a complete list of the Universal Agent environment variables, see the *IBM Tivoli Universal Agent User's Guide*.

Tivoli Data Warehouse environment variables

The following Tivoli Data Warehouse parameters can be changed in the KHDENV_MIG file to customize tracing for the warehouse upgrade tool.

Table 35. Tivoli Data Warehouse environment variables

Variable	Purpose
KHD_MAX_ROWS_SKIPPED_PER_TABLE	Specifies the maximum number of rows per table that can be skipped during an upgrade. Rows with incorrect data are skipped until the maximum specified number is reached. When this number of rows are skipped, the migration of the table is aborted.
KHD_MAX_ROWS_PER_TRANSACTIONS	Specifies how many rows are committed at each insert of data.
KHD_CNP_SERVER_HOST	Specifies the name of the CNP server.
KHD_CNP_SERVER_PORT	Specifies the port used by the CNP server.
KHD_SOURCE_DATABASE_SCHEMA	Specifies the owner or schema of the Candle tables in the source database.
KHD_SOURCE_JDBC_DRIVER	Specifies the JDBC driver used to connect to the source database.
KHD_SOURCE_URL	Specifies the URL to connect to the source database
KHD_SOURCE_DATABASE_USER	Specifies the user to connect to the source database.
KHD_SOURCE_DATABASE_PASSWORD	Specifies the password to connect to the source database.
KHD_TARGET_JDBC_DRIVER	Specifies the JDBC driver used to connect to the target database
KHD_TARGET _URL	Specifies the URL to connect to the target database
KHD_TARGET _DATABASE_SCHEMA	Specifies the owner or schema of the tables in the target database
KHD_TARGET _DATABASE_USER	Specifies the user to connect to the target database

Table 35. Tivoli Data Warehouse environment variables (continued)

Variable	Purpose
KHD_TARGET _DATABASE_PASSWORD	Specifies the password to connect to the target database

The following Warehouse Proxy agent parameters can be changed in the KHDENV file on Windows systems and the HD.ini file in non-Windows systems to customize tracing for the Warehouse Proxy agent.

Table 36. Warehouse proxy environment variables

Variable	Purpose
CTIRA_NCSLISTEN	The number of RPC threads.
KHD_BATCH_USE	Reduces network flow when the Tivoli Data Warehouse database is not installed on the same machine where the warehouse proxy agent resides, this variable must be set to Y. This is done automatically when the Use Batch check box on the UNIX warehouse proxy configuration panel is checked. This check box does not exist for the warehouse proxy configuration panel on Windows and it needs to be set explicitly in the KHDENV file.
KHD_CNX_POOL_SIZE	The total number of preinitialized ODBC connection objects available to the work queue export threads. The default value is 3.
KHD_CNX_WAIT	The time in minutes to wait before trying to reconnect. Default is 10 minutes.
KHD_CNX_WAIT_ENABLE	A time to wait before a retry. Default is Y. Changing this variable to N does not wait before retries. Setting this variable to N can generate a large log file if the tests to the database fail at each retry.
KHD_EXPORT_THREADS	The number of worker threads exporting data to the database. The default value is 10.
KHD_QUEUE_LENGTH	The length of the KHD work queue. This is an integer that identifies the maximum number of export work requests that can be placed on the work queue before the queue starts rejecting requests. The default value of KHD_QUEUE_LENGTH is 1000. Setting this value to 0 means the queue length has no limit.
KHD_SRV_STATUSTIMEOUT	The time in seconds set by default to 600s = 10 minutes. Set KHD_SRV_STATUSTIMEOUT less than KHD_STATUSTIMEOUT by at least 60 seconds.
KHD_STATUSTIMEOUT	The time in seconds set by default to 900s = 15 minutes. An export request on the application agent is resent if a status is not received from the Warehouse Proxy agent before the timeout expires.
KHD_WAREHOUSE_TEMS_LIST	A space or coma delimited separated list of monitoring server. A warehouse proxy agent serves all the agents reporting to those monitoring servers listed. The same monitoring server name must not appear more than once in all the warehouse proxy Tivoli Enterprise Monitoring Server lists in the entire enterprise environment.

Table 37 on page 151 lists the Summarization and Pruning agent parameters that you can edit in the KSYENV file on Windows systems and the SY.ini file on non-Windows systems to customize tracing for the Summarization and Pruning agent.

Table 37. Summarization and Pruning agent environment variables

Variable	Purpose
KSY_BLACKOUT	Specifies a comma separated list of exception times where the Summarization and Pruning agent should not start when using the flexible scheduling. The values in the list should be in the format HH:MM-HH:MM where HH must be between 00 and 23 and MM must be between 00 and 59. The starting time must be smaller than the end time of the exception period. For example, to block the Summarization and Pruning agent from starting between 1 and 2 AM and 5 and 6 PM, use the following: 01:00-01:59,17:00-17:59.
KSY_CNP_SERVER_HOST	Tivoli Enterprise Portal Server connection default host.
KSY_CNP_SERVER_PORT	Tivoli Enterprise Portal Server connection default port.
KSY_DAY_AGE_UNITS	The minimum age of data for daily data in days before aggregation is done.
KSY_EVERY_N_DAYS	How often to run the schedule in days (number).
KSY_EVERY_N_MINS	Indicates the frequency between Summarization and Pruning agent runs when using the flexible scheduling. Must be a multiple of 15 minutes, with a minimum of 15 and a maximum of 1440 (one day).
KSY_FIXED_SCHEDULE	Indicates whether the Summarization and Pruning agent is configured for fixed schedule if set to Y or flexible schedule when set to N.
KSY_HOUR_AGE_UNITS	The minimum age of data for hourly data in hours before aggregation is done.
KSY_HOUR_AM_PM	Whether to run in the AM or PM (AM/PM).
KSY_HOUR_TO_RUN	The hour of the day to run (number).
KSY_MAX_ROWS_PER_ TRANSACTION	Maximum rows per database transaction.
KSY_MAX_WORKER_THREADS	Maximum number of simultaneous worker threads. Default is 1. Recommended value is the number of processors on your server minus 1.
KSY_MINUTE_TO_RUN	The minute of the day to run (number).
KSY_SHIFT1_HOURS	A comma-separated list of hour numbers for the shift.
KSY_SHIFT2_HOURS	A comma-separated list of hour numbers for the shift.
KSY_SHIFTS_ENABLED	Shift periods. Only two shifts are allowed. If shifts are enabled, each hour (0-23) must be specified once.
KSY_START_OF_WEEK_DAY	Start of the week day, for example: 0 = Sunday 1 = Monday.
KSY_TIMEZONE_IND	Time zone indicator. AGENT specifies use the time zone offset of the agent. WAREHOUSE specifies use the time zone offset of the warehouse .
KSY_VACATION_DAYS	Vacation days in a comma-separated list of days in YYYYMMDD format.
KSY_VACATIONS_ENABLED	Whether or not vacation are enabled with Y or N.
KSY_WAREHOUSEAGGREGLOG_PRUNE	Use to specify the pruning for the WAREHOUSEAGGREGLOG table. The format of the value should be *number.unit*, where *number* is the number of units to retain and *unit* specifies the retention unit, which can be one of day, month or year.
KSY_WAREHOUSELOG_PRUNE	Use to specify the pruning for the WAREHOUSELOG table. The format of the value should be *number.unit*, where *number* is the number of units to retain and *unit* specifies the retention unit, which can be one of day, month or year.
KSY_WAREHOUSE_DRIVER	The Warehouse Database Connection JDBC Driver.

Table 37. Summarization and Pruning agent environment variables (continued)

Variable	Purpose
KSY_WAREHOUSE_PASSWORD	The Warehouse Database Connection Password (encrypted).
KSY_WAREHOUSE_SCHEMA	The Warehouse Database Connection Schema.
KSY_WAREHOUSE_URL	The Warehouse Database Connection JDBC URL.
KSY_WAREHOUSE_USER	The Warehouse Database Connection User (encrypted).
KSY_WEEKENDS_AS_VACATIONS	Whether or not weekends are vacation with Y or N.
KSZ_JAVA_ARGS	Java arguments.

Tivoli Enterprise Monitoring Agent deploy environment variables

The following Tivoli Enterprise Monitoring Agent parameters can be changed in the KBBENV file:

Table 38. Tivoli Enterprise Monitoring Agent deploy environment variables

Variable	Purpose
AGENTDEPOT	An OS agent parameter. Determines the location on the agent host where agent bundles will be transferred.
CMS_MSGBASE	Applies to is/5 platform Tivoli Enterprise Monitoring Agent only. Specify the MSG2 message file for Tivoli Enterprise Monitoring Agent framework messages.
CT_CMSDIRECT	OBSOLETE – Has been replaced by IBM Tivoli Monitoring v6.X firewall communications services. Specify the full NAT firewall address of the Tivoli Enterprise Monitoring Server to be connected to, including protocol:address[port#].
CT_CMSLIST	Required variable specifying the primary and/or secondary Tivoli Enterprise Monitoring Server for the agent to connect with. Takes a semicolon delimited list of Tivoli Enterprise Monitoring Server by network protocol:hostname or protocol:address.
CTIRA_CELL_NAME	OBSOLETE – Agents only. Replaced by agent configuration variable CT_CMSLIST.
CTIRA_HEARTBEAT	The interval, in minutes, of the agent to Tivoli Enterprise Monitoring Server heartbeat data sample. Default is 10 minutes. Using shorter heartbeat intervals will increase network traffic between the agent and Tivoli Enterprise Monitoring Server.
CTIRA_HIST_DIR	Required variable specifying the directory where Tivoli Enterprise Monitoring Agent based short-term history data files will be stored. Does not apply to Tivoli Enterprise Monitoring Server short-term history data files.
CTIRA_HOSTNAME	Used by many, but not all, agents to provide an alternate hostname qualifier (subsystem:hostname:nodetype) for the published agent managed system name. Used to remove a long network domain name, i.e. acme.us.com, from the default Tivoli Enterprise Monitoring Agent hostname. Not honored by all agents. For some agents, might cause unpredictable Tivoli Enterprise Portal navigation tree results.
CTIRA_IP_PORT	Applies to z/OS agents only. DO NOT MODIFY. Is set to 0 so the OS can provide the agent rpc listen port. Avoids a port conflict for some z/OS configurations.
CTIRA_LOG_PATH	Required variable specifying the directory where the Tivoli Enterprise Monitoring Agent Operations Log file is stored. The file names use suffix of ".LG0" and ".LG1". Does not apply to z/OS based agents.

Table 38. Tivoli Enterprise Monitoring Agent deploy environment variables (continued)

Variable	Purpose
CTIRA_MAX_RECONNECT _TRIES	Number of consecutive times without success the agent will attempt to connect to a Tivoli Enterprise Monitoring Server before giving up and exiting. Default is 720.
CTIRA_NCSLISTEN	Number of RPC listen server threads to create for the agent. Default is 10.
CTIRA_NODETYPE	Supply the agent node type qualifier (subsystem:hostname:nodetype) of the agent managed system name (MSN). Provide the agent product indicator in the MSN. Value can also be set by the Tivoli Enterprise Monitoring Agent API.
CTIRA_OS_INFO	Override default value for agent entries in the Tivoli Enterprise Monitoring Server "ManagedSystem.Host_Info" column. Used to build Tivoli Enterprise Portal Server navigation tree. Value must match existing entry in the CNPS/osnames file. Not applicable to subnode type records in the ManagedSystem table.
CTIRA_PRODUCT_SEP	Supply alternate qualifier for the agent managed system name (MSN). Default is a colon character ':'.
CTIRA_RECONNECT_WAIT	Time interval, in seconds, for the agent to wait between attempts to register with a Tivoli Enterprise Monitoring Server. Default is 600 seconds.
CTIRA_REFLEX_ATOMIC	Default is "Y". For subnode targets only. Evaluate situation state by any existing specified display item column name when deciding which reflex situation automation command the Tivoli Enterprise Monitoring Agent should execute. Not applicable to reflex situation commands executed or evaluated by the Tivoli Enterprise Monitoring Server. Disable by setting to "N".
CTIRA_REFLEX_TARGET	Default is "Y". For subnode targets only. Evaluate situation state by subnode name value in the ORIGINNODE column when deciding which reflex situation automation command the Tivoli Enterprise Monitoring Agent should execute. Not applicable to reflex situation commands executed or evaluated by the Tivoli Enterprise Monitoring Server. Disable by setting to "N".
CTIRA_SIT_CLEAN	Number of seconds between garbage clean up of stale entries in the agent persistent situation file. Default is 900 seconds.
CTIRA_SIT_FILE	Specify an alternate name for the default Tivoli Enterprise Monitoring Agent based persistent situation file. This should only be done in exceptional conditions since the file name reflects the agent's managed system name. Unsupported for z/OS based agents.
CTIRA_SIT_MGR	Specify whether or not to use the Tivoli Enterprise Monitoring Agent persistent situation file when registering with the Tivoli Enterprise Monitoring Server. Using this file improves Tivoli Enterprise Monitoring Server performance. Set to "N" to disable usage. For z/OS Tivoli Enterprise Monitoring Agent the value must be "N" since this feature not implemented for z/OS. For all other platforms, default is "Y".
CTIRA_SIT_PATH	Required variable specifying directory where the Tivoli Enterprise Monitoring Agent based agent persistent situation file is stored. This is the Tivoli Enterprise Monitoring Agent's only file, and it contains a copy of the Tivoli Enterprise Monitoring Server monitoring situations for Tivoli Enterprise Monitoring Agent use during Tivoli Enterprise Monitoring Server registration. The file is named psit_msn.str, where msn is the Managed System Name of the agent process. Unsupported for z/OS based agents.
CTIRA_STANDALONE	OBSOLETE – Should never be set. If it is specified, it MUST only be set to "N" or "n". Using any other value, including an empty string "", will cause the agent to fail to connect to a Tivoli Enterprise Monitoring Server.
CTIRA_SUBSYSTEM_ID	Optional variable to override the subsystem ID qualifier (subsystem:hostname:nodetype) of the agent managed system name (MSN). Describes a monitored resource instance to help make the MSN unique. Value can also be set by the Tivoli Enterprise Monitoring Agent API.

Table 38. Tivoli Enterprise Monitoring Agent deploy environment variables (continued)

Variable	Purpose
CTIRA_SYSTEM_NAME	Set alternate system name value for the agent entries in the Tivoli Enterprise Monitoring Server "ManagedSystem.Host Address" column within the "<NM>mysystem</NM>" tags. Used to build the Tivoli Enterprise Portal Server navigation tree. Not applicable to subnode type records in the Tivoli Enterprise Monitoring Server ManagedSystem table.
CTIRA_USE_HBTIMER	This variable should never be used! It will degrade agent heartbeat performance by NOT creating a separate heartbeat data thread.
DATACHUNKSIZE	Specifies the size of the data chunk that will be passed to RPC for transfer.
DEPLOYQUEUESIZE	Specifies the maximum number of requests that the request queue on the agent deployment controller.
DEPLOYTHREADPOOLSIZE	Specifies the number of threads that are available to the deployment controller.
DEPOTHOME	Specifies the root directory of the agent depot on the file system.
IRA_DUMP_DATA	Used by Tivoli Enterprise Monitoring Agent and Tivoli Enterprise Monitoring Server for debugging. Set to "Y" to do a hex dump of certain detailed data row contents into the RAS1 log. Default is "N". Can produce voluminous RAS1 message output if enabled.
ITM_BINARCH	Set by Tivoli Enterprise Monitoring Agent installer to supply the platform architecture code. Used by Tivoli Enterprise Monitoring Agent to read the agent installation version files and retrieve the agent version information.

KBB_RAS1	• View state of main Tivoli Enterprise Monitoring Agent functions like situation and report processing:
	`ERR (UNIT:KRA ST)`
	• Detailed debug messages for Tivoli Enterprise Monitoring Agent functions:
	`ERR (UNIT:KRA ALL)`
	• View state of short-term history data uploads to Tivoli Data Warehouse:
	`ERR (UNIT:KHDX ST)`
	• Detailed debug messages of short-term history data uploads to Tivoli Data Warehouse:
	`ERR (UNIT:KHD ALL)`

KHD_HISTRETENTION	Specifies the default retention period in hours for the short term history files (default is 24 hours). This can be used to reduce the amount of data kept on disk after a successful upload to the warehouse is performed.
TIMEOUT	Specifies the time in seconds that Agent Deployment tool has to complete a task. If the tool does not complete in the task in the time specified by the TIMEOUT value, the task is terminated. The default value is 600 seconds.

Appendix C. Support for problem solving

If you have a problem with your IBM software, you want to resolve it quickly. This section describes the following options for obtaining support for IBM software products:

- "Using IBM Support Assistant"
- "Obtaining fixes"
- "Contacting IBM Software Support" on page 156

Using IBM Support Assistant

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

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

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

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

For more information, and to download the IBM Support Assistant Version 3, see http://www.ibm.com/software/support/isa. After you download and install the IBM Support Assistant, follow these steps to install the plug-in for IBM Tivoli Monitoring:

1. Start the IBM Support Assistant application.
2. Select **Updater** on the Welcome page.
3. Select **New Properties and Tools**.
4. Under Tivoli, select **IBM Tivoli Monitoring 6.2**, and then click **Install**. Be sure to read the license and description.
5. Restart the IBM Support Assistant.

Obtaining fixes

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

1. Go to the IBM Software Support Web site at http://www.ibm.com/software/support.
2. Click **Downloads and drivers** in the **Support topics** section.
3. Select the **Software** category.
4. Select a product in the **Sub-category** list.
5. In the **Find downloads an drivers by product** section, select one software category from the **Category** list.
6. Select one product from the **Sub-category** list.

7. Type more search terms in the **Search within results** if you want to refine your search.
8. Click **Search**.
9. From the list of downloads returned by your search, click the name of a fix to read the description of the fix and to optionally download the fix.

For more information about the types of fixes that are available, see the *IBM Software Support Handbook* at http://techsupport.services.ibm.com/guides/handbook.html.

Contacting IBM Software Support

IBM Software Support provides assistance with product defects. The easiest way to obtain that assistance is to open a PMR or ETR directly from the IBM Support Assistant (see "Using IBM Support Assistant" on page 155).

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

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

  Online

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

  By phone

  For the phone number to call in your country, go to the IBM Software Support Web site at http://techsupport.services.ibm.com/guides/contacts.html and click the name of your geographic region.
- For customers with Subscription and Support (S & S) contracts, go to the Software Service Request Web site at https://techsupport.services.ibm.com/ssr/login.
- For customers with IBMLink™, CATIA, Linux, OS/390, iSeries®, pSeries®, zSeries®, and other support agreements, go to the IBM Support Line Web site at http://www.ibm.com/services/us/index.wss/so/its/a1000030/dt006.
- For IBM eServer™ software products (including, but not limited to, DB2 and WebSphere products that run in zSeries, pSeries, and iSeries environments), you can purchase a software maintenance agreement by working directly with an IBM sales representative or an IBM Business Partner. For more information about support for eServer software products, go to the IBM Technical Support Advantage Web site at http://www.ibm.com/servers/eserver/techsupport.html.

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

To contact IBM Software support, follow these steps:

1. "Determining the business impact" on page 157

2. "Describing problems and gathering information"
3. "Submitting problems"

Determining the business impact

When you report a problem to IBM, you are asked to supply a severity level. Use the following criteria TO understand and assess the business impact of the problem that you are reporting:

Severity 1
The problem has a *critical* business impact. You are unable to use the program, resulting in a critical impact on operations. This condition requires an immediate solution.

Severity 2
The problem has a *significant* business impact. The program is usable, but it is severely limited.

Severity 3
The problem has *some* business impact. The program is usable, but less significant features (not critical to operations) are unavailable.

Severity 4
The problem has *minimal* business impact. The problem causes little impact on operations, or a reasonable circumvention to the problem was implemented.

Describing problems and gathering information

When describing a problem to IBM, be as specific as possible. Include all relevant background information so that IBM Software Support specialists can help you solve the problem efficiently. To save time, know the answers to these questions:

- Which software versions were you running when the problem occurred?
- Do you have logs, traces, and messages that are related to the problem symptoms? IBM Software Support is likely to ask for this information.
- Can you re-create the problem? If so, what steps were performed to re-create the problem?
- Did you make any changes to the system? For example, did you make changes to the hardware, operating system, networking software, and so on.
- Are you currently using a workaround for the problem? If so, be prepared to explain the workaround when you report the problem.

Submitting problems

You can submit your problem to IBM Software Support in one of two ways:

Online
Click **Submit and track problems** on the IBM Software Support site at http://www.ibm.com/software/support/probsub.html. Type your information into the appropriate problem submission form.

By phone
For the phone number to call in your country, go to the contacts page of the *IBM Software Support Handbook* at http://techsupport.services.ibm.com/guides/contacts.html and click the name of your geographic region.

If the problem you submit is for a software defect or for missing or inaccurate documentation, IBM Software Support creates an Authorized Program Analysis Report (APAR). The APAR describes the problem in detail. Whenever possible,

IBM Software Support provides a workaround that you can implement until the APAR is resolved and a fix is delivered. IBM publishes resolved APARs on the Software Support Web site daily, so that other users who experience the same problem can benefit from the same resolution.

Appendix D. Documentation library

This appendix contains information about the publications related to IBM Tivoli Monitoring and to the commonly shared components of Tivoli Management Services. These publications are listed in the following categories:

- IBM Tivoli Monitoring library
- Related publications

See *IBM Tivoli Monitoring and OMEGAMON XE Products: Documentation Guide*, SC23-8816, for information about accessing and using the publications. You can find the *Documentation Guide* in the IBM Tivoli Monitoring and OMEGAMON XE Information Center at http://publib.boulder.ibm.com/infocenter/tivihelp/v15r1/.

To find a list of new and changed publications, click **What's new** on the Welcome page of the IBM Tivoli Monitoring and OMEGAMON XE Information Center. To find publications from the previous version of a product, click **Previous information centers** on the Welcome page for the product.

IBM Tivoli Monitoring library

The following publications provide information about IBM Tivoli Monitoring V6.2 and about the commonly shared components of Tivoli Management Services:

- *Quick Start Guide*, GI11-8058

  Introduces the components of IBM Tivoli Monitoring.
- *Exploring IBM Tivoli Monitoring*, SC32-1803

  Provides a series of exercises to help you explore IBM Tivoli Monitoring. By completing the activities in this workbook, you will install and configure your monitoring environment, explore both the graphical and command-line interfaces of the product, use some of the new features, and work with several monitoring agents.
- *Installation and Setup Guide*, GC32-9407

  Provides instructions for installing and configuring IBM Tivoli Monitoring components on Windows, Linux, and UNIX systems.
- *IBM Tivoli Management Services on z/OS Program Directory*, GI11-4105

  Gives instructions for the SMP/E installation of the Tivoli Management Services components on z/OS.
- *Configuring IBM Tivoli Enterprise Monitoring Server on z/OS*, SC32-9463

  Gives detailed instructions for using the Configuration Tool to configure Tivoli Enterprise Monitoring Server on z/OS systems. Includes scenarios for using batch mode to replicate monitoring environments across the z/OS enterprise. Also provides instructions for setting up security and for adding application support to a Tivoli Enterprise Monitoring Server on z/OS.
- *Administrator's Guide*, SC32-9408

  Describes the support tasks and functions required for the Tivoli Enterprise Portal Server and clients, including Tivoli Enterprise Portal user administration.
- Tivoli Enterprise Portal online help

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

- *User's Guide*, SC32-9409

  Complements the Tivoli Enterprise Portal online help. The guide provides hands-on lessons and detailed instructions for all Tivoli Enterprise Portal features.
- *Command Reference*, SC32-6045

  Provides detailed syntax and parameter information, as well as examples, for the commands you can use in IBM Tivoli Monitoring.
- *Problem Determination Guide*, GC32-9458

  Provides information to help you troubleshoot problems with the software.
- *Messages*, SC23-7969

  Lists and explains messages generated by all IBM Tivoli Monitoring components and by z/OS-based Tivoli Management Services components (such as Tivoli Enterprise Monitoring Server on z/OS and TMS:Engine).
- *Upgrading from V5.1.2*, GC32-1976

  Gives instructions for upgrading custom resource models from IBM Tivoli Monitoring V5.1.2 to IBM Tivoli Monitoring V6.2.
- *IBM Tivoli Universal Agent User's Guide*, SC32-9459

  Introduces you to the IBM Tivoli Universal Agent, an agent of IBM Tivoli Monitoring. The IBM Tivoli Universal Agent enables you to use the monitoring and automation capabilities of IBM Tivoli Monitoring to monitor any type of data you collect.
- *IBM Tivoli Universal Agent API and Command Programming Reference Guide*, SC32-9461

  Explains the procedures for implementing the IBM Tivoli Universal Agent APIs and provides descriptions, syntax, and return status codes for the API calls and command-line interface commands.
- *Agent Builder User's Guide*, SC32-1921

  Explains how to use the Agent Builder for creating monitoring agents and their installation packages, and for adding functions to existing agents.
- *Fix Pack Readme and Documentation Addendum*

  Describes the installation process for a fix pack and provides updated information on problems and workarounds associated with the fix pack. A new version of this document is created for each fix pack.

Documentation for the base agents

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

The following publications provide information about using the base agents.

- *Windows OS Agent User's Guide*, SC32-9445
- *UNIX OS Agent User's Guide*, SC32-9446
- *Linux OS Agent User's Guide*, SC32-9447
- *i5/OS Agent User's Guide*, SC32-9448
- *UNIX Log Agent User's Guide*, SC32-9471
- *Monitoring Agent for IBM Tivoli Monitoring 5.x Endpoint User's Guide*, SC32-9490

Related publications

You can find useful information about the OMEGAMON XE monitoring agent products in the IBM Tivoli Monitoring and OMEGAMON XE Information Center at http://publib.boulder.ibm.com/infocenter/tivihelp/v15r1/.

Other sources of documentation

You can also obtain technical documentation about IBM Tivoli Monitoring and OMEGAMON XE products from the following sources:

- IBM Tivoli Open Process Automation Library (OPAL)

  http://www.ibm.com/software/tivoli/opal

  OPAL is an online catalog that contains integration documentation as well as other downloadable product extensions. This library is updated daily.
- Redbooks

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

  IBM Redbooks®, Redpapers, and Redbooks Technotes provide information about products from platform and solution perspectives.
- Technotes

  You can find Technotes through the IBM Software Support Web site at http://www.ibm.com/software/support/probsub.html, or more directly through your product Web site, which contains a link to Technotes (under **Solve a problem**).

  Technotes provide the latest information about known product limitations and workarounds.

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