IBM Tivoli Composite Application Manager Agent for SAP Applications 7.1.1 Fix Pack 6

Troubleshooting Guide

Note

Before using this information and the product it supports, read the information in “Notices” on page 57.

This edition applies to version 7.1.1 Fix Pack 4 of IBM® Tivoli® Composite Application Manager Agent for SAP Applications (product number 5725-I45) and to all subsequent releases and modifications until otherwise indicated in new editions.

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Chapter 1. Troubleshooting

You use the troubleshooting process to determine the cause and propose a solution for problems that you encounter in your system.

You can resolve some problems by ensuring that your system matches the system requirements listed in the Prerequisites topic for the agent in the information center.

This section explains how to troubleshoot the IBM Tivoli Composite Application Manager Agent for SAP Applications. Troubleshooting is the process of determining why a product is malfunctioning.

This section provides agent-specific troubleshooting information. See the *IBM Tivoli Monitoring Troubleshooting Guide* for general troubleshooting information. Also, see Chapter 4, “Support information,” on page 53 for other problem-solving options.

Product information gathering and IBM Software Support

You must collect as much information as possible about problems that you experience with a product before you contact IBM Software Support. For example, you can retrieve information from dump files or log files on a system that fails.

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

Table 1. Information to gather before contacting IBM Software Support

Information type	**Description**
Log files	Collect trace log files from failing systems. Most logs are in a `logs` subdirectory on the host computer. See Chapter 2, “Trace logging,” on page 7 for lists of all trace log files and their locations. For general information about the IBM Tivoli Monitoring environment, see the *IBM Tivoli Monitoring User's Guide.*

Table 1. Information to gather before contacting IBM Software Support (continued)

Information type	Description
Transport import log files	These files are always in one of the transport log directories: • `/usr/sap/trans/log` • `\\server\sapmnt\trans\log` • *?*`:\usr\sap\trans\log`, where *?* is a drive letter The log file names have the following format: `ITM?711_000nnU.sss` Where: ***sss*** Target system name ***nn*** Transport number ***?*** One of the following single characters: • H - data dictionary import • A - data dictionary activation • I - main import • V - versioning • R - XPRA (execute program after import) • G - program/dynpro generation. Always provide all 6 complete logs and, not excerpts of logs.
mySAP information	Release number, SAP kernel, and patch level
Operating system	Operating system version number and patch level
Messages	Messages and other information shown on the screen
Version numbers for IBM Tivoli Monitoring	Version number for the following members of the monitoring environment: • IBM Tivoli Monitoring. Also provide the patch level, if available. • IBM Tivoli Composite Application Manager Agent for SAP Applications
Screen captures	Screen captures of incorrect output, if any.
mySAP ABAP dumps	Export relevant dumps to a text file by using transaction ST22.
(*UNIX only*) Core dump files	If the agent crashes on UNIX systems, collect the core dump file from `install_dir/bin directory`, where install_dir is the directory path where you installed the monitoring agent.
Windows operating system Core dump files	If the agent crashes on Windows operating systems, then, a KSACMA_XXX.RAS core dump file is created, where XXX is the instance name of the SAP agent. For a Windows 32-bit operating system, this file is stored in `C:\Windows\System32` , and for a Windows 64-bit operating system, the file is stored in `C:\WINDOWS\SysWOW64`.

Table 1. Information to gather before contacting IBM Software Support (continued)	
Information type	**Description**

Version of the mySAP agent transport installed on a mySAP system	Use the /n/IBMMON/ITM_CONFIG transaction in the mySAP system to determine the installed and active transport number. After starting the transaction, click **About** > **IBM Tivoli Composite Application Manager Agent for SAP Applications**. See the long text in the message, which looks similar to the following code:
	`Version:  07`
	`Release:  11`
	`Fix pack:  01`
	`Limited Availability fix: 00`
	`Date exported at IBM:  12.06.2014`
	`Time exported at IBM:  11:41:48`
	`Transport request from IBM:  ITMK711_00100U`
	`Date imported into PS8:  18.06.2014`
	`Time imported into GS7:  15:52:13`
	`Current transport request:  ITMK711_00100U`

For information about working with IBM Software Support, see IBM Support Portal Service Requests and PMRs.

Built-in troubleshooting features

Trace logging is one of the troubleshooting features to determine problems in your operating environment.

The primary troubleshooting feature in the IBM Tivoli Composite Application Manager Agent for SAP Applications is logging. **Logging** includes the text messages and trace data generated by the IBM Tivoli Composite Application Manager Agent for SAP Applications and it is always enabled. Messages and trace data are sent to the files that are listed in Table 2 on page 9.

Trace data captures transient information about the current operating environment when a component or application fails to operate as designed. IBM Software Support personnel use the captured trace information to determine the source of an error or unexpected condition. For more information, see Chapter 2, “Trace logging,” on page 7.

Problem classification

You might encounter different types of problems with your product that require workarounds.

The following types of problems might occur with the IBM Tivoli Composite Application Manager Agent for SAP Applications:

- Installation and Configuration
- Agent
- Tivoli Enterprise Portal
- Workspaces
- Situations
- Take Action commands

This appendix provides symptom descriptions and detailed workarounds for problems in these areas, and it describes the logging capabilities of the monitoring agent. See the *IBM Tivoli Monitoring Troubleshooting Guide* for general troubleshooting information.

Upgrading the agent and Restarting by using non-root

You run the monitoring agent as non-root by using the **itmcmd agent start** command on UNIX and Linux® systems.

About this task

The monitoring agent runs as a non-root user on UNIX and Linux systems. You run the **itmcmd agent start** command while the agent runs as a non-root user. You complete this log in remotely by deploying the agent by using the **Run As** option on the GUI or by using the **_UNIX_STARTUP_.Username** option on the **tacmd addSystem** command line. If the agent is upgraded while running as non-root, or restarted remotely, or restarted as a result of a system reboot, or the **itmcmd agent start** is run as root, then the monitoring agent will start as the root user. To confirm the user ID that the monitoring agent is using, run the following command: **install_dir/bin/cinfo -r**

Procedure

Complete the following steps to restart the agent:

- If the agent is running as root, and that is not the required user ID, then use the following steps to restart the agent:
  a. Log in as root.
  b. Run the **itmcmd agent stop** command.
  c. Log in (or 'su') to the user ID that you want the agent to run as.
  d. Run the **itmcmd agent start** command.
- If the agent was running as root because of a system reboot, then edit the startup file. You can use the following steps so that the appropriate user ID is used the next time the system is rebooted:
  a. Look at *install_dir*/registry/AutoStart, and get NUM
  b. Edit the autostart for your operating system.

     The location of the startup file is platform-dependent as follows:

     – AIX®: /etc/rc.itmNUM
     – HP-UX: /sbin/init.d/ITMAgentsNUM
     – Linux: /etc/init.d/ITMAgentsNUM
     – Solaris: /etc/init.d/ITMAgentsNUM
  c. Add or modify entries for your operating system by using the following command:

```
/usr/bin/su - user
-c "install_dir/bin/itmcmd agent
-h install_dir
-o instancename
start product_code"
```

     Where:

     user
     User that the agent needs to run as

     instancename
     Name of the mySAP instance

     install_dir
     Name of the directory

     product_code
     2-character product code for the agent, for example, sa for the SAP agent

     Examples:

– For AIX, add entries with the following format:

```
su - USER -c "/opt/IBM/ITM/bin/itmcmd agent
-o INSTANCE start sa"
```

Where:

USER
Name of the user

INSTANCE
Name of the mySAP 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 sa >/dev/null 2>&1"
```

Where:

USER
Name of the user

INSTANCE
Name of the mySAP instance

d. Repeat steps 1 - 3 for each instance of the monitoring agent that was stopped.

e. Save the file.

Chapter 2. Trace logging

Use trace logging to trace a problem that occurred in your operating environment and to find a solution to fix this problem.

Trace logs capture information about the operating environment when component software fails to operate as intended. The principal log type is the RAS (Reliability, Availability, and Serviceability) trace log. These logs are in the English language only. The RAS trace log mechanism is available for all components of IBM Tivoli Monitoring. Most logs are in a `logs` subdirectory on the host computer. See the following sections to learn how to configure and use trace logging:

- "Principal trace log files" on page 8
- "Examples of trace logs" on page 11
- "Manually setting RAS trace parameters" on page 15
- "Enabling and disabling RFC tracing" on page 18

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

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

Overview of log file management

RAS1 log files have a specific naming convention.

Table 2 on page 9 provides the names, locations, and descriptions of RAS1 log files. The log file names adhere to the following naming convention: `hostname_product_instance_program_timestamp-nn.log` where:

- *hostname* is the host name of the computer on which the monitoring component is running.
- *product* is the two-character product code. For SAP agent, the product code is sa.
- *instance* is the name of a 3-character identifier for the mySAP system that is being monitored.
- *program* is the name of the program that is run.
- *timestamp* is an 8-character hexadecimal timestamp that represents the time at which the program started.
- *nn* is a rolling log suffix. See "Log file naming and examples" on page 7 for details of log rolling.

Log file naming and examples

The format of Log file names varies according to the system being monitored. For example, a system named PRD retains PRD in its name. Long-running programs retain an **nn** suffix to maintain a short history of log files for the startup of the program.

For example, if a mySAP system named PRD is being monitored from computer "server01", the RAS log file for the SAP agent might be named as follows:

```
server01_sa_PRD_ksaagent_437fc59-01.log
```

For long-running programs, the **nn** suffix is used to maintain a short history of log files for that startup of the program. For example, the ksa agent program might have a series of log files as follows:

```
server01_sa_PRD_ksaagent_437fc59-01.log
server01_sa_PRD_ksaagent_437fc59-02.log
server01_sa_PRD_ksaagent_437fc59-03.log
```

As the program runs, the first log (**nn**=01) is preserved because it contains program startup information. The remaining logs "roll." In other words, when the set of numbered logs reach a maximum size, the remaining logs are overwritten in sequence. Each time a program is started, a new timestamp is assigned to maintain a short program history. For example, if the SAP agent is started twice, it might have log files as follows:

```
server01_sa_PRD_ksaagent_437fc59-01.log
server01_sa_PRD_ksaagent_437fc59-02.log
server01_sa_PRD_ksaagent_437fc59-03.log

server01_sa_PRD_ksaagent_537fc59-01.log
server01_sa_PRD_ksaagent_537fc59-02.log
server01_sa_PRD_ksaagent_537fc59-03.log
```

Each program that is started has its own log file. For example, the SAP agent has agent logs in this format:

```
server01_sa_PRD_ksaagent_437fc59-01.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.

Principal trace log files

You use principal trace log files to troubleshoot agents.

Table 2 on page 9 contains locations, file names, and descriptions of trace logs that can help determine the source of problems with agents.

Table 2. Trace log files for troubleshooting agents		
System where log is located	**File name and path**	**Description**
On the computer that hosts the monitoring agent See Definitions of variables for descriptions of the variables in the file names in column two.	The RAS1 log files are named *hostname*_sa_*instance_program_timestamp*-*nn*.log and are in the following path: • **On Windows:** *install_dir*\tmaitm6\logs • **On UNIX:** *install_dir*/logs **Note:** File names for RAS1 logs include a hexadecimal timestamp. **Also on UNIX, a log with a decimal timestamp is provided in the *install_dir/logs* path:** • *hostname*_sa_*timestamp*.log and • *hostname*_sa_*timestamp*.pid*nnnnn*, where *nnnnn* is the process ID number • *instance*-TEMS*hostname*:ksagent.log	Traces activity of the monitoring agent.
	The *.LG0 log files are named *instance_hostname*_mySAP.LG0. These files are in the following path: • **On Windows:** *install_dir*\tmaitm6\logs • **On UNIX:** *install_dir*/logs	A new version of this file is generated every time the agent is restarted. IBM Tivoli Monitoring generates one backup copy of the *.LG0 file with the tag .LG1. View .LG0 to learn about the following details of the current monitoring session: • Status of connectivity with the monitoring server. • Situations that were running, including historical data collection situations • The success or failure status of Take Action commands.

Table 2. Trace log files for troubleshooting agents (continued)		
System where log is located	**File name and path**	**Description**
On the Tivoli Enterprise Monitoring Server See Definitions of variables for descriptions of the variables in the file names in column two.	**On UNIX:** The `candle_installation.log` file in the *`install_dir`*`/logs` path. **On Windows:** The `IBM Tivoli Monitoring timestamp.log` file in the *`install_dir`*`\InstallITM` path. Unlike RAS1 log files, the name of the file shows a *decimal* timestamp. *	Provides details about products that are installed. **Note:** Trace logging is enabled by default. A configuration step is not required to enable this tracing.
	The `Warehouse_Configuration.log` file is in the following path on Windows: *`install_dir`*`\InstallITM`.	Provides details about the configuration of data warehousing for historical reporting.
	The RAS1 log file is named *`hostname`*`_ms_`*`timestamp-nn`*`.log` and is in the following path: • **On Windows:** *`install_dir`*`\logs` • **On UNIX:** *`install_dir`*`/logs` **Note:** File names for RAS1 logs include a hexadecimal timestamp **Also on UNIX, a log with a decimal timestamp is provided:** *`hostname`*`_ms_`*`timestamp`*`.log` and *`hostname`*`_ms_`*`timestamp`*`.pid`*`nnnnn`* in the *`install_dir/logs`* path, where *nnnnn* is the process ID number.	Traces activity on the monitoring server.
On the Tivoli Enterprise Portal Server See Definitions of variables for descriptions of the variables in the file names in column two.	The RAS1 log file is named *`hostname`*`_cq_`*`timestamp-nn`*`.log` and is in the following path: • **On Windows:** *`install_dir`*`\logs` • **On UNIX:** *`install_dir`*`/logs` **Note:** File names for RAS1 logs include a hexadecimal timestamp **Also on UNIX, a log with a decimal timestamp is provided:** *hostname*_cq_*timestamp*.log and *hostname*_cq_*timestamp*.pid*nnnnn* in the *install_dir/logs* path, where *nnnnn* is the process ID number.	Traces activity on the portal server.
	The TEPS_ODBC.log file is in the following path on Windows: *`install_dir`*`\InstallITM`.	When you enable historical reporting, this log file traces the status of the Warehouse Proxy agent.

Table 2. Trace log files for troubleshooting agents (continued)		
System where log is located	**File name and path**	**Description**
Definitions of variables for RAS1 logs: • *hostname* is the host name of the computer on which the agent is running. • *install_dir* represents the directory path where you installed the IBM Tivoli Monitoring component. *install_dir* can represent a path on the computer that hosts the monitoring server, the monitoring agent, or the portal server. • *product* is the 2-character product code. For SAP agent, the product code is sa. • *instance* is the 3-character identifier of the mySAP system that you are monitoring. • *program* is the name of the program that is run. • *timestamp* is an eight-character hexadecimal timestamp that represents the time at which the program started. • *nn* is a rolling log suffix. See "Log file naming and examples" on page 7 for details of log rolling. • TEMS*hostname* is the host name that you specify during agent configuration for the Tivoli Enterprise Monitoring Server.		

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

Examples of trace logs

You can analyze trace logs to determine a solution for your problems.

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

Example one

This excerpt shows the typical.LG0 log for a failed connection between a monitoring agent and a monitoring server with the host name **server1a**:

```
(Thursday, August 11, 2005, 08:21:30-{94C}kdcl0cl.c,105,"KDCL0_ClientLookup") status=1c020006,
    "location server unavailable", ncs/KDC1_STC_SERVER_UNAVAILABLE
(Thursday, August 11, 2005, 08:21:35-{94C}kraarreg.cpp,1157,"LookupProxy") Unable to connect to
    broker at ip.pipe:: status=0, "success", ncs/KDC1_STC_OK
(Thursday, August 11, 2005, 08:21:35-{94C}kraarreg.cpp,1402,"FindProxyUsingLocalLookup") Unable
    to find running CMS on CT_CMSLIST <IP.PIPE:#server1a>
```

Example two

The following excerpts from the trace log *for the monitoring server* show the status of an agent, identified here as "Remote node." The name of the computer, which is where the agent is running is **SERVER5B**:

```
(42C039F9.0000-6A4:kpxreqhb.cpp,649,"HeartbeatInserter") Remote node SERVER5B:KSA is ON-LINE.
. . .
(42C3079B.0000-6A4:kpxreqhb.cpp,644,"HeartbeatInserter") Remote node SERVER5B:KSA is OFF-LINE.
```

Note the following key points about the preceding excerpt:

- The monitoring server appends the **KSA** product code to the server name to form a unique name (SERVER5B:KSA) for this instance of SAP agent. This unique name distinguishes multiple monitoring products that might be running on **SERVER5B**.
- The log shows when the agent started (ON-LINE) and later stopped (OFF-LINE) in the environment.
- For the sake of brevity, an ellipsis (...) represents the series of trace log entries that were generated while the agent was running.

- Between the ON-LINE and OFF-LINE log entries, the agent was communicating with the monitoring server.
- The ON-LINE and OFF-LINE log entries are always available in the trace log. All trace levels that are described in “Manually setting RAS trace parameters” on page 15provide these entries.

On Windows, you can use the following method to view trace logs:

1. In the Windows **Start** menu, choose **Program Files** > **IBM Tivoli Monitoring** > **manage Tivoli Monitoring Service**. The **Manage Tivoli Enterprise Monitoring Services** window is shown.
2. Right-click a component and select **Advanced** > **View Trace Log** in the menu. The program shows the Select log file window that lists the RAS1 logs for the monitoring agent.
3. Select a log file from the list and click **OK**. You can also use this viewer to access remote logs.

   Note: The viewer converts timestamps in the logs to a readable format.

RAS trace parameters

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

To ensure that you reference the correct log files when you manage log file generation, see “Examples of trace logs” on page 11.

Dynamic modification of trace settings

You can manually edit the RAS1 trace logging parameters.

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

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

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

ras1

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

The syntax is as follows:

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

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

Command options

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

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

Parameters

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

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

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

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

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

ANY
Turns off tracing.

Detail
Displays detailed information about each function. When entered with the list option, the trace is tagged with Det.

ERROR
Logs internal error conditions. When entered with the list option, the trace is tagged with ER. The output can also be tagged with EVERYE+EVERYU+ER.

Flow
Displays control flow data for each function entry and exit. When entered with the list option, the trace is tagged with Fl.

INPUT
Displays input data for each function. When entered with the list option, the trace is tagged with IN.

Metrics
Displays metrics on each function. When entered with the list option, the trace is tagged with ME.

OUTPUT
Displays output data for each function. When entered with the list option, the trace is tagged with OUT.

State
Displays the status for each function. When entered with the list option, the trace is tagged with St.

Example

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

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

Turning on tracing

To use the tracing utility, you must use a local logon credential for the computer. This tracing method uses the IBM Tivoli Monitoring Service Console. Access the Service Console by using a web browser.

About this task

When you start the Service Console, information is displayed about the components that are currently running on that computer. For example, these components are listed as follows:

- Tivoli Enterprise Portal Server: `cnp`
- Monitoring Agent for Windows OS: `nt`
- Tivoli Enterprise Monitoring Server: `ms`

After you log on, you can type a question mark (?) to display a list of the supported commands. Use the **`ras1`** command to modify trace settings. If you type this command in the field provided in the **Service Console** window and click **Submit**, the help for this command is displayed.

Procedure

1. Open a web browser and enter the URL to access the Service Console:

   http://hostname:1920, where hostname is the IP address or host name of the computer on which the IBM Tivoli Monitoring component is running.
2. Click the hyperlink associated with the component for which you want to modify its trace settings.

   Note: In the previous view, if you want to modify tracing for the Tivoli Enterprise Monitoring Server, select IBM Tivoli Monitoring Service Console under Service Point: system.your host name_ms.
3. Enter a user ID and password to access the system. This ID is any valid user that has access to the system.
4. Enter the command to turn on the required level of trace for the specified component classes or units.

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

   For example, to turn on the control flow trace for the KDE, the command is: **`ras1 (COMP:KDE Flow)`**

Turning off tracing

You can use the IBM Tivoli Monitoring Service Console to run the **`ras1`** command and dynamically turn off tracing.

Procedure

1. Open a web browser and enter the URL to access the Service Console:

   http://hostname:1920, where hostname is the IP address or host name of the computer on which the IBM Tivoli Monitoring component is running.
2. Click the hyperlink associated with the component for which you want to modify its trace settings.
3. Enter a user ID and password to access the system. This ID is any valid user that has access to the system.
4. Enter the command to turn off the required level of trace for the specified component classes or units.

   ```
   ras1 set (UNIT|COMP: class_name ANY)
   {(UNIT|COMP: class_name ANY)}
   ```

   For example, to turn off tracing for the kbbcrcd class of the Windows OS agent, the command is: **`ras1 set (UNIT:kbbcrcd ANY)`**

Manually setting RAS trace parameters

You can manually edit the RAS1 trace logging parameters.

Before you begin

See “Overview of log file management” on page 7 to ensure that you understand log rolling and can reference the correct log files when you are managing log file generation.

About this task

The SAP agent uses RAS1 tracing and generates the logs described in.“Principal trace log files” on page 8. The default RAS1 trace level is ERROR.

Procedure

1. Specify RAS1 trace options by changing trace parameters in a control file. See “Control files” on page 16.
2. Open the trace options file.
   - On Windows systems:

     install_dir\tmaitm6\KSAENV
   - On UNIXsystems:

     ```
     export KBB_RAS1='ERROR (UNIT:ksa ALL) (UNIT:kra ALL)'
     ```
3. Edit the line that begins with **KBB_RAS1=** to set trace logging preferences.
   For example, if you want detailed trace logging, set the **Maximum Tracing** option:
   - On Windows systems:

     ```
     KBB_RAS1=ERROR (UNIT:ksa ALL) (UNIT:kra ALL)
     ```
   - On UNIX systems:

     ```
     export KBB_RAS1='ERROR (UNIT:ksa ALL) (UNIT:kra ALL)'
     ```
4. Edit the line that begins with **KBB_RAS1_LOG=** to manage the generation of log files:
   - Edit the following parameters to adjust the number of rolling log files and their size.
     - **MAXFILES**: the total number of files that are to be kept for all startups of a program. When this value is exceeded, the oldest log files are discarded. Default value is 9.
     - **LIMIT**: the maximum size, in megabytes (MB) of an RAS1 log file. Default value is 5.

   IBM Software Support might guide you to modify the following parameters:

   - **COUNT**: the number of log files to keep in the rolling cycle of one program startup. Default value is 3.
   - **PRESERVE**: the number of files that are not to be reused in the rolling cycle of one program startup. Default value is 1.

   The **KBB_RAS1_LOG** parameter also provides for the specification of the log file directory, log file name, and the inventory control file directory and name. Do not modify these values or log information can be lost.
5. Restart the monitoring agent so that your changes take effect.

What to do next

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

Regularly prune log files other than the RAS1 log files in the **logs** directory. Unlike the RAS1 log files, which are pruned automatically, other log files can grow indefinitely. For example, the logs in "Principal trace log files" on page 8 that include a process ID number (PID).

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

Control files

You use the RAS1 trace options to change the trace parameters in a control file.

There are two types of control files:

- Default control files

  These control files contain parameters that are used when a new instance of the agent is configured.
- Instance control files

  These control files contain parameters that are used for the instance of the agent that have been configured already.

The control file names and locations are as follows:

- On Windows systems:
  - Default file: KSAENV
  - Instance specific file: KSAENV_*3-character-id*
- On UNIX systems:
  - Location *install_dir*/config
  - Default file: sa.ini
  - Instance specific file: *sa_3-character-id*.config

Note: When you change trace parameters to collect more detailed diagnostic information, change the instance specific control file.

Setting trace options by using the GUI

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

About this task

You can set multiple RAS tracing options by using the GUI.

Procedure

1. Open the **Manage Tivoli Enterprise Monitoring Services** window.
2. Select **Advanced** > **Edit Trace Parms**. The **Tivoli Enterprise Monitoring Server Trace Parameters** window is shown.

   On UNIX systems only, you use the Configure window to set the trace parameters.
3. Select a new trace setting in the menu in the **Enter RAS1 Filters** field or type a valid string.
   - General error tracing. KBB_RAS1=ERROR
   - Intensive error tracing. KBB_RAS1=ERROR (UNIT:ksa ALL)
   - Maximum error tracing. KBB_RAS1=ERROR (UNIT:ksa ALL) (UNIT:kra ALL)

   Note: As this example shows, you can set multiple RAS tracing options in a single statement.
4. Modify the value for "Maximum Log Size Per File (MB)" to change the log file size (changes LIMIT value).

5. Modify the value for "Maximum Number of Log Files Per Session" to change the number of logs files per startup of a program (changes COUNT value).
6. Modify the value for "Maximum Number of Log Files Total" to change the number of logs files for all startups of a program (changes MAXFILES value).
7. Click Y (Yes) in the **KDC_DEBUGd Setting** menu to log information that can help you diagnose communications and connectivity problems between the monitoring agent and the monitoring server.

   The **KDC_DEBUG** setting and the **Maximum error tracing** setting can generate a large amount of trace logging. Use them only temporarily, while you are troubleshooting problems. Otherwise, the logs occupy excessive amounts of hard disk space.
8. Click **OK**. You see a message that reports a restart of the monitoring agent so that your changes take effect.

What to do next

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

Regularly prune log files other than the RAS1 log files in the `logs` directory. Unlike the RAS1 log files that are pruned automatically, other log types can grow indefinitely. For example, the logs in "Overview of log file management" on page 7 that include a process ID number (PID).

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

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

Setting trace parameters for the Tivoli Enterprise Console server

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

About this task

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

Procedure

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

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

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

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

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

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

RFC tracing

RFC racing is used to create trace log files that stores the RFC communication that occurs between SAP agent and mySAP. These logs are analyzed by IBM Software Support to solve problems with your system.

The SAP agent uses RFC tracing and generates logs described below. New RFC trace logs are created each time an instance of the agent starts.

By default, the RFC trace logs are on the computer that hosts the agent. These trace logs are also in the directory in which the agent start command is issued:

- Windows: The trace log is created in `\WINDOWS\System32` where the agent runs as a service.
- UNIX: The trace log is created in *`install_dir`*`/bin` if you use the **`./itmcmd`** command.

To specify the directory where the RFC trace logs must be stored, set the **`RFC_TRACE_DIR`** environment variable.

By default, RFC trace logs are stored in the following directory:

- Windows operating system: `install_dir\tmaitm6\logs\instancename`
- UNIX: `install_dir/logs/instancename`

You can set the **`RFC_TRACE_DIR`** environment variable to store the RFC trace logs at your preferred location. Use the following files to set the environment variable:

- Windows operating system: `install_dir\tmaitm6\KSAENV_instancename`
- UNIX: `install_dir/config/sa_instancename.config`

The RFC trace logs are named as follows:

```
rfcpid_threadid.trc
```

Where:

pid
Process ID of the mySAP agent executable (ksaagent)

threadid
Thread id

For example:

```
rfc02536_00420.trc
```

IBM Software Support applies specialized knowledge to analyze trace logs to determine the source of problems.

Enabling and disabling RFC tracing

You can enable and disable RFC tracing on UNIX and Windows systems.

Before you begin

RFC tracing is turned off by default. Turn RFC tracing on temporarily while you are troubleshooting an RFC problem.

About this task

Pinpoint a mySAP RFC problem by setting detailed tracing of all RFC calls from the SAP agent (RFC client) to the mySAP system (RFC server).

To enable or disable RFC tracing for the SAP agent on UNIX systems, you either complete the procedure to reconfigure the agent or to manually edit the configuration file. On Windows systems, you reconfigure the agent only.

Procedure

1. To reconfigure the agent, complete one of the following procedures:
   - On Windows systems:
   a) In the **Start** menu, choose **Program Files** > **IBM Tivoli Monitoring** > **Manage Tivoli Monitoring Services**. The **Manage Tivoli Enterprise Monitoring Services** window is shown.
   b) Right-click the row that contains the name of the monitoring agent for which you want to enable RFC tracing.
   c) Select **Reconfigure**.
   d) In the first and second configuration windows, without changing any settings, click **OK**
   e) To enable tracing, select the **RFC Trace** check box.
   f) Alternatively, to disable tracing, clear the **RFC Trace** check box.
   g) Click **OK**. The agent is re configured and stopped.
   h) Restart the agent from the **Manage Tivoli Enterprise Monitoring Services** window. A restart is necessary for the setting to take effect.
   - On UNIX systems:
   a) Go to the *install_dir*/bin directory.
   b) Run the following command: **./itmcmd config -A -o Identifier sa** where Identifier is the Unique system identifier for the agent.
   c) For all of the configuration prompts, press Enter, without changing the settings that you already configured.
   d) At the **RFC Trace Flag**: prompt, enter one of the following options:
   - 1 to enable tracing
   - 0 to disable tracing
2. On UNIX systems only, you set the **SAPTRACE** environment variable in the **Configure** window.
   a) Open the following configuration file: *install_dir*/config/sa_3-character-ID.config
   b) Edit the line that begins with SAPTRACE= to set RFC trace preferences as follows:
   - Set SAPTRACE to 0 to disable RFC Trace. (default)
   - Set SAPTRACE to 1 to enable RFC Trace.
3. Restart the monitoring agent so that your changes take effect.

What to do next

- Because trace logs use a large amount of hard disk space, turn off detailed logging when you complete an analysis of RFC trace logs.
- Monitor the size of the RFC trace log directory to prevent RFC trace activity from occupying too much hard disk space. Regularly prune the trace log files because they might grow indefinitely.

RFC trace log problems

RFC trace log problems contains a description of trace log problems and solutions also.

Table 3 on page 20 contains problems and solutions for RFC trace log problems that might occur with the SAP agent.

Table 3. Trace log problems

Problem	Solution
RFC trace logs are filling up %SystemRoot%\system32	Trace logs use a large amount of hard disk space. Turn on RFC tracing only when you are trying to debug a problem. When you complete an analysis, turn off detailed logging and store the trace logs in another file system.
Clicking **View RFC Trace** in the configuration window displays the wrong RFC trace log.	The **View RFC Trace** option shows the RFC trace log with the most recent timestamp. If you are running more than one instance of the SAP agent on the same host, a more recent trace log associated with the other agent instance might be shown. To avoid showing the wrong file, turn on the RFC trace option for one SAP agent. Turn on this trace option at a time when agents are running on the same computer. Use a text editor to view the trace logs manually.

The procedure for starting the SAP agent: Trace Parameters window in "Manually setting RAS trace parameters" on page 15 fails.	This problem occurs when the trace options are missing from the configuration file. You can correct the problem as follows:
	1. Edit a configuration file with the following path name:
	• On Windows systems: *install_dir*\tmaitm6\KSAENV_*3-character-id*
	• On UNIX and Linux systems: *install_dir*/config/sa_*3-character-id*.config
	2. Copy the following configuration setting into the file:
	• On Windows systems:
	`KBB_RAS1=ERROR`
	`KBB_VARPREFIX=%`
	`KBB_RAS1_LOG=`*install_dir*`\tmaitm6\logs / \%(computername)_sa_%(SAPSYSTEMNAME)_ksaagent_%(sysutcstart) / -.log INVENTORY=`*install_dir*`\tmaitm6\logs\ / %(computername)_sa_%(SAPSYSTEMNAME)_ksaagent.inv / COUNT=03 LIMIT=5 PRESERVE=1 MAXFILES=9`
	• On UNIX and Linux systems:
	`KBB_RAS1='ERROR'`
	`KBB_VARPREFIX='%'`
	`KBB_RAS1_LOG='%(CTIRA_LOG_PATH)/`*hostname*`_sa_%(SAPSYSTEMNAME) \ _%(syspgm)_%(sysutcstart)-.log INVENTORY=%(CTIRA_LOG_PATH)/ \ <hostname>_sa_%(SAPSYSTEMNAME)_%(syspgm).inv COUNT=03 LIMIT=5 \ PRESERVE=1 MAXFILES=9'`
	3. Save your changes.
	4. Repeat the "Manually setting RAS trace parameters" on page 15 procedure. The Tivoli Enterprise Monitoring Server: Trace Parameters window is shown.

Chapter 3. Problems and workarounds

There are many workarounds for problems that you encounter with your system.

The following sections provide symptoms and workarounds for problems that might occur with the SAP agent:

Note: You can resolve some problems by ensuring that your system matches the system requirements listed in the *ITCAM Agent for SAP Applications Installation and Configuration Guide*.

This appendix provides agent-specific troubleshooting information. See the *IBM Tivoli Monitoring Troubleshooting Guide* for general troubleshooting information.

Installation and configuration troubleshooting

To troubleshoot installation, configuration, and uninstallation problems, you might apply a fix pack, change parameters, or uninstall monitoring agents. You must determine an appropriate solution for the specific problem with your system.

This section provides tables that show solutions for problems related to the installation, configuration, and uninstallation of agents. Some of these problems are related to the operating system on which the agent is running. Other problems are specific to installation and configuration of the SAP agent.

Problems and solutions for installation and configuration for agents that run on Unix and Windows systems

Table 4. Problems and solutions for installation and configuration for agents that run on UNIX and Windows systems

Problem	Solution
After upgrading to IBM Tivoli Monitoring, you do not have all of the functionality that IBM Tivoli Monitoring offers.	You might need to apply fix packs to Candle, Version 350, agents. Fix packs for Candle, Version 350, are delivered as each monitoring agent is upgraded to IBM Tivoli Monitoring. If you do not upgrade the monitoring agent to IBM Tivoli Monitoring, the agent continues to work. However, you must upgrade to have all the functionality that IBM Tivoli Monitoring offers. **Note:** The IBM Tivoli Monitoring download image or CD provides application fix packs 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 upgrade software for other agents is on the download image or CDs for that specific monitoring agent, such as the agents for database applications.

Table 4. Problems and solutions for installation and configuration for agents that run on UNIX and Windows systems (continued)

Problem	Solution
Non-ASCII characters entered into the configuration window for the monitoring agent do not show up or are not the correct characters.	Enter only ASCII characters into these fields.
You installed IBM Tivoli Monitoring V6.2.2 Fix Pack 5 and after you deploy the SAP agent you get the following error: "An `error occurred during password encryption. Return code: 44.`"	This problem occurs only when you install IBM Tivoli Monitoring V6.2.2 Fix Pack 5. The problem is addressed in the latest IBM Tivoli Monitoring fix pack. Update to one of the following versions; IBM Tivoli Monitoring V6.2.2 Fix Pack 8, 623, 623FP1.
During the command-line installation on UNIX, you choose to install a component that is already installed, and you see the following warning: `WARNING - you are about to install the SAME version of "component"` where *component* is the name of the component that you are attempting to install.	You must exit and restart the installation process. You cannot return to the list where you selected components to install. When you run the installer again, do not attempt to install any component that is already installed.
On UNIX, while installing the agent from a CD, the following message is shown and you cannot continue the installation: `install.sh warning: unarchive of "/cdrom/unix/cienv1.tar" may have failed`	This error is caused by low disk space. Although the install.sh script indicates that it is ready to install the agent software, the script considers the size of all tar files. The script does not consider the size of all the files that are contained within the tar file. Run the **`df -k`** command to check whether the file systems have enough space to install agents.
Cannot locate the **KDCB0_HOSTNAME** setting.	Go to `install_dir/config` and edit the `sa_3-character-id.config` file. Set the **KDCB0_HOSTNAME** parameter to the IP address of a network card on this computer. If you use multiple network interface cards (NICs), use the Primary IP address of the network interface.
The SAP agent repeatedly restarts.	You can collect data to analyze this problem as follows: 1. Access the `install_dir/config/sa_3-character-id.config` file, which is described in "Manually setting RAS trace parameters" on page 15. 2. Add the following line: `KBB_SIG1=trace –dumpoff`
Agents in the monitoring environment use different communication protocols. For example, some agents have security enabled and others do not.	Configure both the monitoring server and the Warehouse Proxy server to accept multiple protocols, as described in the *IBM Tivoli Monitoring Installation and Setup Guide*.

Table 4. Problems and solutions for installation and configuration for agents that run on UNIX and Windows systems (continued)

Problem	Solution
The agent is not able to connect to the Tivoli Enterprise Monitoring Server through a firewall.	**Creating a firewall partition file:** The partition file enables an agent to connect to the monitoring server through a firewall. **How it works:** When the agents start, they search KDCPARTITION.TXT for the following matches: • An entry that matches the partition name OUTSIDE • An entry that also includes a valid external address For more information, see the *IBM Tivoli Monitoring Installation and Setup Guide*.
You successfully upgraded from an OMEGAMON® monitoring agent to IBM Tivoli Monitoring, Version 6.2.0. However, when you configure historical data collection, you receive an error message that includes the following message: `Attribute name may be invalid, or attribute file not installed for warehouse agent`.	Copy the attribute files (ksa.atr) for the upgraded monitoring agent to *install_dir*\tmaitm6\attrlib on the computer where you installed the Warehouse Proxy agent. The Warehouse Proxy agent must be able to access the short attribute names for tables and columns. Therefore, if the longer versions of these names exceed the limits of the Warehouse database, the shorter names can be substituted.
The monitoring agent does not start in a non-ASCII environment.	Check the agent configuration to ensure that all of the values are correctly represented. To view these parameters, go to the Manage Tivoli Enterprise Monitoring Services window, select the agent instance, and click **Reconfigure**. In the subsequent windows, review and modify configuration parameters as needed.
Browse settings problems: how to diagnose	When you have problems with browse settings, complete the following steps: 1. Click **Start** > **Programs** > **IBM Tivoli Monitoring** > **Manage Tivoli Monitoring Services**. The **Manage Tivoli enterprise Monitoring Services** window is shown. 2. Right-click the Windows agent and select **Browse Settings**. A text window is shown. 3. Click **Save As** and save the information in the text file. If requested, you can forward this file to IBM Software Support for analysis.
A message similar to "Unable to find running CMS on CT_CMSLIST" in the log file is shown.	If a message similar to "Unable to find running CMS on CT_CMSLIST" is shown in the Log file, the agent cannot connect to the monitoring server. Confirm the following points: • Do multiple network interface cards (NICs) exist on the system? • If multiple NICs exist on the system, find out which one is configured for the monitoring server. Ensure that you specify the correct host name and port settings for communication in the IBM Tivoli Monitoring environment.
Error counts are shown in the situation summary report in the Tivoli Enterprise Portal, however, error messages are not shown in the situation detail report.	Check the timestamp for the reports. If you set up historical data collection for the situation summary report, also set up historical data collection for the situation detail report.

Table 4. Problems and solutions for installation and configuration for agents that run on UNIX and Windows systems (continued)

Problem	Solution
While you are using the remote deployment feature to install the SAP agent, an empty command window is shown on the target computer. This problem occurs when the target of remote deployment is a Windows computer. (See the *IBM Tivoli Monitoring Installation and Setup Guide* for more information about the remote deployment feature.)	Do not close or modify this window. It is part of the installation process and is dismissed automatically.
The removal of a monitoring agent fails when you use the remote removal process in the Tivoli Enterprise PortalTivoli Enterprise Portal desktop or browser.	This problem might occur when you attempt the remote removal process immediately after you restart the Tivoli Enterprise Monitoring Server. You must allow time for the monitoring agent to refresh its connection with the Tivoli Enterprise Monitoring Server before you begin the remote removal process.
You cannot connect to the SAP system by using the Logon Group mode.	Use the following new environment variables: • *SAPLOGONGROUP*: Name of the SAP logon group. • *SAPMSGSERVER*: Host name of the SAP message server. Alternatively, use an IP address. • *SAPMSGSERVICE*: Message service name, for example, **sapmsTV1** or a full message service port number, for example, **example: 3601**. • *SAPROUTESTRING*: Route string to the SAP system. **Note:** You must include the service names in the following operating system services files: • `UNIX systems: /etc/services` • `Windows systems: \windows\systems32\drivers\etc \services`
When you edit the configuration for an existing monitoring agent, the values shown are not correct.	The original configuration settings might include non-ASCII characters. These values were stored incorrectly and result in the incorrect display. Enter new values by using only ASCII characters.
Runtime errors in relation to transport on the SAP system.	When you import the transport on the SAP system, you must not start the SAP agent instance that is configured to monitor that SAP system. Before you delete the transport from the SAP system, you must stop the SAP agent instance that is configured to monitor that SAP system.

Table 4. Problems and solutions for installation and configuration for agents that run on UNIX and Windows systems (continued)

Problem	Solution
Text for configuration functions is shown in English instead of native languages when installing and configuring the monitoring agent. For example, when using the following interfaces: • Manage Tivoli Enterprise Monitoring Services GUI on a Windows system • Manage Tivoli Enterprise Monitoring Services GUI (CandleManage command) on UNIX and Linux • **itmcmd config** command on a UNIX or Linux system	None. You must complete configuration of the monitoring agent by using English.
On SAP NetWeaver 7.0 with SAP Basis version 700, import of transport fails, and an ABAP dump is generated with the following error message: `"DDIC_TYPELENG_INCONSISTENT" having short text as "Inconsistency in length of DDIC data type "SWNCGLAGGUSERTCODE"."`	Complete the steps that are provided in SAP note 1610716 - Correcting runtime objects with the wrong alignment.
An IBMMON_AGENT user is not created when the complex password policy is applied after importing transport.	Complete the following steps to configure the agent user password and communication type when you import the transport: 1. Create the `transport.prop` file at the SAP `DIR_TRANS/bin` path. **Remember:** By default, `DIR_TRANS` value is `/usr/sap/trans` on UNIX or Linux systems and `C:/usr/sap/trans` on Windows systems. To retrieve the value of `DIR_TRANS`, execute the `RZ11` transaction code on the SAP system with the `DIR_TRANS` value as input in the **Param.Name** field. 2. To change the default password, add `password=<YourPassword>` in the `transport.prop` file, where YourPassword is the password that you would like to change to. 3. To change the communication type of the user, add `logontype=<YourCommunicationType>` in the `transport.prop` file. For example, logontype=C 4. Save the changes, and grant read and write authority to the corresponding SAP admin user. 5. Import the ABAP transport. The user for mySAP agent is created as a communication user and not as a system user.

Table 4. Problems and solutions for installation and configuration for agents that run on UNIX and Windows systems (continued)

Problem	Solution
The IBMMON_AGENT user is created but the following error is displayed in the test connection: `No RFC Authorization for function module RFCPING`	To resolve this issue, complete the following steps: 1. Add the SYST function group to RFC authorization. 2. Add the SYST function group to the SAP_BC_WEBSERVICE_SERVICE_USER default role in the authorizations for Cross-application Authorization Objects in the *Authorization Check for RFC Access* area and the *Name of RFC object to be protected* object. 3. Save and activate the role. 4. Execute the user comparison for the role. 5. Check whether the /IBMMON/AUTH profile is assigned to the user. 6. Check whether /IBMMON/AUTH profile is created. 7. If the profile is not created, then create it and assign the following roles to this profile: • S_ADMI_FCD <OBJ> System Authorization • S_BTCH_JOB <OBJ> Background Processing: Operations on Background Jobs • S_CCM_RECV <OBJ> Authorizations for Transferring Central SysRepos Data • S_C_FUNCT <OBJ> C Calls in ABAP programs • S_DATASET <OBJ> Authorization for file access • S_RFC <OBJ> Authorization Check for RFC Access • S_RFCACL <OBJ> Authorization check for RFC user (ex. Trusted system) • S_RZL_ADM <OBJ> CCMS: System Administration • S_TOOLS_EX <OBJ> Tools Performance Monitor 8. Assign the profile created to the IBMMON_AGENT user. For more information, see the SAP note 1108662.

Table 4. Problems and solutions for installation and configuration for agents that run on UNIX and Windows systems (continued)	
Problem	**Solution**
On a single host system (without clustering) with multiple mySAP instances, the managed system name changes every day.	This agent behavior is expected. When you start the agent, it retrieves the database host name from the data that the /IBMMON/ITM_HOSTS function module returns for the subsystem ID in the managed server name (MSN). The agent registers this name for displaying on the Tivoli Enterprise Portal. If the agent fails to register this name, then the agent retrieves the SAP host name for the subsystem ID part instead of database host name. Whenever the agent uses the SAP host name instead of database host name the RFC communication fails with the following error message: `No RFC authorization for function module RFCPING due to which it is not able to register the MSN with dbhostname and hence going for the second option that is to take the SAPHOSTname instead of dbhostname.`
The IBMMON_AGENT user is locked.	Complete the following steps to unlock the user: 1. Execute the `SU01` transaction code. 2. In the **User** field, type `IBMMON_AGENT`. 3. Click the **Unlock** icon or press F7.
After the SAP administrator imports the transport, the log of import job contains the following error message: `You are not authorized to create users`	The SAP administrator who imported the transport is not authorized to create another IBMMON_AGENT user. Provide the required authorization to the SAP administrator for creating another IBMMON_AGENT user, and then import the transport.

Problems and solutions for installation and configuration of the SAP agent

Table 5. Problems and solutions for installation and configuration of the SAP agent	
Problem	**Solution**
You cannot add the SAP agent transport request to the buffer through STMS. Cannot enter the full mySAP transport name in the transport system window.	Upgrade the SAP transport tool to the latest version. Although 20-character transport request names are fully supported by SAP from Basis release 4 and later releases, some release 4.6 transport system windows still have fields that are only 10 characters wide. Import transport by running the **`addtobuffer`** command from the command line. See the "Importing the Advanced Business Application Programming (ABAP) transport on the SAP system" in the *ITCAM Agent for SAP Applications Installation and Configuration Guide*.

Table 5. Problems and solutions for installation and configuration of the SAP agent (continued)	
Problem	**Solution**
You cannot upgrade the SAP agent on the UNIX platform.	On the UNIX platform, if the host name is greater than 8 digits you cannot upgrade the SAP agent from version 6.2 to 7.1.1 Fix Pack 4. Also, you cannot start and stop the agent. To solve this problem, complete the following steps: 1. For the UNIX platform, add or edit the *CTIRA_SYSTEM_NAME* variable in the `sa_<Instance ID>.config` file and the `sa.ini` file to your host name. For example, *CTIRA_SYSTEM_NAME*=sh2hp11v3i4 2. Complete the steps to upgrade and to start and stop the agent again.
You cannot upgrade the SAP agent on the Solaris 9 32-bit SPARC platform.	On the Solaris 9 32-bit SPARC platform, you cannot upgrade the SAP agent from version 6.2 to 7.1.1 Fix Pack 4. To solve this problem, complete the following steps: 1. For the Solaris 9 32-bit SPARC platform, add or edit the *CTIRA_SYSTEM_NAME* variable in the `sa_<Instance ID>.config` file and the `sa.ini` file to your host name. For example, *CTIRA_SYSTEM_NAME*=sh5sol9 2. Complete the steps to upgrade and to start and stop the agent again.
No data is shown in the Tivoli Enterprise Portal, though the monitoring agent is started and running.	Check the following issues: 1. Click the agent level node of the Navigator tree that opens the System Summary workspace by default. Right-click, and open the Agent Log workspace and check for messages. For more information, see the "Agent Log workspace" section in the *ITCAM Agent for SAP Applications Reference Guide*. 2. Check the SAP agent log files to see whether there are problems when you try to connect to the Tivoli Enterprise Monitoring Server like those problems mentioned in "Agent unable to connect" in the "Agent troubleshooting" section. 3. Check the agent RAS1 log for RFC or connection errors to the mySAP system. 4. Check the mySAP system syslog to see whether the SAP agent issued a diagnostic message. This message alerts you to a problem during data collection. 5. If there are no connection problems, check whether the agent terminated. (Search for the word "terminated" in the log.) 6. If the agent is not terminated, confirm that you added application support for the SAP agent in the Tivoli Enterprise Monitoring Server as described in the *IBM Tivoli Monitoring Installation and Setup Guide*. 7. Make sure that the agent transport is installed to the SAP system, and that the corresponding version of the SAP agent is installed.

Table 5. Problems and solutions for installation and configuration of the SAP agent (continued)

Problem	Solution
Value lists such as report names, monitors, and monitor sets are shown in English in the following mySAP configuration panels: • Maintain Default Sample Periods • Maintain Log File Names • Maintain ITM Managed Groups Definitions • Select CCMS Monitor Sets and Monitors	This outcome is expected. These value lists are presented in English only regardless of the SAP logon language.
Text strings, such as syslog messages and alert messages do not show correctly in non-English languages. This problem is more likely to occur with double-byte languages.	Set the *SAP_CODEPAGE* environment variable. For more information, see the "Manually setting RAS trace parameters" section in the *ITCAM Agent for SAP Applications Troubleshooting Guide*.
Text in the SAP agent configuration panels on a mySAP system does not show in the multi-byte language with which you logged on to mySAP.	Ensure that you logged on to the mySAP system or SAPGUI by using a supported language. See the "Language" section in the "Configuring the SAP agent locally" in the *ITCAM Agent for SAP Applications Installation and Configuration Guide* for a list of the languages that the SAP agent supports. Ensure that you installed NLS support for the mySAP transport text elements. For more information, see the "Non-Unicode double-byte language support" section in the *ITCAM Agent for SAP Applications Installation and Configuration Guide*.
Agent transport errors	• Update the following SAP kernel executables to the latest level: – R3trans – tp • Verify that the cofile and data transport files have correct authorizations and owners: *sap*sid:sapsys • Check the syntax of the following commands: – tp addtobuffer – tp import For more information about these commands, see Step 5 in the "Using SAP transport and defining the user" section in the *ITCAM Agent for SAP Applications Installation and Configuration Guide*. • Ensure that the default user /IBMMON/ITM_AUTH roles were created during transport import. See the "Using Central User Administration (CUA)" section in the *ITCAM Agent for SAP Applications Installation and Configuration Guide* for requirements.

Table 5. Problems and solutions for installation and configuration of the SAP agent (continued)

Problem	Solution
Incorrect parameters: • Incorrect SAP host name, user ID, password, or client • SAP user specified does not exist • SAP user password is incorrect • SAP user is locked (disabled)	Change the parameter that is in error and confirm with your SAP Administrator that your parameters are correct. These problems are based on the RFC connection parameters.
On the Red Hat Enterprise Linux 64 platform, you cannot upgrade the SAP agent V 6.2 LA0009 to SAP agent version 7.1.1 Fix Pack 4	Replace the old 32-bit RFC library with the new 64-bit RFC library.
If you do not copy the RFC library to the correct path, the agent does not start and the following error is reported in the agent log: `Error in agent log: opt/IBM/ITM/ lx8266/sa/bin/ksaagent: error while loading shared libraries: libsapnwrfc.so: cannot open shared object file: No such file or directory`	For information about copying the RFC library to the correct path, see "Deploying the monitoring agent remotely in a Windows environment" section and the "Deploying the monitoring agent remotely in a non-Windows environment" section in the *ITCAM Agent for SAP Applications Installation and Configuration Guide*.
The IDML book certification fails with multiple instances.	Complete the following steps: 1. Run the /n/ibmmon/itm_config transaction on the SAP server side. 2. Select the SAP Instance Monitoring option. 3. Clear all the instances except for the central instance. 4. Generate the IDML book. 5. Select the cleared instances in step 3.
When you upgrade the SAP agent to version 7.1 Fix Pack 1, you might receive the following error: `An error occurred during password decryption. Return code:44`	In the InstallShield wizard, complete the following steps: 1. After you receive the error message, click OK. 2. On the AFUtil64.exe has stopped working page, click Close the program. 3. After you receive the following message: An instance of the service is already running., click OK. 4. Click Finish. 5. After you install the SAP agent successfully, start the SAP agent instance manually.

General problems and solutions for uninstallation

Table 6. General problems and solutions for uninstallation

Problem	Solution
On Windows, uninstallation of IBM Tivoli Monitoring fails to uninstall the entire environment.	Confirm that the following problems do not exist: • Ensure that you are the only user who is logging in to the computer where you are uninstalling IBM Tivoli Monitoring. If another user is completing operations during an uninstall process, the uninstall process fails. • Be sure that you follow the general uninstallation process described in the *IBM Tivoli Monitoring Installation and Setup Guide*: 1. Uninstall monitoring agents first, as in the following examples: – Uninstall a single monitoring agent for a specific database. OR – Uninstall all instances of a monitoring product, such as IBM Tivoli Monitoring for Databases. 2. Uninstall IBM Tivoli Monitoring.
The procedure to remove inactive managed systems (systems whose status is OFFLINE) from the Navigator tree in the portal is not obvious.	Use the following steps to remove, but not uninstall, an offline managed system from the Navigator tree: 1. In the Navigator tree, click the **Enterprise** icon. 2. Right-click, then click **Workspace** > **Managed System Status**. 3. Right-click the offline managed system, and select **Clear offline entry**. If you also want to uninstall the monitoring agent, use the procedure described in the *IBM Tivoli Monitoring Installation and Setup Guide*.
There is no configuration command or menu option to remove an instance of the SAP agent that was created and configured on a UNIX or Linux system.	Use the following steps to delete an instance of the SAP agent: 1. Stop the monitoring agent. 2. Open the `install_dir` directory. 3. Open the `config` directory. 4. Remove `sa_`**`SAPSID`**`.config` where **SAPSID** is the instance configuration parameter that was defined when the instance was configured with the following command: `itmcmd config -A -h /install_dir -o` **`SAPSID`** `sa` 5. Open the `.ConfigData` directory. 6. Edit the `ksaenv` file, removing all lines that begin with **SAPSID**. 7. Save the file, and exit.

Agent troubleshooting

You can use the appendix as a source to troubleshoot agent-specific problems.

Table 7 on page 32 contains problems that might occur with the SAP agent.

This appendix provides agent-specific troubleshooting information. See the *IBM Tivoli Monitoring Troubleshooting Guide* for general troubleshooting information.

Table 7. Agent problems and solutions

Problem	Solution
A problem can arise when you run multiple agents on one computer and want them to communicate with multiple monitoring servers, as described in this example: • Agents are running on computer and communicating with a Tivoli Enterprise Monitoring Server, called **TEMS1**. • You install a new agent on the same computer and you want this agent to communicate with a different monitoring server, called **TEMS2**. • When you configure the new agent to communicate with **TEMS2**, all the existing agents are reconfigured to communicate with **TEMS2**.	You must reconfigure the previously existing agents to restore their communication connection with **TEMS1**. For example, you can right-click the row for a specific agent in the Manage Tivoli Monitoring Services, and select **Reconfigure**. See the *IBM Tivoli Monitoring Installation and Setup Guide* for more information about reconfiguration.

Table 7. Agent problems and solutions (continued)

Problem	Solution
Agent unable to connect: The agent is started, but no data is reported to the Tivoli Enterprise Monitoring Server. The log file includes the following error: `Unable to find running CMS on CMSLIST or Endpoint unavailable`	This error message means that the agent cannot connect to the computer where the Tivoli Enterprise Monitoring Server is running. The reason might be any one of the following reasons: **Computer where the Tivoli Enterprise Monitoring Server is running is down** Ping the computer where the Tivoli Enterprise Monitoring Server is running and make sure that it is up and running. **Tivoli Enterprise Monitoring Server is not running** If the Tivoli Enterprise Monitoring Server is not running, recycle the Tivoli Enterprise Monitoring Server and verify whether the agent is connecting. **Multiple NIC Cards on the computer where the Tivoli Enterprise Monitoring Server is running.** If multiple NICs are installed on the computer where the Tivoli Enterprise Monitoring Server is running, identify the Primary NIC and use the *host name* or IP address. Verify that the Tivoli Enterprise Monitoring Server is configured with the Primary NIC IP address or *host name*. If you are using *host name*, make sure that `/etc/hosts` has a valid entry for the Primary NICs host name and its IP address. On the Tivoli Enterprise Monitoring Server, set the *KDCB0_HOSTNAME* variable to the primary IP address of the computer. Use the same address to configure the agent. To connect to the Tivoli Enterprise Monitoring Server, configure the agent with Primary NIC IP address or host name of the computer where the Tivoli Enterprise Monitoring Server is running. While configuring the agent, make sure that the port number that you are connecting to is correct. If you are not using the default port number, make sure that you are using the same port number used in Tivoli Enterprise Monitoring Server. For more information, see the *IBM Tivoli Monitoring Installation and Setup Guide*. **Agent is behind the Firewall** If you use a firewall, identify whether you have any one of the following scenarios: • Hub monitoring server INSIDE, and agents OUTSIDE • Hub and remote monitoring servers INSIDE, agents OUTSIDE • Hub monitoring server INSIDE, remote monitoring server, and agents OUTSIDE See Creating a firewall partition file for information about the **KDC_PARTITION** file that enables communication across a firewall. For additional information, see the *IBM Tivoli Monitoring Installation and Setup Guide*. **Connecting to the monitoring server through a Virtual Private Network (VPN)** In some cases, the agent or a remote monitoring server needs to connect to the hub monitoring server through a VPN. You must configure the communication channel (pipe) to be ephemeral, as in the following example: `KDC_FAMILIES=ip.pipe port:port_number ephemeral:y ip use:n sna use:n`

On UNIX, you want to have multiple instances of SAP agent running on the same computer, but communicating with different Tivoli Enterprise Monitoring Servers.	Enable multiple instances as follows:
	1. Open each instance configuration file (sa_*3-character-id*.config) in *install_dir*/config.
	2. Insert the following definition for **CT_CMSLIST**:
	`export CT_CMSLIST='ip.pipe: hostname_or_IP_address_of_TEMS'`
	3. Insert the following definition for **KDC_FAMILIES**:
	`export KDC_FAMILIES='ip.pipe port: port_number ip use:n ip.spipe use:n sna use:n'`

Table 7. Agent problems and solutions (continued)

Problem	Solution
Data collection stops or runs sluggishly on your SAP systems with Oracle databases.	See the "Oracle data collection" section in the *ITCAM Agent for SAP Applications Installation and Configuration Guide*.
When running the /IBMMON/ITM_* transactions, you get an error that indicates that the transaction is not valid.	Preface all `/IBMMON/ITM_*` transactions with `/n` or `/o`.
The SAP agent cannot connect to the mySAP system. The agent is started but no :Ins or :Sys managed system names are shown in the Tivoli Enterprise Portal Navigator tree. The log file includes the following lines: `Unable to find the Central Instance`.	See the "Agent Log workspace" section in the *ITCAM Agent for SAP Applications Reference Guide*. Ensure that you configured the agent with the correct mySAP logon information (user ID, password, client). Reconfigure, and restart. Check the RAS1 log for connection errors. An RAS1 error such as the following indicates that the agent could not log on on with the connection parameters specified during agent configuration: `Failure on call to /IBMMON/ITM_VERIFY_LOGON`. Verify that all the values are correct. See the "Configuring the Sap agent locally" section in the *ITCAM Agent for SAP Applications Installation and Configuration Guide*. Ensure that the mySAP system, application server the agent connects to, or both are running and can accept new connections. Use transactions SMGW and SM04 to determine whether there are free connections on the application server for the monitoring agent to use. Use the fully qualified host name or IP addresses if configuring the agent by using simple host names. Ensure that no firewalls are blocking access to mySAP.
The SAP agent shows up in the Tivoli Enterprise Portal Navigator tree with the wrong host name in the agent name: SID-hostname. The host name is the name of the agent host name rather than the SAP database host name.	This problem occurs when the SAP agent cannot connect to a remote mySAP system. Ensure that you configured the agent with the correct mySAP logon information (user ID, password, client). Reconfigure, and restart. To remove the agent from the Navigator tree, stop the agent if it is still running, and remove the offline Entry from the Tivoli Enterprise Portal Server.
Custom launch definitions that you create report an error that a SAP agent attribute name cannot be evaluated.	Slashes in attribute names must be escaped with an additional slash for the Tivoli Enterprise Portal to recognize them. For example, R/3_Alerts.MTE_Class must be represented as R//3_Alerts.MTE_Class in the launch definition. When you create a launch definition, use the GUI to select an attribute from the list. Or, type in the attribute names manually and escape the /.
A mySAP application server is not discovered by the SAP agent.	Check to make sure that there is at least one (preferably two) dialog process on that instance. The SAP agent requires a dialog work process in which to run the agent supplied ABAP that monitors the instance.
You receive Tivoli Monitoring alert 9912: `CCMS alerts collection did not complete`, SAP syslog message `??ccms_rfc_error????`, or both of these alerts. You might also receive ABAP dumps from the /IBMMON/ITM_ALERTS and /IBMMON/ITM_CCMS_ALERTS function modules provided by the SAP agent.	Tivoli Monitoring Alert 9912 typically indicates a problem with the mySAP CCMS rather than with the SAP agent. Review the syslog message to help troubleshoot the problem in the SAP CCMS environment. Verify that CCMS performs properly. Contact IBM Software Support to get instructions on how to reduce or prevent the monitoring agent ABAP dumps while CCMS problems are investigated.
You cannot create Japanese Managed Group names from the /IBMMON/ITM_GROUP transaction.	Group Names cannot contain double byte characters because Group Names become Managed System names in IBM Tivoli Monitoring, and double byte characters are not supported. If you would like to create Managed Groups, log on in English or another Latin language to define the Managed Groups.
The mySAP server does not start when using port 3661.	Change the current setting of KDC_FAMILIES=$NETWORKPROTOCOL$ to KDC_FAMILIES=HTTPS:0 in both of the SAP agent.configuration files (*.config and *.ini).

Table 7. Agent problems and solutions (continued)

Problem	Solution
A configured and running instance of the monitoring agent is not shown in the Tivoli Enterprise Portal. However, other instances of the monitoring agent on the same system do show in the portal.	Tivoli Monitoring products use Remote Procedure Call (RPC) to define and control product behavior. RPC is the mechanism that allows a client process to make a subroutine call (such as GetTimeOfDay or ShutdownServer) to a server process somewhere in the network. Tivoli processes can be configured to use TCP/UDP, TCP/IP, SNA, and SSL as the appropriate protocol (or delivery mechanism) for RPCs. "IP.PIPE" is the name given to Tivoli TCP/IP protocol for RPCs. The RPCs are socket-based operations that use TCP/IP ports to form socket addresses. IP.PIPE implements virtual sockets and multiplexes all virtual socket traffic across a single physical TCP/IP port (visible from the netstat command). A Tivoli process derives the physical port for IP.PIPE communications based on the configured, well-known port for the HUB Tivoli Enterprise Monitoring Server. (This well-known port or BASE_PORT is configured using the 'PORT:' keyword on the KDC_FAMILIES / KDE_TRANSPORT environment variable and defaults to '1918'.) The physical port allocation method is defined as (BASE_PORT + 4096*N) where N=0 for a Tivoli Enterprise Monitoring Server process and N={1, 2, ..., 15} for a non-Tivoli Enterprise Monitoring Server. Two architectural limits result as a consequence of the physical port allocation method: • No more than one Tivoli Enterprise Monitoring Server reporting to a specific Tivoli Enterprise Monitoring Server HUB can be active on a system image. • No more that 15 IP.PIPE processes can be active on a single system image. A single system image supports any number of Tivoli Enterprise Monitoring Server processes (address spaces) if each Tivoli Enterprise Monitoring Server on that image reports to a different HUB. There is one Tivoli Enterprise Monitoring Server HUB per monitoring Enterprise, so this architecture limit is simplified to one Tivoli Enterprise Monitoring Server per system image. No more that 15 IP.PIPE processes or address spaces can be active on a single system image. With the first limit expressed above, this second limitation refers specifically to Tivoli Enterprise Monitoring Agent processes: no more that 15 agents per system image. This limitation is circumvented (at current maintenance levels, IBM Tivoli Monitoring V6.1 Fix Pack 4 and later) if the Tivoli Enterprise Monitoring Agent process is configured to use EPHEMERAL IP.PIPE. (This is IP.PIPE configured with the 'EPHEMERAL:Y' keyword in the KDC_FAMILIES / KDE_TRANSPORT environment variable). There is no limitation to the number of ephemeral IP.PIPE connections per system image. If ephemeral endpoints are used, the Warehouse Proxy Agent is accessible from the Tivoli Enterprise Monitoring Server associated with the agents by using ephemeral connections. This is done either by running the Warehouse Proxy Agent on the same computer or by using the Firewall Gateway feature. (The Firewall Gateway feature relays the Warehouse Proxy Agent connection from the Tivoli Enterprise Monitoring Server computer to the Warehouse Proxy Agent if the Warehouse Proxy Agent cannot coexist on the same computer.)
Attributes do not allow non-ASCII input in the Situation Editor.	None. Any attribute that does not include "(Unicode)" might support only ASCII characters. For example "Attribute (Unicode)" supports unicode but "Attribute" without "(Unicode)" might support ASCII characters only.

Table 7. Agent problems and solutions (continued)

Problem	Solution

The managed system names that show up under mySAP Agent in the Tivoli Enterprise Portal are incorrect.
Your MSN is not in this form: *SID-SAP-Host*:mySAP
Your MSN is some other string, and all instances of the monitoring agent show up under this one managed system name, for example:
`agent host`
`SAP agent`
`managed system name`
`SAP`
`TV2-amsaix25_TV2_00:Ins`
`TV2-amsaix25:Sys`
`TV2-amshp8_TV2_22:Ins`
`TV3-amsaix26_TV3_01:Ins`
`TV3-amsaix26:Sys`
`TV3-amssol19_TV3h_10:Ins`
	Check to see whether CTIRA_HOSTNAME is set, either globally or in the agent configuration file, and if the MSN you see in the Tivoli Enterprise Portal under the SAP agent is the value of CTIRA_HOSTNAME. If so, do not set the environment variable CTIRA_HOSTNAME for the SAP agent. The monitoring agent cannot properly create the managed system names when this environment variable is set. If you need to set CTIRA_HOSTNAME for other monitoring agents, set the variable in the agent configuration file instead of setting it globally.

When upgrading support files for the monitoring agent from V6.1 to V6.2, the Tivoli Enterprise Portal Server upgrade reports the following message: `ksa_upg.sql completed partially. See` *`install_dir`*`\CNPS\logs\ksa_upg.sql.log file.` The ksa_upg.sql.log file shows: `SQL1_OpenRequest status=80` for each INSERT statement	None. This error is expected and does not indicate a problem. The agent support upgrade process handles both upgrades from V350 agents and V6.1 agents. The INSERT error indicates that a duplicate entry exists in IBM Tivoli Monitoring 6.1, which is expected. The insert statements are meant for upgrade from 350 agents.
On Windows systems, some instances of the monitoring agent do not start after upgrading. You receive one of the following messages when trying to start an instance: • `The service did not respond to the start or control request in a timely fashion` • `KCICF5100E Unable to start service, see Event.log for information` • `(From the event viewer) the SAP agent - foo service failed to start due to the following error: The service did not respond to the start or control request in a timely fashion.` • `Dependent Assembly Microsoft.VC80.CRT could not be found and Last Error was The referenced assembly is not installed on your system.`	Install MS 8.0 C/C++ run time. (Microsoft Visual C++ 2005 Redistributable Version 8.0). The SAP libraries used by the monitoring agent require this run time as a prerequisite. See SAP Note 684106.
On SuSE 9 and RedHat 4 Linux, instances of the monitoring agent do not start after upgrading.	Install Linux compatibility libraries that provide the libstdc++.so.6 library. The SAP libraries used by the monitoring agent require this compatibility library to be installed for the agent to run. See SAP note 1021236.
Tivoli Enterprise Console events from IBM Tivoli Monitoring V6.2 for IBM Tivoli Monitoring v5.x migrated situations have parsing errors in the Tivoli Enterprise Console server.	1. Ensure that you have IBM Tivoli Monitoring V6.2 Event Synchronization installed on your Tivoli Enterprise Console® server. 2. Obtain updated baroc files from the SAP agent events. Updated baroc files are in Tivoli Enterprise Monitoring Server in `CandleHome/CMS/TECLIB/itm5migr`. There are updated files for`sap_resource_model.baroc`, `tecad_wr3moni.baroc`, and `tecad_wr3slog.baroc`.

Table 7. Agent problems and solutions (continued)

Problem	Solution
You are receiving Tivoli Business Service Manager events that cannot be associated because application_oid and application_class are not set.	This problem is caused by IBM Tivoli Monitoring V6.2 sending Tivoli Enterprise Console events for IBM Tivoli Monitoring 5.x migrated situations. These events are not able to set the cited slot values. Replace the sap_forward_tbsm_event_cb.sh script on the Tivoli Enterprise Console server with the version of this file from the Tivoli Enterprise Monitoring Server in `CandleHome/CMS/TECLIB/itm5migr`.
The monitoring agent is installed and running normally. After you reboot the computer where the Tivoli Enterprise Monitoring Server was running, or restarting the system that hosts the Tivoli Enterprise Monitoring Server, the agent is not online. However, when you use `CandleAgent start`, the agent starts and continues running.	This problem can occur when the agent is installed locally by using a non-root user, or when the agent is installed remotely by using the **Run As** option on the GUI or by using the **_UNIX_STARTUP_.Username** option on the **tacmd addSystem** command line. Verify whether you used a non-root user to install the monitoring agent. Manually start the monitoring agent by using the correct user ID. For more information, see “Upgrading the agent and Restarting by using non-root” on page 4.
Return code 8 or return code 12 occurs on the main import step.	This return code is related to DYNPRO format incompatibility or export/import (specifically table EUDB) incompatibility. These errors occur if the R3trans program is old or the Basis support package maintenance is low. See the "Creating a firewall partition file" section in the “Installation and configuration troubleshooting” on page 21 section for information about the required version of R3trans. Upgrade R3trans program or Basis support level SAP Notes that describe the minimum R3trans and Basis support packages are documented in the following OSS Notes: 330267, 454321, 743155.
Many of the following messages are in the SAP syslog: `ITM raised alert 9911 - Excessive data collected for R/3 Database Detail.`	This alert message is generated by the monitoring agent and indicates that the number of database detail rows generated by the ABAP data provider exceeded the configured maximum number of rows to return. The R/3_Data_Base_Detail attribute group returns a row for every object with more than 20 extents or for every row that is in a space critical condition. Reduce the number of rows reported by removing all space critical conditions in the database and reorganizing to less than 20 extents. This reduction improves the database performance, and reduces the number of database detail rows returned.
The SAP agent V7.1.1 does not start in an AIX V6.1 environment that has a Technology Level (TL) less than TL8 and a time zone of Asia/Calcutta.	To resolve this problem, complete one of the following steps: • Change the time zone to TZ=CST6CDT, and then start the agent. • Upgrade the AIX 6.1 environment to include TL8 level, and then start the agent.
IdML book certification is failing because of duplicate entries coming from SAP servers that are connected to the Solution Manager as satellite systems. This failure occurs when you monitor the Solution Manager and the connected SAP satellites use different instances of the SAP agent, and the instances are connected to a single Tivoli Enterprise Monitoring Server.	To resolve this problem, complete the following steps: • Stop the SAP agent instances that are monitoring the connected SAP satellite systems that are connected to the Solution Manager. • Generate the IdML book. • Load the IdML book into the IBM Tivoli Application Dependency Discovery Manager or the Tivoli Business Service Manager. Then, start the SAP agent instances that are monitoring the underlying SAP satellite systems which are connected to the Solution Manger.
The `TSV_TNEW_PAGE_ALLOC_FAILED` ABAP runtime error occurred in SAP because of huge data volume.	To resolve this problem, you must increase the ABAP heap size. To increase the heap size in SAP, complete the following steps: 1. Run T-Code **SE38**. 2. In the **Program name** text box, enter RSMEMORY, and execute. 3. Under the **Other parameters** section, set the value for **abap/heap area dia** parameter, and then, click **Copy**. **Note:** The recommended size of ABAP heap size is 2 GB. However, you can increase the size. **Important:** Refer SAP Notes 789477, 425207, 153641, and 146289.

Table 7. Agent problems and solutions (continued)	
Problem	**Solution**
If you upgrade the SAP agent to V7.1.1 Fix Pack 1, the configuration of the SAP agent from Tivoli Enterprise Portal does not occur.	To resolve this problem, use any one of the following solutions: • Reconfigure the SAP agent by using the following command: **tacmd configuresystem**. This command works for both Windows operating systems and operating systems other than Windows. • To reconfigure the agent locally on the Windows systems, use the Manage Tivoli Enterprise Monitoring Services (MTEMS). To reconfigure the agent on operating systems other than Windows, run the following command: **itcmd config**.

Tivoli Enterprise Portal troubleshooting

When you encounter problems with Tivoli Enterprise Portal, such as data not showing, you can consult this appendix to help you to fix the problem.

The table contains problems that might occur with the Tivoli Enterprise Portal. This appendix provides agent-specific troubleshooting information. See the *IBM Tivoli Monitoring Troubleshooting Guide* for general troubleshooting information.

Table 8. Tivoli Enterprise Portal problems and solutions	
Problem	**Solution**
Historical data collection is unavailable because of incorrect queries in the Tivoli Enterprise PortalTivoli Enterprise Portal.	The column, Sort By, Group By, and First/Last functions are not compatible with the historical data collection feature. Use of these advanced functions make a query ineligible for historical data collection. Even if data collection is started, you cannot use the time span feature if the query for the chart or table includes any column functions or advanced query options (Sort By, Group By, First/Last). To ensure support of historical data collection, do not use the Sort By, Group By, or First/Last functions in your queries. See the *IBM Tivoli Monitoring Administrator's Guide* or the Tivoli Enterprise Portal online Help for information about the Historical Data Collection function.
No data is shown in the Tivoli Enterprise Portal.	There are several solutions: • See the "Agent Log workspace" section in the *ITCAM Agent for SAP Applications Reference Guide*. • Check for alerts generated by IBM Tivoli Monitoring. The SAP agent creates these alerts to indicate problems with the agent. • Check the SAP Syslog. The SAP agent writes diagnostic messages to this log file when a problem occurs. If the agent transport is not installed on the target mySAP system, install the agent to the mySAP system. See the "Importing the Advanced Business Application Programming (ABAP) transport on the SAP system" section in the *ITCAM Agent for SAP Applications Installation and Configuration Guide*. If the agent can not connect to the mySAP system, you might need to change the RFC connection parameters. See the "SAP RFC connections" section in the *ITCAM Agent for SAP Applications Installation and Configuration Guide*.

Table 8. Tivoli Enterprise Portal problems and solutions (continued)	
Problem	**Solution**
When you right-click on a workspace table view and click **Launch**, the screen that is shown is missing the (E) mnemonic on the **Evaluate** option for double-byte languages.	There is no solution for this problem.
When viewing the Information Center, the **Welcome to the IBM Tivoli Monitoring Information Center** panel is not translated into non-English languages.	There is no solution for this problem. The remaining text is shown in the translated language.
If you have the SAP agent V7.1.1 Fix Pack 1 installed with IBM Tivoli Monitoring V6.3 or later on an AIX operating system, the SAP agent does not start.	To resolve this problem, update the GSKit component by using the following command from the IBM Tivoli Monitoring V6.3 Fix Pack 1 or later operating system agent installer image: **./install.sh -q -p** *itm630fp1***/unix/tfaix536.txt -h** *Candle Home*. You must replace the `itm630fp1 build` path and the `Candle Home` path with the actual paths.

Workspace troubleshooting

There are many solutions for problems that occur in relation to workspaces.

Table 9 on page 40 contains problems that might occur with workspaces. This appendix provides agent-specific troubleshooting information. See the *IBM Tivoli Monitoring Troubleshooting Guide* for general troubleshooting information.

Table 9. Workspace problems and solutions

Problem	Solution
The process application components are available, but the Availability status shows **PROCESS_DATA_NOT_AVAILABLE**.	This problem occurs because the PerfProc performance object is disabled. When this condition exists, IBM Tivoli Monitoring cannot collect performance data for this process. Use the following steps to confirm that this problem exists and to resolve it: 1. In the Windows Start menu, click Run. 2. Type perfmon.exe in the Open field of the Run window. The Performance window is displayed. 3. Click the plus sign (+) in the toolbar. The Add Counters window is displayed. 4. Look for Process in the Performance object menu. 5. Complete one of the following actions: • If you see Process in the menu, the PerfProc performance object is enabled and the problem is coming from a different source. You might need to contact IBM Software Support. • If you do not see Process in the menu, use the Microsoft utility from the Microsoft.com Operations website to enable the PerfProc performance object. The Process performance object becomes visible in the Performance object menu of the Add Counters windows, and IBM Tivoli Monitoring is able to detect Availability data. 6. Restart the monitoring agent.
The name of the attribute does not show in a bar chart or graph view.	When a chart or graph view that includes the attribute is scaled to a small size, a blank space is shown instead of a truncated name. To see the name of the attribute, expand the view of the chart until there is enough space to show all characters of the attribute name.
You start collection of historical data but the data cannot be seen.	Use the following managing options for historical data collection: • Basic historical data collection populates the Warehouse with raw data. This type of data collection is turned off by default. For information about managing this feature including how to set the interval at which data is collected, see **Managing historical data** in the *IBM Tivoli Monitoring Administrator's Guide*. By setting a more frequent interval for data collection, you reduce the load on the system incurred every time data is uploaded. • Use the Summarization and Pruning agent to collect specific amounts and types of historical data. Historical data is not displayed until the Summarization and Pruning monitoring agent begins collecting the data. By default, this agent begins collection at 2 a.m. daily. At that point, data is visible in the workspace view. For information about how to modify the default collection settings, see **Managing historical data** in the *IBM Tivoli Monitoring Administrator's Guide*.

Table 9. Workspace problems and solutions (continued)

Problem	Solution
Historical data collection is unavailable because of incorrect queries in the Tivoli Enterprise Portal.	The Sort By, Group By, and First/Last functions column are not compatible with the historical data collection feature. Use of these advanced functions makes a query ineligible for historical data collection. Even if data collection has started, you cannot use the time span feature if the query for the chart or table includes column functions or advanced query options (Sort By, Group By, First / Last). To ensure support of historical data collection, do not use the Sort By, Group By, or First/Last functions in your queries. For information about the historical data collection function, See **Managing historical data** in the *IBM Tivoli Monitoring Administrator's Guide* or the Tivoli Enterprise Portal online help .
When you use a long process name in the situation, the process name is truncated.	Truncation of process or service names for situations in the Availability table in the portal display is the expected behavior. The maximum name length is 100 bytes.
Regular (non-historical) monitoring data fails to be displayed.	Check the formation of the queries you use to gather data. For example, look for invalid SQL statements.
Navigator items and workspace titles are labeled with internal names such as Kxx:KXX0000 instead of the correct names (such as Disk), where XX and xx represent the two-character agent code.	Ensure that application support has been added on the monitoring server, portal server, and portal client. For more information about installing application support, see **Installing and enabling application support** in the *IBM Tivoli Monitoring Installation and Setup Guide*.
Historical data is not shown though you started collection of historical data.	Managing options for historical data collection: • Basic historical data collection populates the Warehouse with raw data. This type of data collection is turned off by default. See the *IBM Tivoli Monitoring Administrator's Guide* for information about managing this feature including how to set the interval at which data is collected. By setting a more frequent interval for data collection you reduce the load on the system incurred every time data is uploaded. • You use the Summarization and Pruning monitoring agent to collect specific amounts and types of historical data.Historical data is not shown until the Summarization and Pruning monitoring agent begins collecting the data. By default, this agent begins collection at 2 a.m. daily. At that point, data is visible in the workspace view. See the *IBM Tivoli Monitoring Administrator's Guide* to learn how to modify the default collection settings.
In the historical database, values for some attributes in the R/3_Instance_Configuration attribute group do not exist.	A size restriction limits the attributes that are collected and stored for historical data collection on the Tivoli Enterprise Monitoring Server. Therefore, few attributes from the R/3_Instance_Configuration attribute group are not collected when you configure historical data collection to collect data on the Tivoli Enterprise Monitoring Server. Configure historical data collection to collect data on the monitoring agent.

Table 9. Workspace problems and solutions (continued)	
Problem	**Solution**
No CCMS alerts show in the Alerts workspace (If CCMS alert collection takes too long you might not get any alerts.)	If errors occur in the mySAP system, the SAP agent experiences the same errors. Do the following procedures: • Correct the errors in the mySAP system. Look at the mySAP system to determine whether CCMS is responding. Log on to the mySAP system and run RZ20 to see whether CCMS is responding. If CCMS is not responding contact SAP support or access SAP online support tools at service.sap.com. • Agent CCMS collection timeout values might need to be increased. The agent times out if it cannot collect the data in 2 minutes. Contact IBM Software Support for instructions on how to temporarily increase the CCMS data collection timeout setting for diagnostic purposes. Setting this value higher affects the responsiveness of the SAP agent. • Ensure that SAPCCMSR agents are working correctly. • Ensure that the CCMS Monitors and Monitor tree elements are selected with agent config /IBMMON/ITM_ALERTS.
All of the rows of data you expected to see in a workspace are not shown.	• If it is a time span workspace, check that the time span is set to the correct value. • Check for alert 9911, "Excessive data collected for workspace", generated by IBM Tivoli Monitoring. This alert means that the number of data rows collected exceeds the maximum number of rows that the agent is configured to send to the Tivoli Enterprise Portal Server. It informs you how many rows of data were not returned. To modify the maximum row setting, see the "IBM Tivoli Monitoring generated alerts maintenance" section in the *IBM Tivoli Composite Application Manager Agent for SAP Applications Installation and Configuration Guide*. Increasing the maximum number of data rows can have a negative impact on agent and Tivoli Enterprise Portal Server performance. • For more information, see the " Verifying the prerequisites for data collection" section in the *IBM Tivoli Composite Application Manager Agent for SAP Applications Installation and Configuration Guide*.
Timestamps that are shown in the workspaces do not match the timestamps you are expecting.	For more information, see the "Alert timestamps" section in the *ITCAM Agent for SAP Applications Reference Guide*.
No log data is shown in the workspaces that contains log data, for example, the Database Logs workspace.	Ensure that the log files and their locations are properly configured for the agent to monitor. See the "Log file name maintenance" section in the *IBM Tivoli Composite Application Manager Agent for SAP Applications Installation and Configuration Guide*.

Table 9. Workspace problems and solutions (continued)

Problem	Solution
No data shows in the Gateway Statistics workspace.	Enable Gateway Statistics by selecting the **Enable Gateway Statistics** link or **Reset Gateway Statistics** link from within the Gateway Statistics workspace. **Note:** Gateway statistics are intended to be enabled for a short time period during specific analysis. Enabling gateway statistics for a long time period results in the gateway statistics values becoming too large to report.
"No applicable data" is shown in a workspace table.	The SAP agent was unable to find any data that met the query parameters. This problem occurs in the following cases: • There was no activity for a function within the real-time interval in which the agent is looking. If the view supports time spans, try a longer time span interval. • The :Grp managed system is not configured to report the type of data requested. This limitation is a configuration limitation based on how you defined the group in the mySAP system.
No data is shown in a top-level workspace for managed system names that end in:Sys.	This limitation is a current limitation of the Tivoli Enterprise Portal Server. Only one workspace can be assigned to a top level managed system, so all managed system names (:Ins, :Sys or :Grp) share the same workspace. This workspace contains instance-specific views that are not populated when shown for :Sys managed system names.
No data is displayed in the Service Response or Transaction Performance workspaces.	The SAP agent depends on SAP statistics collection that works correctly on the mySAP systems that it monitors. On SAP 7.0 systems, you must set the mySAP system time zone to match the time zone for the operating system so that SAP statistics are collected with the correct time stamps. You must make this change for the SAP agent to successfully collect data. For more information about this issue, see SAP Note 926290
The position of the Alerts workspace in the CCMS Monitoring navigator item changes when the V6.2 GA or V6.2 Interim Fix 16 agent co-exists with V7.1.1 Fix Pack 1 support.	No solution is available for this problem. However, this problem does not affect the CCMS Alerts feature.
The Period Start and the Period End attributes are not available in the XML Message Log workspace.	The attributes are removed because the agent does not use these two attributes for monitoring.
Historical data from the Warehouse database is not displayed for the Transaction Performance attribute group and R/3 Transaction Performance Task Type attribute group.	To receive historical data from the Warehouse database tables, you must create the following customized query for the workspaces under the Workload Performance navigator item: `Managed System == $NODE$ AND Aggregation == HIST`

SAP function module

When the data volume is high on the SAP server, you might experience problems with certain workspaces causing a slow response time from the server. If the workspaces are not critical, you can disable the associated SAP function module.

By default, the SAP agent function modules are enabled. However, the following function modules are disabled by default:

- HTTP services under the SYS subnode (`/IBMMON/ITM_HTTP_SRVS`)
- XML messages under the PI/XI subnode (`/IBMMON/ITM_SXMB_MONI_NEW`)
- Sync/Async communication under the PI/XI subnode (`/IBMMON/ITM_SYN_ASYN_COMM`)
- qRFC inbound queue details under the Sys subnode (`/IBMMON/ITM_QIN_QDETAILS`)

When you disable the SAP function module, if you select a workspace, data is not displayed on the Tivoli Enterprise Portal. Therefore, you avoid any performance-related problems.

Related tasks

"Enabling the SAP agent function module" on page 44
You can enable the SAP agent function module if you have disabled it previously to resolve performance problems.

"Disabling the SAP function module" on page 44
Some workspaces may cause a slow response from the SAP server and you can disable the SAP function module to improve the server performance.

Enabling the SAP agent function module

You can enable the SAP agent function module if you have disabled it previously to resolve performance problems.

Procedure

1. By using the SAP GUI, logon to the SAP system.
2. Run the SE16 transaction code.
3. Enter `/IBMMON/ITM_CNFG` as the table name.
4. Select the row to delete and press **shift + F2** to delete the entry.
5. Click **Save**.

Disabling the SAP function module

Some workspaces may cause a slow response from the SAP server and you can disable the SAP function module to improve the server performance.

Procedure

1. By using the SAP GUI, logon to the SAP system.
2. Run the SE16 transaction code.
3. Enter `/IBMMON/ITM_CNFG` as the table name.
4. To create a new entry, press **F5**.
5. In the **PARM NAME** field, enter the name of the SAP function module.
6. In the **VALUE CHAR** field, enter `No`.
7. Click **Save**.

Situation troubleshooting Overview

There are many solutions for problems that occur in relation to situations.

This section provides information about both general situation problems and problems with the configuration of situations. See the *IBM Tivoli Monitoring Troubleshooting Guide* for more information about troubleshooting for situations.

General situation problems

There are many solutions to situation problems that you encounter.

Table 10 on page 45 contains problems that might occur with specific situations.

Table 10. Specific situation problems and solutions

Problem	Solution
You want to change the appearance of situations when they are shown in a workspace view.	1. Right-click an item in the Navigation tree. 2. Select **Situations** in the menu. The Situation Editor window is shown. 3. Select the situation that you want to modify. 4. Use the **Status** menu in the lower right of the window to set the status and appearance of the Situation when it triggers. **Note:** This status setting is not related to severity settings in IBM Tivoli Enterprise Console.
Monitoring activity requires too much disk space.	Check the RAS trace logging settings that are described in "RAS trace parameters" on page 12. For example, trace logs grow rapidly when you apply the **ALL** logging option.
Monitoring activity requires too many system resources.	See the information about disk capacity planning for historical data in the Reference guide for the agent for a description of the performance impact of specific attribute groups. If possible, decrease your use of the attribute groups that require greater system resources.
A formula that uses mathematical operators seems to be incorrect. For example, if you are monitoring Linux, a formula that calculates when **Free Memory** falls under 10 percent of **Total Memory** does not work: `LT #'Linux_VM_Stats.Total_Memory' / 10`	This formula is incorrect because situation predicates support only logical operators. Your formulas cannot have mathematical operators. **Note:** The Situation Editor provides alternatives to math operators. Regarding the example, you can select **% Memory Free** attribute and avoid the need for math operators.
When a situation is triggered in the Event Log attribute group, it remains in the Situation Event Console as long as the event ID entry is present in the Event Log workspace. When this event ID entry is removed from the Event Log workspace on the Tivoli Enterprise Portal, the situation is also cleared even if the actual problem that caused the event is not resolved, and the event ID entry is also present in the Windows Event Viewer.	A timeout occurs on the cache of events for the NT Event Log group. Increase the cache time of Event Log collection to meet your requirements by adding the following variable and timeout value to the KpcENV file for the agent (where pc is the two-letter product code): CDP_NT_EVENT_LOG_CACHE_TIMEOUT=3600 This variable determines how long events from the NT Event Log are kept.

Table 10. Specific situation problems and solutions (continued)

Problem	Solution
For a situation that uses the 'MISSING' operator and is distributed to a remote agentless monitoring subnode, no indication is displayed in the Tivoli Enterprise Portal or in the Situation Event Console when the situation becomes true.	The MISSING predicate is currently not supported on subnodes. If a situation with a MISSING predicate is distributed to a subnode, the agent cannot tell which subnode or node the event is occurring on. It inserts the system name as the origin node for the event and returns. When the event reaches the Tivoli Enterprise Portal Server, the origin node does not match the system name of the subnode where the situation is associated, so the event is dropped.
If you are running a version of the SAP agent that is earlier than V6.2 and you choose to alter the views to include a new attribute, be aware that data for this attribute is not shown and you see a blank column in this view.	To enable Unicode and other features, upgrade the monitoring agent to IBM Tivoli Monitoring, Version 6.2.0.
Situations that you create show the severity UNKNOWN in the IBM Tivoli Enterprise Console.	For a situation that is not mapped to have the correct severity in the Tivoli Enterprise Console, ensure that one of the following is true: 1. If an entry is found in the `tecserver.txt` file for the situation and **SEVERITY** is specified, the value specified is used. OR 2. Add a severity suffix to the name of the situation. If the situation name ends with a standard severity code, IBM Tivoli Enterprise Console derives the severity from the name. For example, a situation name with the suffix `_Warn` or `_Warning` has the **WARNING** severity in IBM Tivoli Enterprise Console. The suffix `_Cri` or `_Critical` is shown as **CRITICAL** severity.

You see the 'Unable to get attribute name' error in the Tivoli Enterprise Monitoring Server log after creating a situation.	Ensure that the agent attribute files are installed on the Tivoli Enterprise Monitoring Server.
	The following example shows a typical log entry when you have this problem:
	`(4320916A.0049-F60:kfaottev.c,1572,"Translate_ResultBuffer") \`
	`Unable to get attribute name for tablename/column \`
	`<UAG524400.UA4>. Ignored.`

When you use a long process name in the situation, the process name is truncated.	Truncation of process names in the portal display is the expected behavior. 64 bytes is the maximum name length.
Situations are triggered in the Tivoli Enterprise Monitoring Server, but events for the situation are not sent to the Tivoli Enterprise Console server. The Tivoli Enterprise Monitoring Server is properly configured for event forwarding, and events for many other situations are sent to the event server.	None. This limitation is a limitation of the Tivoli Enterprise Monitoring Server event forwarding function. Situations that monitor only other situations do not send events to the event server. This condition can occur when a situation is monitoring only the status of other situations. The event forwarding function requires an attribute group reference in the situation in order to determine the correct event class to use in the event. When the situation monitors only other situations, no attribute groups are defined and the event class cannot be determined. Because the event class cannot be determined, no event is sent.

Problems with situation configuration

You can use the Situation editor to help you fix any problems that you encounter when you try to configure situations.

Table 11 on page 47 through Table 13 on page 49 contain problems that might occur with situations.

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

Table 11. Problems with configuring situations that you solve in the Situation Editor

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

Table 11. Problems with configuring situations that you solve in the Situation Editor (continued)	
Problem	**Solution**

The situation does not fire.
 	
Incorrect predicates are present in the formula that defines the situation. For example, the managed object shows a state that normally triggers a monitoring event. However, the situation is not true because the wrong attribute is specified in the formula.
	In the **Formula** tab, analyze predicates as follows:
	
	1. Click the **fx** icon in the upper-right corner of the Formula area. The Show formula window is shown.
	   a. Confirm the following details in the **Formula** area at the top of the window:
	   • The attributes that you intend to monitor are specified in the formula.
	   • The situations that you intend to monitor are specified in the formula.
	   • The logical operators in the formula match your monitoring goal.
	   • The numerical values in the formula match your monitoring goal.
	   b. (*Optional*) Click the **Show detailed formula** check box in the lower left of the window to see the original names of attributes in the application or operating system that you are monitoring.
	   c. Click **OK** to dismiss the Show formula window.
	2. (*Optional*) In the Formula area of the **Formula** tab, temporarily assign numerical values that immediately trigger a monitoring event. The triggering of the event confirms that other predicates in the formula are valid.
	
	Note: After you complete this test, you must restore the numerical values to valid levels. Then you do not generate excessive monitoring data based on your temporary settings.

Table 12. Problems with configuration of situations that you solve in the workspace area	
Problem	**Solution**
Situation events are not shown in the Events Console view of the workspace.	Associate the situation with a workspace. **Note:** The situation does not need to be shown in the workspace. It is sufficient that the situation is associated with any workspace.
You do not have access to a situation.	**Note:** You must have administrator privileges to complete these steps. 1. Select **Edit** > **Administer Users** to access the **Administer Users** window. 2. In the Users area, select the user that has the privileges you want to modify. 3. In the **Permissions** tab, **Applications** tab, and **Navigator Views** tab, select the permissions or privileges that correspond to the user's role. 4. Click **OK**.
A managed system seems to be offline.	1. Select **Physical View** and highlight the Enterprise Level of the Navigator tree. 2. Select **View** > **Workspace** > **Managed System Status** to see a list of managed systems and their status. 3. If a system is offline, check network connectivity and status of the specific system or application.

Table 13. Problems with configuration of situations that you solve in the Manage Tivoli Enterprise Monitoring Services window	
Problem	**Solution**
After an attempt to restart the agents in the Tivoli Enterprise Portal, the agents are still not running.	Check the system status and check the appropriate IBM Tivoli Monitoring logs.
The Tivoli Enterprise Monitoring Server is not running.	Check the system status and check the appropriate IBM Tivoli Monitoring logs.
The managed objects you created are firing on incorrect managed systems.	Check the managed system distribution on both the situation and the managed object settings sheets.

Take Action command troubleshooting

You can use the log files that are generated from the Take Action commands to solve any problems that you might encounter with these commands.

Table 14 on page 49 contains general problems that might occur with Take Action commands. When each Take Action command runs it generates the log files listed in Table 2 on page 9. This appendix provides agent-specific troubleshooting information. See the *IBM Tivoli Monitoring Troubleshooting Guide* for general troubleshooting information.

Table 14. Take Action commands problems and solutions	
Problem	**Solution**
Take Action commands might require several minutes to complete.	Allow several minutes. If you do not see a message that advises you of completion, try to run the command manually. If you are unable to complete the Take Action command manually, see the *IBM Tivoli Monitoring Troubleshooting Guide* for general information about troubleshooting the Take Action command.
The Take Action command completes with return Code 0 but the action was not completed.	Check the Take Action log files for errors. The log files for Take Action commands on Windows systems are usually in the `Windows\system32` directory; and on UNIX, the commands are in the directory where the ksar* utilities are: *install_dir*/*arch*/bin. Ensure that the user who is running the Take Action command has the correct authorizations to run the command in the SAP systems. For more information, see the "SAP user IDs" section in the *ITCAM Agent for SAP Applications Installation and Configuration Guide*.
When running the **`Execute brarchive`** Take Action command, the command completes with a return code of 4 or 127. A return code of 4 is shown when the IBM Tivoli Monitoring servers are running on Windows. A return code of 127 is shown when the IBM Tivoli Monitoring servers are running on UNIX. The SAP agent might be running on either Windows or UNIX.	These return codes mean that the **`brarchive`** command cannot be found. This problem can occur when using the remote management capability of the SAP agent when that agent is not on an SAP server. When you run Take Action commands, the command to be run must be on the computer where the agent is installed and must be in the PATH of the agent. Run the SAP agent in local management mode. There is no workaround when running the agent in remote management mode.

Table 14. Take Action commands problems and solutions (continued)

Problem	Solution

There are upgrade problems after you run the Take Action and SAPOffice Mail utilities from custom shell scripts. If the password that you enter is plain text, then this password is not recognized.
 	
Note: Custom shell scripts are those shell scripts that are created by copying system shell scripts, for example, `ksar3` and `ksar3nfy` scripts.
 	
The following problems occur:
 	
Take Action
 	
• From the Tivoli Enterprise Portal: The returned code is 4.
• From the command line interface: A core dump occurs.
 	
SAPOffice Mail
 	
• From the command line interface: A segmentation fault and core dump occur.
	To upgrade the Take Action shells script, complete the following steps:
	
	1. Depending on your platform, complete one of the following steps:
	   • On the RHEL-64 platform only, copy the custom shell scripts from `/lx8263/bin` to `/lx8266/bin`.
	   • Alternatively, rename or backup all existing custom Take Action shell scripts to another directory in the following path: `/binarch/bin`.
	2. For each custom shell script, create a shell script by copying the ksar3 script and renaming it to match the shell script.
	3. Open the newly created custom shell script, that contains the following information:
	
	`#### CUSTOM SETTINGS ################`
	`#### THE FOLLOWING SETTINGS ARE COMMON`
	`FOR LOGONGROUP CONNECTION MODE`
	`OR APPLICATION SERVER`
	`CONNECTION MODE`
	`#### If CFG_FILES=YES then SAPSYSTEMNAME`
	`should be set ##############`
	`export CFG_FILE=NO`
	`# export SAPSYSTEMNAME=nnn`
	`# export SAPCLIENT=ccc`
	`# export SAPUSER=uuuuuuuu`
	`# export SAPPASSWORD=pppppppp`
	
	`#### THE FOLLOWING SETTINGS ARE FOR`
	`APPLICATION SERVER CONNECTION MODE`
	`# export SAPHOST=hhhhhh`
	`# export SAPSYSTEMNUMBER=nn`
	
	4. Complete the following updates:
	   • Remove the # symbol that precedes the SAP* parameter.
	   • Set the value for each SAP* parameter from the existing backup or renamed ksar3 shell script.
	5. Save and close the file.
	6. Repeat step 2 to rename additional files.
	
	Now, you can run the Take Action from the Tivoli Enterprise Portal and the command line interface using your custom shell scripts.
	
	To upgrade the SAPOffice Mail shell script, complete the following steps:
	
	• Backup all existing custom SAPOffice Mail shell scripts to another directory or rename these scripts.
	• Complete steps 2 to 4 for the Take Action shells script.
	
	Note: Now, you can send SAPOffice Mail from the command line interface by using your custom shell scripts.

Table 14. Take Action commands problems and solutions (continued)

Problem	**Solution**
Situations fail to trigger Take Action commands.	Attempt to manually run the Take Action command in the Tivoli Enterprise Portal. If the Take Action command works, look for configuration problems in the situation , refer to “Situation troubleshooting Overview” on page 45. If the Take Action command fails, for general information about troubleshooting Take Action commands, see the *IBM Tivoli Monitoring Troubleshooting Guide*.

Chapter 4. Support information

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

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

Online

The following websites contain troubleshooting information:

- Go to the IBM Software Support website (http://www.ibm.com/support/entry/portal/software) and follow the instructions.
- Go to the IBM Tivoli Distributed Monitoring and Application Management Wiki (http://www.lotus.com/ldd/tivmonitorwiki.nsf). Feel free to contribute to this wiki.

IBM Support Assistant

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

Appendix A. ITCAM for Applications documentation library

Various publications are relevant to the use of ITCAM for Applications .

For information about how to access and use the publications, see *Using the publications* (http://pic.dhe.ibm.com/infocenter/tivihelp/v61r1/topic/com.ibm.itm.doc_6.3/common/using_publications.htm).

To find publications from the previous version of a product, click **Previous versions** under the name of the product in the **Contents** pane.

Documentation for this product is in the ITCAM for Applications Information Center (http://publib.boulder.ibm.com/infocenter/tivihelp/v24r1/topic/com.ibm.itcama.doc_7.2.1/welcome_apps721.html):

- Quick Start Guide
- Offering Guide
- Download instructions
- Links to Prerequisites
- Installation and Configuration Guide for each agent
- Link to Reference information for each agent
- Link to Troubleshooting Guide for each agent

Prerequisite publications

To use the information about the agents effectively, you must have some prerequisite knowledge.

See the following information at the IBM Tivoli Monitoring Information Center (http://pic.dhe.ibm.com/infocenter/tivihelp/v61r1/index.jsp) to gain prerequisite knowledge:

- *IBM Tivoli Monitoring Administrator's Guide*
- *IBM Tivoli Monitoring Installation and Setup Guide*
- *IBM Tivoli Monitoring High Availability Guide for Distributed Systems*
- IBM Tivoli Monitoring: Installation and Configuration Guides for the following agents: Operating System agents and Warehouse agents
- IBM Tivoli Monitoring: User's Guides for the following agents: Agentless OS monitors, Log file agent, System p agents, Systems Director base agent
- *IBM Tivoli Monitoring Agent Builder User's Guide*
- *IBM Tivoli Monitoring Command Reference*
- *IBM Tivoli Monitoring: Messages*
- *IBM Tivoli Monitoring Troubleshooting Guide*
- IBM Tivoli Monitoring: References for the following agents: Operating System agents and Warehouse agents
- IBM Tivoli Monitoring: Troubleshooting Guides for the following agents: Operating System agents and Warehouse agents
- *Tivoli Enterprise Portal User's Guide*

Related publications

The publications in related information centers provide useful information.

See the following information centers, which you can find by accessing Tivoli Documentation Central (http://www.ibm.com/tivoli/documentation):

- Tivoli Monitoring
- Tivoli Application Dependency Discovery Manager
- Tivoli Business Service Manager
- Tivoli Common Reporting
- Tivoli Enterprise Console
- Tivoli Netcool/OMNIbus

Tivoli Monitoring Community on Service Management Connect

Service Management Connect (SMC) is a repository of technical information that is organized by communities.

Access Service Management Connect at https://www.ibm.com/developerworks/servicemanagement.

For information about Tivoli products, see the Application Performance Management community (http://www.ibm.com/developerworks/servicemanagement/apm/index.html).

Connect, learn, and share with Service Management professionals. Get access to developers and product support technical experts who provide their perspectives and expertise. You can use SMC for these purposes:

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

Other sources of documentation

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

See the following sources of technical documentation about monitoring products:

- IBM Integrated Service Management Library (http://www.ibm.com/software/brandcatalog/ismlibrary/) is an online catalog that contains integration documentation as well as other downloadable product extensions.
- IBM Redbook publications (http://www.redbooks.ibm.com/) include Redbooks® publications, Redpapers, and Redbooks technotes that provide information about products from platform and solution perspectives.
- Technotes (http://www.ibm.com/support/entry/portal/software), which are found through the IBM Software Support website, provide the latest information about known product limitations and workarounds.

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