Warehouse Summarization and Pruning Agent
Version 6.3

User's Guide

SC22-5457-00

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Note
Before using this information and the product it supports, read the information in "Notices" on page 87.

This edition applies to version 6, release 3 of IBM Tivoli Monitoring (product number 5724-C04) and to all subsequent releases and modifications until otherwise indicated in new editions.

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Chapter 1. Overview of the agent

The Warehouse Summarization and Pruning Agent is a unique agent that performs the aggregation and pruning functions for the historical detailed data on the Tivoli® Data Warehouse. The Summarization and Pruning Agent has advanced configuration options that enable customization of the historical data storage. One Summarization and Pruning Agent manages the historical data in the Tivoli Data Warehouse.

IBM Tivoli Monitoring overview

IBM Tivoli Monitoring provides a way to monitor the availability and performance of all the systems in your enterprise from one or several designated workstations. It also provides useful historical data that you can use to track trends and to troubleshoot system problems.

You can use IBM Tivoli Monitoring to achieve the following tasks:

- Monitor for alerts on the systems that you are managing by using predefined situations or custom situations.
- Establish your own performance thresholds.
- Trace the causes leading to an alert.
- Gather comprehensive data about system conditions.
- Use policies to take actions, schedule work, and automate manual tasks.

The Tivoli Enterprise Portal is the interface for IBM Tivoli Monitoring products. You can use the consolidated view of your environment as seen in the Tivoli Enterprise Portal to monitor and resolve performance issues throughout the enterprise.

See the IBM Tivoli Monitoring publications listed in "Documentation for the base agents" on page 80 for complete information about IBM Tivoli Monitoring and the Tivoli Enterprise Portal.

New in this release

For version 6.3 of this monitoring agent, the following enhancements have been made since version 6.2.3, including the fix packs:

- New attributes, Run Window (hour) and Window Used (percent), have been added to the Summarization Statistics attribute group.
- New product-provided situations, KSY_Overload_Warning and KSY_Overload_Critical, have been added.
- New attributes, Table Partitions Total, Table Partitions Added or Created, and Table Partitions Removed or Rotated, have been added to the Table Statistics attribute group.
- New workspace, Table Partition Statistics, available from the Statistics Navigator item.
- New attributes, Table Partitioning, Forward Partitions, Group by Threshold, Default Table Container, and Default Index Container, have been added to the Summarization Config attribute group.

- New view, Database Tables Configuration, has been added to the Configuration workspace.

Components of Warehouse Summarization and Pruning Agent

After you install and set up the Warehouse Summarization and Pruning Agent, you have an environment that contains the client, server, and monitoring agent implementation for IBM Tivoli Monitoring

This IBM Tivoli Monitoring environment contains the following components:

Tivoli Enterprise Portal client
The portal has a user interface based on Java™ for viewing and monitoring your enterprise.

Tivoli Enterprise Portal Server
The portal server is placed between the client and the Tivoli Enterprise Monitoring Server and enables retrieval, manipulation, and analysis of data from the monitoring agents. The Tivoli Enterprise Portal Server is the central repository for all user data.

Tivoli Enterprise Monitoring Server
The monitoring server acts as a collection and control point for alerts received from the monitoring agents, and collects their performance and availability data. The Tivoli Enterprise Monitoring Server is also a repository for historical data.

IBM Tivoli Enterprise Console
The Tivoli Enterprise Console® is an optional component that acts as a central collection point for events from a variety of sources, including events from other Tivoli software applications, Tivoli partner applications, custom applications, network management platforms, and relational database systems. You can view these events through the Tivoli Enterprise Portal (by using the event viewer), and you can forward events from IBM Tivoli Monitoring situations to the Tivoli Enterprise Console component.

Schema Publication tool
This tool generates DDL scripts that can be used against a database capable of compression.

Agent Management Services

You can use IBM® Tivoli Monitoring Agent Management Services to manage the Warehouse Summarization and Pruning Agent.

Agent Management Services is available for the following IBM Tivoli Monitoring OS agents: Windows, Linux, and UNIX. The services are designed to keep the Warehouse Summarization and Pruning Agent available, and to provide information about the status of the product to the Tivoli Enterprise Portal. For more information about Agent Management Services, see the *IBM Tivoli Monitoring Administrator's Guide*, "Agent Management Services" chapter.

User interface options

Installation of the base software and other integrated applications provides the following interfaces that you can use to work with your resources and data.

The following interfaces are available:

Tivoli Enterprise Portal user interface

You can run the Tivoli Enterprise Portal as a desktop application or a browser application. The client interface is a graphical user interface (GUI) based on Java on a Windows or Linux workstation. The browser application is automatically installed with the Tivoli Enterprise Portal Server. The desktop application is installed by using the Tivoli Monitoring installation media or with a Java Web Start application. To start the Tivoli Enterprise Portal browser client in your Internet browser, enter the URL for a specific Tivoli Enterprise Portal browser client installed on your Web server.

Manage Tivoli Enterprise Monitoring Services window

You can use the window for the Manage Tivoli Enterprise Monitoring Services utility to configure the agent and start Tivoli services not designated to start automatically.

IBM Tivoli Enterprise Console

You can use the Tivoli Enterprise Console to help ensure the optimal availability of an IT service for an organization. The Tivoli Enterprise Console is an event management application that integrates system, network, database, and application management.

Chapter 2. Agent installation and configuration

Agent installation and configuration requires the use of the *IBM Tivoli Monitoring Installation and Setup Guide* and agent-specific installation and configuration information.

To install and configure the Warehouse Summarization and Pruning Agent, use the "Installing monitoring agents" procedures in the *IBM Tivoli Monitoring Installation and Setup Guide*.

If you are installing silently by using a response file, see "Performing a silent installation of IBM Tivoli Monitoring" in the *IBM Tivoli Monitoring Installation and Setup Guide*.

In addition to the installation and configuration information in the *IBM Tivoli Monitoring Installation and Setup Guide*, use this agent-specific installation and configuration information to install the Warehouse Summarization and Pruning Agent.

Configuration values

For both local and remote configuration, you provide the configuration values for the agent to operate.

When you are configuring an agent, a panel is displayed so you can enter each value. When a default value exists, this value is pre-entered into the field. If a field represents a password, two entry fields are displayed. You must enter the same value in each field. The values you type are not displayed to help maintain the security of these values.

The configuration for this agent is organized into the following groups:

Database Type (DBTYPE)
Choose the database type

The configuration elements defined in this group are always present in the agent's configuration.

This group defines information that applies to the entire agent.

Database (KSY_WAREHOUSE_TYPE)
Database Type

The valid values include "DB2", "ORACLE", "MSSQL" when using addSystem and configureSystem CLIs.

This value is required.

Default value: DB2

Sources (SOURCES)
Sources Details

The configuration elements defined in this group are always present in the agent's configuration.

This group defines information that applies to the entire agent.

JDBC JARs List (KSY_WAREHOUSE_JARS)
Fully qualified paths to JDBC JAR files (comma separated)

The type is string.

This value is required.

Default value: None

JDBC URL (KSY_DB2_JDBCURL)
The Warehouse JDBC URL when connecting to a DB2 Linux/UNIX/Windows or DB2 z/OS database

The type is string.

This value is required. This setting is only valid for Warehouse Summarization and Pruning agents that are installed on operating systems other than Windows.

Default value: jdbc:db2://localhost:50000/WAREHOUS.

JDBC Driver (KSY_DB2_JDBCDRIVER)
The Warehouse JDBC Driver when connecting to a DB2 Linux/UNIX/Windows or DB2 z/OS database

The type is string.

This value is required. This setting is only valid for Warehouse Summarization and Pruning agents that are installed on operating systems other than Windows.

Default value: com.ibm.db2.jcc.DB2Driver.

JDBC URL (KSY_ORACLE_JDBCURL)
The Warehouse JDBC URL when connecting to an Oracle database

The type is string.

This value is required. This setting is only valid for Warehouse Summarization and Pruning agents that are installed on operating systems other than Windows.

Default value: jdbc:oracle:thin:@*server*:*port*:*database*.

JDBC Driver (KSY_ORACLE_JDBCDRIVER)
The Warehouse JDBC Driver when connecting to an Oracle database

The type is string.

This value is required. This setting is only valid for Warehouse Summarization and Pruning agents that are installed on operating systems other than Windows.

Default value: oracle.jdbc.driver.OracleDriver.

JDBC Driver (KSY_MSSQL_JDBCDRIVER)
The Warehouse JDBC Driver when connecting to a Microsoft SQL Server database

The type is string.

This value is required. This setting is only valid for Warehouse Summarization and Pruning agents that are installed on operating systems other than Windows.

Default value: com.microsoft.sqlserver.jdbc.SQLServerDriver.

JDBC URL (KSY_MSSQL_JDBCURL)
The Warehouse JDBC URL when connecting to a Microsoft SQL Server database

The type is string.

This value is required. This setting is only valid for Warehouse Summarization and Pruning agents that are installed on operating systems other than Windows.

Default value: jdbc:sqlserver://*server*:*port*;databasename=*database*;SelectMethod=cursor.

Warehouse user (KSY_WAREHOUSE_USER)
The Warehouse user

The type is string.

This value is required.

Default value: None

Warehouse Password (KSY_WAREHOUSE_PASSWORD)
The Warehouse password

The type is password.

This value is required.

Default value: None

TEPS Server Host (KSY_CNP_SERVER_HOST)
The TEPS hostname

The type is string.

This value is required.

Default value: localhost

TEPS Server Port (KSY_CNP_SERVER_PORT)
The TEPS port (default 1920)

The type is numeric.

This value is required.

Default value: 1920

Scheduling (SCHEDULING)
Scheduling Details

The configuration elements defined in this group are always present in the agent's configuration.

This group defines information that applies to the entire agent.

Fixed Schedule (KSY_FIXED_SCHEDULE)
If fixed scheduling is in use. Allowed values are Y for yes, N for no.

The type is restricted.

This value is required.

Default value: Y

Every N days (KSY_EVERY_N_DAYS)
The number of days between runs (default is 1)

The type is numeric.

This value is required.

Default value: 1

Hour to run (KSY_HOUR_TO_RUN)
The fixed hour to run (valid values are 0-12, default is 2)

The type is numeric.

This value is required.

Default value: 2

Minute to run (KSY_MINUTE_TO_RUN)
The fixed minute to run (default is 0)

The type is numeric.

This value is required.

Default value: 0

AM/PM (KSY_HOUR_AM_PM)
AM or PM

The type is restricted.

This value is required.

Default value: AM

Every N minutes (KSY_EVERY_N_MINS)
Minutes between flexible runs

The type is numeric.

This value is required.

Default value: 60

Blackout (KSY_BLACKOUT)
Exception times in HH:MM-HH:MM format (24 hour clock), comma separated when flexible scheduling shouldn't run

The type is string.

This value is optional.

Work Days (WORK)
Work Days Details

The configuration elements defined in this group are always present in the agent's configuration.

This group defines information that applies to the entire agent.

Week starts on (KSY_START_OF_WEEK_DAY)
The day the week starts (default is Sunday). Valid values are 0 and 1. 0 = Sunday, 1 = Monday.

The type is restricted.

This value is required.

Default value: 0

Off Peak Shift Hours (KSY_SHIFT1_HOURS)
Off peak shift hours, comma separated

The type is string.

This value is required.

Default value: 0,1,2,3,4,5,6,7,8,18,19,20,21,22,23

Peak Shift Hours (KSY_SHIFT2_HOURS)
Peak shift hours, comma separated

The type is string.

This value is required.

Default value: 9,10,11,12,13,14,15,16,17

Count weekends as vacation (KSY_WEEKENDS_AS_VACATIONS)
Whether to consider weekends as vacation days (default is Yes). Allowed values are Y for yes and N for no.

The type is restricted.

This value is required.

Default value: Y

Vacation days (KSY_VACATION_DAYS)
Vacation days (YYYYMMDD format), comma separated

The type is string.

This value is optional.

Log Settings (LOG)
Log Settings Details

The configuration elements defined in this group are always present in the agent's configuration.

This group defines information that applies to the entire agent.

Prune WAREHOUSELOG (KSY_WAREHOUSELOG_PRUNE)
Specify whether the WAREHOUSELOG table will be pruned. Format is nnn.unit where nnn is the number of units and unit is day, month or year. Specify blank to not prune the table.

The type is string.

This value is optional.

Prune WAREHOUSEAGGREGLOG (KSY_WAREHOUSEAGGREGLOG_PRUNE)
Specify whether the WAREHOUSEAGGREGLOG table will be pruned. Format is nnn.unit where nnn is the number of units and unit is day, month or year. Specify blank to not prune the table.

The type is string.

This value is optional.

Additional Settings (ADDITIONAL)
Additional Settings Details

The configuration elements defined in this group are always present in the agent's configuration.

This group defines information that applies to the entire agent.

Number of worker threads (KSY_MAX_WORKER_THREADS)
The number of worker threads to be used

The type is numeric.

This value is required.

Default value: 2

Maximum rows per database transaction (KSY_MAX_ROWS_PER_TRANSACTION)
The maximum number of rows per transaction (effective size is this value divided by number of worker threads)

The type is numeric.

This value is required.

Default value: 1000

Use timezone offset from (KSY_TIMEZONE_IND)
Which timezone to use when aggregating the data: agent or warehouse (default is agent)

The type is restricted.

This value is required.

Default value: agent

Aggregate hourly data older than (KSY_HOUR_AGE_UNITS)
The minimum age for hourly data to be aggregated (default is 1)

The type is numeric.

This value is required.

Default value: 1

Aggregate daily data older than (KSY_DAY_AGE_UNITS)
The minimum age for daily data to be aggregated (default is 0)

The type is numeric.

This value is required.

Default value: 0

Maximum number of node errors to display (KSY_NODE_ERROR_UNITS)
The number of errors to keep in memory (default is 10)

The type is numeric.

This value is required.

Default value: 10

Maximum number of Summarization and Pruning runs to display (KSY_SUMMARIZATION_UNITS)
The number of summarization runs to keep in memory (default is 10)

The type is numeric.

This value is required.

Default value: 10

Database Connectivity Cache Time (minutes) (KSY_CACHE_MINS)
The number of minutes to cache the database status (default is 10)

The type is numeric.

This value is required.

Default value: 10

Batch mode (KSY_BATCH_MODE)
The type of batching to be used (default is single system). Allowed values are 0 for single system, 1 for multiple system.

The type is restricted.

This value is optional.

Default value: 0

Database Compression (KSY_DB_COMPRESSION)
Enable database compression, if supported (default is no)

The type is restricted.

This value is required.

Default value: N

Database Table Partitioning (KSY_PARTITION)
Enable the usage of table partitioning, if supported. Allowed values are Y for yes, N for no.

The type is restricted.

This value is required.

Default value: N

Number of future partitions to maintain (KSY_PARTITIONS_UPWARD)
Define the number of partitions in the future that should be created. For detailed, hourly and daily, the value is in days. For other aggregations, it is the number of units in that aggregation granularity. Valid values are between 1 and 10.

The type is numeric.

This value is required.

Default value: 10

Group by threshold (days) (KSY_GROUP_BY_THRESHOLD)
Define the number of days that should be used when discovering agents on a given table. Valid values are between 0 and 30 days. Weekly and above aggregated tables will always use 2 if the value defined is not 0. A value of 0 means to scan the entire table.

The type is numeric.

This value is required.

Default value: 0

Default table container (KSY_DEFAULT_TABLE_CONTAINER)
Define the default table container which should be used when creating new tables. The value must follow the naming rules of the database system being used. A blank value causes the database to select the container in which the table will be created. Only supported for DB2 Linux/UNIX/Windows,and Oracle.

The type is string.

This value is optional.

Default value: None

Default index container (KSY_DEFAULT_INDEX_CONTAINER)
Define the default index container which should be used when creating new tables. Use this to place indices in a separate container from tables. The value must follow the naming rules of the database system being used. For DB2, if indices are stored in a separate tablespace from the table data, both the table and index containers must be Database Managed Tablespaces. Only supported for DB2 Linux/UNIX/Windows,and Oracle.

The type is string.

This value is optional.

Default value: None

Disable data warehouse log tables

With IBM Tivoli Monitoring v6.2.3 and later, there is now the ability to disable the creation of the data warehouse log tables so that fewer database resources are needed. This is the now the default configuration for both the Warehouse Proxy Agent and the Summarization and Pruning Agents. If upgrading from an existing installation, you can truncate the existing tables in the database to allow their storage space to be reclaimed.

About this task

If you want to revert to the previous behavior the configuration files need to be edited. For the Summarization and Pruning Agent, edit the Summarization and Pruning Agent configuration file (sy.ini on UNIX and Linux systems, KSYENV on Windows systems) and change the variable KSY_WHLOG_ENABLE to Y. The default value is N.

Remote installation and configuration

You can install the monitoring agent remotely from the Tivoli Enterprise Portal or from the command line.

When installing the agent remotely, you must provide the configuration values for the agent to operate. See “Configuration values” on page 5.

To install from the portal, see the *IBM Tivoli Monitoring Installation and Setup Guide*.

To remotely install or configure an agent through the Tivoli Enterprise Portal, you must have installed the application support for that agent (Tivoli Enterprise Monitoring Server, Tivoli Enterprise Portal Server, and Tivoli Enterprise Portal). You must also have installed the agent bundle into the Remote Deploy Depot. Use the **addBundles** command to populate the depot.

For information about displaying the configuration options that are available to use with the **configureSystem** or **addSystem** commands, see "tacmd describeSystemType" in the *IBM Tivoli Monitoring Command Reference*.

If you are using the command line, the following command is an example of remote installation and configuration for Windows operating systems: After performing a remote configuration

```
tacmd addSystem -t SY -n managed system name -p
DBTYPE.KSY_WAREHOUSE_TYPE=
SOURCES.KSY_WAREHOUSE_JARS=
SOURCES.KSY_DB2_JDBCURL=
SOURCES.KSY_DB2_JDBCDRIVER=
SOURCES.KSY_ORACLE_JDBCURL=
SOURCES.KSY_ORACLE_JDBCDRIVER=
SOURCES.KSY_MSSQL_JDBCURL=
SOURCES.KSY_MSSQL_JDBCDRIVER=
SOURCES.KSY_WAREHOUSE_USER=
SOURCES.KSY_WAREHOUSE_PASSWORD=
SOURCES.KSY_CNP_SERVER_HOST=
SOURCES.KSY_CNP_SERVER_PORT=
SCHEDULING.KSY_FIXED_SCHEDULE=
SCHEDULING.KSY_EVERY_N_DAYS=
SCHEDULING.KSY_HOUR_TO_RUN=
SCHEDULING.KSY_MINUTE_TO_RUN=
SCHEDULING.KSY_HOUR_AM_PM=
SCHEDULING.KSY_EVERY_N_MINS=
SCHEDULING.KSY_BLACKOUT=
WORK.KSY_START_OF_WEEK_DAY=0
WORK.KSY_SHIFT1_HOURS=
WORK.KSY_SHIFT2_HOURS=
WORK.KSY_WEEKENDS_AS_VACATIONS=
WORK.KSY_VACATION_DAYS=
LOG.KSY_WAREHOUSELOG_PRUNE=
LOG.KSY_WAREHOUSEAGGREGLOG_PRUNE=
ADDITIONAL.KSY_MAX_WORKER_THREADS=
ADDITIONAL.KSY_MAX_ROWS_PER_TRANSACTION=
ADDITIONAL.KSY_TIMEZONE_IND=
ADDITIONAL.KSY_HOUR_AGE_UNITS=
ADDITIONAL.KSY_DAY_AGE_UNITS=
ADDITIONAL.KSY_NODE_ERROR_UNITS=
ADDITIONAL.KSY_SUMMARIZATION_UNITS=
ADDITIONAL.KSY_CACHE_MINS=
ADDITIONAL.KSY_BATCH_MODE=
ADDITIONAL.KSY_DB_COMPRESSION=
ADDITIONAL.KSY_PARTITION=
ADDITIONAL.KSY_PARTITIONS_UPWARD=
ADDITIONAL.KSY_GROUP_BY_THRESHOLD=
ADDITIONAL.KSY_DEFAULT_TABLE_CONTAINER=
ADDITIONAL.KSY_DEFAULT_INDEX_CONTAINER=
```

The following command is an example of using the **configureSystem** command to enable partitioning with 7 partitions forward:

```
tacmd configureSystem -m <SPA managed system name> -p
ADDITIONAL.KSY_PARTITION=Y ADDITIONAL.KSY_PARTITIONS_UPWARD=7
```

Chapter 3. Workspaces reference

A workspace is the working area of the Tivoli Enterprise Portal application window. The Navigator tree that is displayed at the left of the workspace contains a list of the workspaces provided by the agent.

About workspaces

A workspace is the working area of the Tivoli Enterprise Portal application window. Use the Navigator tree that is displayed at the left of the workspace to select the workspace you want to see. As part of the application window, the right side of the status bar shows the Tivoli Enterprise Portal Server name and port number to which the displayed information applies and the ID of the current user.

When you select an item in the Navigator tree, a default workspace is displayed. When you right-click a Navigator item, a menu that includes a Workspace item is displayed. The Workspace item contains a list of workspaces for that Navigator item. Each workspace has at least one view. Some views have links to other workspaces. You can also use the Workspace Gallery tool as described in the *IBM Tivoli Monitoring User's Guide* to open workspaces.

The workspaces in the Navigator are shown in a Physical view that shows your enterprise as a physical mapping or a dynamically populated logical view that is agent-specific. You can also create a Logical view. The Physical view is the default view.

This monitoring agent provides predefined workspaces. You cannot modify or delete the predefined workspaces, but you can create new workspaces by editing them and saving the changes with a different name.

A table view within a workspace corresponds to a group of attributes; the columns in the table view show some or all of the attributes available in the attribute group.

Additional information about workspaces

For more information about creating, customizing, and working with workspaces, see the *IBM Tivoli Monitoring User's Guide*

For a list of the predefined workspaces for this monitoring agent and a description of each workspace, see Predefined workspaces and the information about each individual workspace.

Some attribute groups for this monitoring agent might not be represented in the predefined workspaces or views for this agent. For a full list of the attribute groups, see "Attribute groups for the Warehouse Summarization and Pruning Agent" on page 19.

Predefined workspaces

The Warehouse Summarization and Pruning Agent provides predefined workspaces, which are organized by Navigator item.

- Warehouse Summarization and Pruning Agent Navigator item
  - Warehouse Summarization and Pruning Agent workspace
- Configuration Navigator item
  - Configuration workspace
  - Connectivity workspace
- Statistics Navigator item
  - Statistics workspace
  - Table Partition Statistics workspace
  - Work Completed workspace

Workspace descriptions

Each workspace description provides information about the workspace such as the purpose and a list of views in the workspace.

Workspaces are listed under Navigator items.

Warehouse Summarization and Pruning Agent Navigator item

The workspace descriptions are organized by the Navigator item to which the workspaces are relevant.

Warehouse Summarization and Pruning Agent workspace
This workspace displays the status of the Summarization and Pruning agent.

This workspace contains the following views:

Top Ten Tables by Run Length
Displays the top 10 tables by run length of the most recent run of the Summarization and Pruning Agent.

Connectivity
Displays the status of the connectivity to the Tivoli Enterprise Portal Server and to the warehouse database.

Errors Details the errors that have occurred during Summarization and Pruning. If applicable, the SQL State and SQL Code are provided. The SQL Code is database specific and documented by the database vendor. By default, the most recent 100 errors are displayed. The number of errors displayed can be changed via the KSY_NODE_ERROR_UNITS configuration value and can also be changed via the agent configuration panel “Maximum number of node errors to display” setting.

Configuration Navigator item

The workspace descriptions are organized by the Navigator item to which the workspaces are relevant.

Configuration workspace
Provides configuration data for the Summarization and Pruning Agent.

This workspace contains the following views:

Agent Configuration
Displays the configuration data for the Summarization and Pruning Agent.

Scheduling Configuration
Displays the scheduling configuration data for the Summarization and Pruning Agent.

Log Configuration
Displays the log table pruning configuration data for the Summarization and Pruning Agent.

Database Tables Configuration
Displays the database table configuration information for the Summarization and Pruning Agent.

Connectivity workspace
This workspace provides the connectivity information for the Summarization and Pruning Agent.

This workspace contains the following views:

TEPS Connectivity
Displays the Tivoli Enterprise Portal Server connectivity information and status.

Database Connectivity
Displays the database connectivity information and status.

Statistics Navigator item

The workspace descriptions are organized by the Navigator item to which the workspaces are relevant.

Statistics workspace
Provides the Summarization and Pruning run length statistics.

This workspace contains the following views:

Run Length
Displays the total run length of the last few Summarization and Pruning runs on the system. By default, only the last 10 runs are displayed. This can be changed via the KSY_SUMMARIZATION_UNITS configuration value and can also be configured in the agent configuration panel "Maximum number of Summarization and Pruning runs to display" setting.

Table Run Length
Displays the run length for each table of the last Summarization and Pruning run on the system.

Errors Details the errors that have occurred during Summarization and Pruning. By default, only the 100 most recent errors are displayed. This can be changed via the KSY_NODE_ERROR_UNITS configuration value and can also be configured in the agent configuration panle "Maximum number of node errors to display" setting.

Table Partition Statistics workspace
This workspace provides statistics about the table partitions if table range partitioning is enabled.

This workspace contains the following views:

Table Partition Statistics
Displays the total number of partitions in each table along with the number of partitions created, added, removed, or rotated per table per product. The table is only populated if the summarization and pruning agent is configured to partition tables.

Work Completed workspace
This workspace provides statistics about the completed work by the Summarization and Pruning Agent.

This workspace contains the following views:

Rows Summarized
Displays the total number of rows summarized per run by the Summarization and Pruning Agent over the past few runs. By default, only the most 10 recent runs are displayed. This can be changed via the KSY_SUMMARIZATION_UNITS configuration value and can also be configured via the agent configuration panel "Maximum number of Summarization and Pruning runs to display" setting.

Table Rows Summarized
Displays the total number of rows summarized per table by Summarization and Pruning Agent for the most recent run. Rows are sorted by the number of rows summarized (tables with no rows summarized are excluded).

Rows Pruned
Displays the total number of rows pruned per run by the Summarization and Pruning Agent over the past few runs. This can be changed via the KSY_SUMMARIZATION_UNITS configuration value and can also be configured via the agent configuration panel "Maximum number of Summarization and Pruning runs to display" setting. The number of runs to display, by default, is 10. .

Table Rows Pruned
Displays the total number of rows pruned per table by Summarization and Pruning Agent for the most recent run. Rows are sorted by the number of rows pruned (tables with no rows pruned are excluded).

Chapter 4. Attributes reference

Attributes are the application properties that are being measured and reported by the Warehouse Summarization and Pruning Agent.

Attributes are organized into groups according to their purpose. The attributes in a group can be used in the following two ways:

- Chart or table views

  Attributes are displayed in chart and table views. The chart and table views use queries to specify which attribute values to request from a monitoring agent. You use the Query editor to create a query, modify an existing query, or apply filters and set styles to define the content and appearance of a view based on an existing query.
- Situations

  You use attributes to create situations that monitor the state of your operating system, database, or application. A situation describes a condition you want to test. When you start a situation, the Tivoli Enterprise Portal compares the values you have assigned to the situation attributes with the values collected by the Warehouse Summarization and Pruning Agent and registers an *event* if the condition is met. You are alerted to events by indicator icons that are displayed in the Navigator.

Additional information about attributes

For more information about using attributes and attribute groups, see the *IBM Tivoli Monitoring User's Guide*.

For a list of the attribute groups, a list of the attributes in each attribute group, and descriptions of the attributes for this monitoring agent, see "Attribute groups for the Warehouse Summarization and Pruning Agent" and "Attributes in each attribute group" on page 20.

Attribute groups for the Warehouse Summarization and Pruning Agent

The Warehouse Summarization and Pruning agent contains the following attribute groups. The table name depends on the maximum table name limits of the target database being used for the Tivoli Data Warehouse. If the maximum name is 30 characters, then any warehouse table name longer than 30 characters is shortened to 30 characters.

- Attribute group name: Connectivity
  - Table name: KSYCONNECT
  - Warehouse table name: KSYCONNECT or KSY_CONNECTIVITY
- Attribute group name: Summarization Config
  - Table name: KSYCONFIG
  - Warehouse table name: KSYCONFIG or KSY_SUMMARIZATION CONFIG
- Attribute group name: Summarization Statistics
  - Table name: KSYSUMMSTA
  - Warehouse table name: KSYSUMMSTA or KSY_SUMMARIZATION STATISTICS

- Attribute group name: Table Statistics
  - Table name: KSYTABLE
  - Warehouse table name: KSYTABLE or KSY_TABLE STATISTICS

The remaining sections of this chapter contain descriptions of these attribute groups, which are listed alphabetically. The following information is provided for each attribute group:

Historical group
Whether the attribute group is a historical type that you can roll off to a data warehouse

Attribute descriptions
Description, type, and Warehouse name for each attribute in the attribute group

Some attributes are designated as key attributes. A key attribute is an attribute that is used in warehouse aggregation to identify rows of data that represent the same object.

Attributes in each attribute group

Attributes in each Warehouse Summarization and Pruning Agent attribute group collect data that the agent uses for monitoring.

The descriptions of the attribute groups contain the following information:

Historical group
Whether the attribute group is a historical type that you can roll off to a data warehouse.

Attribute descriptions
Description, type, and Warehouse name (if applicable) for each attribute in the attribute group.

Some attributes are designated as key attributes. A *key attribute* is an attribute that is used in warehouse aggregation to identify rows of data that represent the same object.

Connectivity attribute group

This attribute group monitors connectivity of Summarization and Pruning agent to the Tivoli Enterprise Portal Server and the Warehouse database.

Historical group
This attribute group is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the Connectivity attribute group:

Node attribute - This attribute is a key attribute.

Description
The managed system name of the agent.

Type

String

Warehouse name
NODE

Timestamp attribute

Description
The local time at the agent when the data was collected.

Type

String

Warehouse name
TIMESTAMP

TEPS Host Name attribute

Description
Host name for the Tivoli Enterprise Portal Server that the agent obtains configuration settings from.

Type

String

Warehouse name
TEPS_HOST_NAME or TEPSHOST

TEPS Port attribute

Description
Port number for the Tivoli Enterprise Portal Server that the agent obtains configuration settings from.

Type

Integer (32-bit numeric property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)
- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
TEPS_PORT or TEPSPORT

Database Type attribute

Description
Type of database being used for warehousing.

Type

Integer with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Unknown (0)
- DB2 (1)
- Microsoft SQL Server (2)
- Oracle (3)
- DB2 z/OS (4)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
DATABASE_TYPE or DBTYPE

URL attribute

Description
The JDBC Database URL.

Type

String

Warehouse name
URL

Driver attribute

Description
Fully qualified driver for database connection.

Type

String

Warehouse name
DRIVER

Driver Version attribute

Description
Version of driver being used.

Type

String

Warehouse name
DRIVER_VERSION or DRIVERVER

Database Version attribute

Description
Version of database being used.

Type

String

Warehouse name
DATABASE_VERSION or DBVERSION

Classpath attribute

Description
Classpath used to access database.

Type

String

Warehouse name
CLASSPATH

TEPS Connectivity attribute

Description

Whether there is connectivity to the Tivoli Enterprise Portal Server.

Type

Integer with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- No (0)
- Yes (1)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

TEPS_CONNECTIVITY or TEPSCONNCT

DB Connectivity attribute

Description

Whether there is connectivity to the database. The information is cached by default for 10 minutes. This can be changed via the KSY_CACHE_MINS configuration value and also via the agent configuration panel “Database Connectivity Cache Time” setting.

Type

Integer with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- No (0)
- Yes (1)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

DB_CONNECTIVITY or DBCONNECT

Summarization Config attribute group

This attribute group displays current configuration for the Summarization and Pruning agent.

Historical group

This attribute group is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the agent trace log attribute group:

Node attribute - This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Warehouse name
NODE

Timestamp attribute

Description
The local time at the agent when the data was collected.

Type

String

Warehouse name
TIMESTAMP

Fixed Frequency attribute

Description
Number of days between Summarization and Pruning runs.

Type

Integer (32-bit numeric property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)
- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
FIXED_FREQUENCY or FIXEDFREQ

Fixed Scheduled Time attribute

Description
Time that the summarization and pruning agent will run if fixed scheduling is configured.

Type

String

Warehouse name
FIXED_SCHEDULED_TIME or FIXEDTIME

Fixed Scheduling attribute

Description
Whether fixed scheduling is enabled.

Type

Integer with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- No (0)
- Yes (1)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
FIXED_SCHEDULING or FIXEDSCHDL

Flexible Scheduling Minutes attribute

Description
Number of minutes between flexible runs.

Type

Integer (32-bit numeric property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)
- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
FLEXIBLE_SCHEDULING_MINUTES or SCHDLMINUT

Flexible Scheduling Exceptions attribute

Description
Comma delimited list of exceptions to flexible scheduling.

Type

String

Warehouse name
FLEXIBLE_SCHEDULING_EXCEPTIONS or SCHDLEXCEP

Num Threads attribute

Description
Number of worker threads to use for Summarization and Pruning.

Type

Integer (32-bit numeric property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)
- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
NUM_THREADS or NUMTHREADS

Week Beginning attribute

Description
Whether the week starts on Monday or Sunday.

Type

Integer with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Sunday (0)
- Monday (1)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
WEEK_BEGINNING or WEEKBEGIN

Shifts Specified attribute

Description
Whether shifts are specified.

Type

Integer with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- No (0)
- Yes (1)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
SHIFTS_SPECIFIED or SHIFTS

Vacation Enabled attribute

Description
Whether vacation days are specified.

Type

Integer with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- No (0)
- Yes (1)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
VACATION_ENABLED or VACENABLED

Weekend Vacation attribute

Description
Whether weekend days are considered to be vacation days.

Type

Integer with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- No (0)
- Yes (1)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
WEEKEND_VACATION or WEEKENDVAC

Vacation Days attribute

Description
A comma-delimited list of the days that are specified for vacation.

Type

String

Warehouse name
VACATION_DAYS or VACDAYS

Peak Shift Hours attribute

Description
Comma delimited list of peak shift hours.

Type

String

Warehouse name
PEAK_SHIFT_HOURS or PEAKSHIFT

Off Peak Shift Hours attribute

Description
Comma delimited list of off peak shift hours.

Type

String

Warehouse name
OFF_PEAK_SHIFT_HOURS or OFFPKSHIFT

Prune WAREHOUSELOG attribute

Description
Whether to prune the WAREHOUSELOG.

Type

Integer with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- No (0)
- Yes (1)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
PRUNE_WAREHOUSELOG or PRUNEWHLOG

WAREHOUSELOG Time attribute

Description
Amount of time to keep WAREHOUSELOG data before pruning.

Type

Integer (32-bit numeric property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)
- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
WAREHOUSELOG_TIME or WHLOG

WAREHOUSELOG Units attribute

Description
Units for the time to keep the WAREHOUSELOG.

Type

Integer with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- N/A (0)
- Days (1)
- Months (2)
- Years (3)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
WAREHOUSELOG_UNITS or WHLOGUNITS

Prune WAREHOUSEAGGREGLOG attribute

Description
Whether to prune the WAREHOUSEAGGREGLOG.

Type

Integer with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- No (0)
- Yes (1)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
PRUNE_WAREHOUSEAGGREGLOG or PRUNEAGGLG

WAREHOUSEAGGREGLOG Time attribute

Description
Amount of time to keep WAREHOUSEAGGREGLOG data before pruning.

Type

Integer (32-bit numeric property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)
- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
WAREHOUSEAGGREGLOG_TIME or WHAGGLOG

WAREHOUSEAGGREGLOG Units attribute

Description
Units for the time to keep the WAREHOUSEAGGREGLOG.

Type

Integer with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- N/A (0)
- Days (1)
- Months (2)
- Years (3)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
WAREHOUSEAGGREGLOG_UNITS or WHAGGUNITS

Max Rows Per DB Transaction attribute

Description
Number of rows per database transaction.

Type

Integer (32-bit numeric property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)
- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
MAX_ROWS_PER_DB_TRANSACTION or MAXROWS

Timezone Source attribute

Description
Whether the agent or warehouse is the source of timezone information.

Type

Integer with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Agent (0)
- Warehouse (1)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
TIMEZONE_SOURCE or TZSOURCE

Hourly Data Summarization attribute

Description
Summarize hourly data older than this many hours.

Type

Integer (32-bit numeric property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)
- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
HOURLY_DATA_SUMMARIZATION or HOURLYDATA

Daily Data Summarization attribute

Description
Summarize daily data older than this many days.

Type

Integer (32-bit numeric property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)
- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
DAILY_DATA_SUMMARIZATION or DAILYDATA

Next Work Time attribute

Description
Next time that the Summarization and Pruning agent is scheduled to work.

Type

Timestamp

Warehouse name
NEXT_WORK_TIME or NEXTWORK

Summarization and Pruning Rows attribute

Description
Number of Summarization and Pruning rows shown in workspace.

Type

Integer (32-bit numeric property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)
- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
SUMMARIZATION_AND_PRUNING_ROWS or SUMMROWS

Error Rows attribute

Description
Number of errors shown in workspace.

Type

Integer (32-bit numeric property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)
- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
ERROR_ROWS or ERRORROWS

Connectivity Cache Minutes attribute

Description
Number of minutes to cache database connectivity data.

Type

Integer (32-bit numeric property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal.

The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)
- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
CONNECTIVITY_CACHE_MINUTES or CONNCACHE

Batch Mode attribute

Description
Whether Single System or Multiple System batch mode is in use.

Type

Integer with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Single Managed System (0)
- Multiple Managed Systems (1)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
BATCH_MODE or BATCHMODE

Database Compression attribute

Description
Database Compression. It can be set using the variable KSY_DB_COMPRESSION. The default value is N.

Type

Integer with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- No (0)
- Yes (1)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
DATABASE_COMPRESSION or DBCOMPRESS

Table Partitioning attribute

Description
This indicates whether partitioning is or is not enabled and can be set using the variable KHD_PARTITION. The default value is N. Partitioning is not supported for MSSQL warehouse databases.

Type Integer with enumerated values. The strings are displayed in the Tivoli Enterprise Portal when one is defined for the

value. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Yes (1)
- No (0)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
TABLE_PARTITIONING or PARTENBL

Forward Partitions attribute

Description
Number of partitions in the future that should be created. It can be set using the variable KHD_PARTITIONS_UPWARD. The default value is 10. The minimum value is 1.

Type Integer (32-bit numeric property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal when one is defined for the value. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)
- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
FORWARD_PARTITIONS or PRTUPWRD

Group By Threshold attribute

Description
Number of days that should be used when discovering agents on a given table. It can be set using the variable KSY_GROUP_BY_THRESHOLD. The default value is 0.

Type Integer (32-bit numeric property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal when one is defined for the value. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)
- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
GROUP_BY_THRESHOLD or GRPTHRS

Default Table Container attribute

Description
This indicates the default table container which should be used when creating new tables. It can be set using the variable KHD_DEFAULT_TABLE_CONTAINER. This is not supported for MSSQL, nor DB2 Z/OS databases.

Type String.

Warehouse name
DEFAULT_TABLE_CONTAINER or TBLTBSP

Default Index Container attribute

Description
This indicates the default index container which should be used when creating new tables. It can be set using the variable KHD_DEFAULT_INDEX_CONTAINER. This is not supported for MSSQL, nor DB2 Z/OS databases.

Type String.

Warehouse name
DEFAULT_INDEX_CONTAINER or IDXTBSP

Summarization Statistics attribute group

This attribute group monitors Summarization and Pruning run statistics.

Historical group
This attribute group is eligible for use with Tivoli Data Warehouse.

Attribute descriptions
The following list contains information about each attribute in the control domain attribute group:

Node attribute - This attribute is a key attribute.

Description
The managed system name of the agent.

Type

String

Warehouse name
NODE

Timestamp attribute

Description
The local time at the agent when the data was collected.

Type

String

Warehouse name
TIMESTAMP

Start Time attribute

Description
Local time that the Summarization and Pruning run began.

Type

Timestamp

Warehouse name
START_TIME or STARTTIME

End Time attribute

Description
Local time that the Summarization and Pruning run ended.

Type

Timestamp

Warehouse name
END_TIME or ENDTIME

Run Length (hour) attribute

Description
Length of Summarization and Pruning run in hours.

Type

Real number (32-bit gauge) with 2 decimal places of precision with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)
- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
RUN_LENGTH or RUNLENGTH

Thread Pool Size attribute

Description
Size of thread pool.

Type

Integer (32-bit numeric property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)
- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
THREAD_POOL_SIZE or THREADPOOL

Active Threads attribute

Description
Number of threads active for Summarization and Pruning Agent.

Type

Integer (32-bit numeric property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)

- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
ACTIVE_THREADS or ACTVTHREAD

Rows Pruned attribute

Description
Number of rows pruned.

Type

Integer (32-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)
- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
ROWS_PRUNED or PRUNED

Rows Summarized attribute

Description
Number of rows summarized.

Type

Integer (32-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)
- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
ROWS_SUMMARIZED or SUMMARIZED

Failures attribute

Description
Total number of summarization and pruning failures that occurred.

Type

Integer (32-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)
- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
FAILURES

Pruning Failures attribute

Description
Number of failures which occurred during pruning.

Type

Integer (32-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)
- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
PRUNING_FAILURES or PRUNEFAIL

Summarization Failures attribute

Description
Number of failures that occurred during summarization.

Type

Integer (32-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)
- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
SUMMARIZATION_FAILURES or SUMMFAIL

Run Window (hour) attribute

Description
Time configured between Summarization and Pruning runs in hours.

Type

Integer (32-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)
- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
RUN_WINDOW or RUNWINDOW

Window Used (percent) attribute

Description
Percent of the time between configured Summarization and Pruning runs consumed.

Type

Integer (32-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)
- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
WINDOW_USED or WINDOWUSED

Table Statistics attribute group

This attribute group displays individual table statistics for Summarization and Pruning runs.

Historical group
This attribute group is eligible for use with Tivoli Data Warehouse.

Attribute descriptions
The following list contains information about each attribute in the host cpu attribute group:

Node attribute - This attribute is a key attribute.

Description
The managed system name of the agent.

Type

String

Warehouse name
NODE

Timestamp attribute

Description
The local time at the agent when the data was collected.

Type

String

Warehouse name
TIMESTAMP

Start Time attribute

Description
Local time that the Summarization and Pruning began for this table.

Type

Timestamp

Warehouse name
START_TIME or STARTTIME

End Time attribute

Description
Local time that the Summarization and Pruning ended for this table.

Type

Timestamp

Warehouse name
END_TIME or ENDTIME

Run Length (min) attribute

Description
Length of Summarization and Pruning for this table in minutes.

Type

Real number (32-bit gauge) with 1 decimal places of precision with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)
- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
RUN_LENGTH or RUNLENGTH

Product Code attribute - This attribute is a key attribute.

Description
Product code for this table.

Type

String

Warehouse name
PRODUCT_CODE or PRODCODE

Rows Updated attribute

Description
Number of summary rows updated.

Type

Integer (32-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)

- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
ROWS_UPDATED or UPDATED

Rows Created attribute

Description
Number of summary rows created.

Type

Integer (32-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)
- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
ROWS_CREATED or CREATED

Managed Systems Processed attribute

Description
Number of managed systems processed.

Type

Integer (32-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)
- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
MANAGED_SYSTEMS_PROCESSED or MNGSYSTEMS

Table Name attribute - This attribute is a key attribute.

Description
Name of table being summarized and pruned.

Type

String

Warehouse name
TABLE_NAME or TABLENAME

Attribute Group Name attribute

Description
Name of attribute group for this table.

Type

String

Warehouse name
ATTRIBUTE_GROUP_NAME or ATTRIBNAME

Rows Pruned attribute

Description
Number of rows pruned.

Type

Integer (32-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)
- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
ROWS_PRUNED or PRUNED

Rows Summarized attribute

Description
Number of rows summarized.

Type

Integer (32-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)
- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
ROWS_SUMMARIZED or SUMMARIZED

Failures attribute

Description
Total number of summarization and pruning failures that occurred in this table.

Type

Integer (32-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)
- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
FAILURES

Pruning Failures attribute

Description
Number of failures which occurred during pruning for this table.

Type

Integer (32-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)
- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
PRUNING_FAILURES or PRUNEFAIL

Summarization Failures attribute

Description
Number of failures which occurred during summarization for this table.

Type

Integer (32-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)
- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
SUMMARIZATION_FAILURES or SUMMFAIL

Table Partitions Total attribute

Description
Total number of partitions in the table. The value is non-zero only if partitioning is enabled and the table conforms to the Tivoli Data Warehouse partitioning scheme.

Type

Integer (32-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)
- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
TABLE_PARTITIONS_TOTAL or PARTTOT

Table Partitions Added or Created attribute

Description
Number of partitions added or created.

Type

Integer (32-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)
- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
TABLE_PARTITIONS_ADDED or PARTADD

Table Partitions Removed or Rotated attribute

Description
Number of partitions removed (or rotated on DB/2 for z/OS).

Type

Integer (32-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Value Exceeds Maximum (2147483647)
- Value Exceeds Minimum (-2147483648)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
TABLE_PARTITIONS_REMOVED or PARTRMV

Disk capacity planning for historical data

Disk capacity planning for a monitoring agent is a prediction of the amount of disk space to be consumed for each attribute group with historical data that is being collected. Required disk storage is an important factor when you are defining data collection rules and your strategy for historical data collection.

The Capacity planning for historical data table provides the following information required to calculate disk space for this agent:

Table Table name as it is displayed in the warehouse database, if the attribute group is configured to be written to the warehouse. The table name listed here corresponds to the table name in "Attribute groups for the Warehouse Summarization and Pruning Agent" on page 19.

Attribute group
Name of the attribute group used to create the table in the warehouse database if it is short enough to fit in the table naming constraints of the database being used for the warehouse. The attribute group name listed here corresponds to the Warehouse table name in "Attribute groups for the Warehouse Summarization and Pruning Agent" on page 19.

Bytes per row (agent)
Estimate of the record length for each row or instance written to the agent disk for historical data collection. This estimate can be used for agent disk space planning purposes.

Database bytes per row (warehouse)
Estimate of the record length for detailed records written to the warehouse database, if the attribute group is configured to be written to the warehouse. Detailed records are records that have been uploaded from the agent for long-term historical data collection. This estimate can be used for warehouse disk-space planning purposes.

Aggregate bytes per row (warehouse)
Estimate of the record length for aggregate records written to the warehouse database, if the attribute group is configured to be written to the warehouse. Aggregate records are created by the Summarization agent for attribute groups that have been configured for summarization. This estimate can be used for warehouse disk-space planning purposes.

In addition to the information in the tables, you must know the number of rows of data that you plan to collect. An attribute group can have single or multiple rows of data depending on the application environment that is being monitored. For example, if your attribute group is monitoring each processor in your computer and you have a dual processor computer, the number of rows is two.

The following table contains capacity planning information for the data logged by Warehouse Summarization and Pruning Agent.

Table 1. Capacity planning for historical data logged by component

Table	Attribute group	Bytes per instance (agent)	Database bytes per instance (warehouse)	Aggregate bytes per instance (warehouse)
KSYCONNECT	KSY_CONNECTIVITY	1212	1230	1267
KSYCONFIG	KSY_SUMMARIZATION_CONFIG	964	992	1029
KSYSUMMSTA	KSY_SUMMARIZATION_STATISTICS	140	158	441
KSYTABLE	KSY_TABLE_STATISTICS	292	314	714

For more information about historical data collection, see the *IBM Tivoli Monitoring Administrator's Guide*.

Chapter 5. Situations reference

A situation is a logical expression involving one or more system conditions. Situations are used to monitor the condition of systems in your network. You can manage situations from the Tivoli Enterprise Portal by using the Situation Editor or from the command-line interface using the tacmds for situations. You can manage private situations in the private configuration XML file.

About situations

The monitoring agents that you use to monitor your system environment include a set of predefined situations that you can use as-is. You can also create new situations to meet your requirements.

Predefined situations contain attributes that check for system conditions common to many enterprises. Using predefined situations can improve the speed with which you can begin using the Warehouse Summarization and Pruning Agent. You can change the conditions or values being monitored by a predefined situation to the conditions or values best suited to your enterprise.

You can display predefined situations and create your own situations using the Situation editor. The left panel of the Situation editor initially lists the situations associated with the Navigator item that you selected. When you click a situation name or create a situation, the right panel opens with the following tabs:

Formula
: Formula describing the condition being tested.

Distribution
: List of managed systems (operating systems, subsystems, or applications) to which the situation can be distributed. All the Warehouse Summarization and Pruning Agent managed systems are assigned by default.

Expert advice
: Comments and instructions to be read in the event workspace.

Action
: Command to be sent to the system.

EIF
: Customize forwarding of the event to an Event Integration Facility receiver. (Available when the Tivoli Enterprise Monitoring Server has been configured to forward events.)

Until
: Options to close the event after a period of time, or when another situation becomes true.

Additional information about situations

The *IBM Tivoli Monitoring User's Guide* contains more information about predefined and custom situations and how to use them to respond to alerts.

For a list of the predefined situations and information about each individual situation for this monitoring agent, see "Predefined situations" on page 46.

Predefined situations

The monitoring agent contains predefined situations, which are organized by Navigator item.

- Statistics
  - KSY_Summarization_Failures
  - KSY_Pruning_Failures
  - KSY_Overload_Warning
  - KSY_Overload_Critical
- Configuration
  - KSY_TEPS_Connectivity_Fail
  - KSY_DB_Connectivity_Fail

Situation descriptions

The situation descriptions are organized by the Navigator item to which the situations are relevant.

KSY_Summarization_Failures situation

Description
Failures occurred in summarization.

The situation is evaluated for each distinct value of the ERRORTYPE attribute.

Formula

```
*IF *VALUE
KSY_SUMMARIZATION_STATISTICS.Summarization_Failures *GT 0
```

See "Attributes in each attribute group" on page 20 for descriptions of the attributes in this formula.

Distribution
This situation is automatically distributed to instances of this agent.

Run at startup
Yes

Sampling interval
None. Data is analyzed when it becomes available.

Situation persistence
Not Applicable

Error conditions
Critical

Clearing conditions
The situation does not clear automatically.

KSY_Pruning_Failures situation

Description
Failures occurred in pruning.

The situation is evaluated for each distinct value of the ERRORTYPE attribute.

Formula

```
*IF *VALUE KSY_SUMMARIZATION_STATISTICS.Pruning_Failures *GT
0
```

See "Attributes in each attribute group" on page 20 for descriptions of the attributes in this formula.

Distribution
This situation is automatically distributed to instances of this agent.

Run at startup
Yes

Sampling interval
None. Data is analyzed when it becomes available.

Situation persistence
Not Applicable

Error conditions
Critical

Clearing conditions
The situation does not clear automatically.

KSY_Overload_Warning situation

Description
Summarization and pruning is overloaded.

The situation is evaluated for each distinct value of the ERRORTYPE attribute.

Formula

```
*IF *VALUE KSY_SUMMARIZATION_STATISTICS.Window_Used *LE 95
*AND *VALUE KSY_SUMMARIZATION_STATISTICS.Window_Used *GT 70
```

See "Attributes in each attribute group" on page 20 for descriptions of the attributes in this formula.

Distribution
This situation is automatically distributed to instances of this agent.

Run at startup
Yes

Sampling interval
None. Data is analyzed when it becomes available. Note that a summarization and pruning run in progress will not trigger the situation. The situation is based on a pure event attribute group, so the situation only triggers at the end of the summarization and pruning run.

Situation persistence
Not Applicable

Error conditions
Warning

Clearing conditions
The situation does not clear automatically.

KSY_Overload_Critical situation

Description
Summarization and pruning is critically overloaded.

The situation is evaluated for each distinct value of the ERRORTYPE attribute.

Formula

```
*IF *VALUE KSY_SUMMARIZATION_STATISTICS.Window_Used *GT 95
```

See "Attributes in each attribute group" on page 20 for descriptions of the attributes in this formula.

Distribution
This situation is automatically distributed to instances of this agent.

Run at startup
Yes

Sampling interval
None. Data is analyzed when it becomes available. Note that a summarization and pruning run in progress will not trigger the situation. The situation is based on a pure event attribute group, so the situation only triggers at the end of the summarization and pruning run.

Situation persistence
Not Applicable

Error conditions
Warning

Clearing conditions
The situation does not clear automatically.

KSY_TEPS_Connectivity_Fail situation

Description
No connectivity to the Tivoli Enterprise Portal Server.

The situation is evaluated for each distinct value of the ERRORTYPE attribute.

Formula

```
*IF *VALUE KSY_CONNECTIVITY.TEPS_Connectivity *EQ 0
```

See "Attributes in each attribute group" on page 20 for descriptions of the attributes in this formula.

Distribution
This situation is automatically distributed to instances of this agent.

Run at startup
Yes

Sampling interval
None. Data is analyzed when it becomes available.

Situation persistence
Not Applicable

Error conditions
Critical

Clearing conditions
The situation does not clear automatically.

KSY_DB_Connectivity_Fail situation

Description

No connectivity to Warehouse database.

The situation is evaluated for each distinct value of the ERRORTYPE attribute.

Formula

```
*IF *VALUE KSY_CONNECTIVITY.DB_Connectivity *EQ 0
```

See "Attributes in each attribute group" on page 20 for descriptions of the attributes in this formula.

Distribution

This situation is automatically distributed to instances of this agent.

Run at startup

Yes

Sampling interval

None. Data is analyzed when it becomes available.

Situation persistence

Not Applicable

Error conditions

Critical

Clearing conditions

The situation does not clear automatically.

Chapter 6. Troubleshooting

Problems can be related to IBM Tivoli Monitoring or the specific agent that you are using.

See the *IBM Tivoli Monitoring Troubleshooting Guide* for general troubleshooting information. Also see "Support information" on page 73 for other problem-solving options.

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, or in the Requirements topic of the agent user's guide.

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

- "Gathering product information for IBM Software Support"
- "Using logging" on page 52
- "Consulting the lists of identified problems and workarounds" on page 52

Gathering product information for IBM Software Support

Before contacting IBM Software Support about a problem you are experiencing with this product, gather the information shown in Table 2.

Table 2. Information to gather before contacting IBM Software Support

Information type	Description
Log files	Collect trace log files from failing systems. Most logs are located in a logs subdirectory on the host computer. See "Principal trace log files" on page 53 for lists of all trace log files and their locations. See the *IBM Tivoli Monitoring User's Guide* for general information about the IBM Tivoli Monitoring environment.
Operating system	Operating system version number and patch level
Messages	Messages and other information displayed on the screen
Version numbers for IBM Tivoli Monitoring	Version number of the following members of the monitoring environment: • IBM Tivoli Monitoring. Also provide the patch level, if available. • IBM Tivoli Monitoring for Virtual Environments Agent for Citrix XenServer
Screen captures	Screen captures of incorrect output, if any
(UNIX systems only) Core dump files	If the system stops on UNIX systems, collect the core dump file from the *install_dir*/bin directory, where *install_dir* is the directory where you installed the monitoring agent.

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

See http://www.ibm.com/support/entry/portal/Open_service_request/Software/Software_support_(general) for information about working with IBM Software Support.

Using logging

Logging is the primary troubleshooting feature in the Warehouse Summarization and Pruning Agent. *Logging* refers to the text messages and trace data generated by the Warehouse Summarization and Pruning Agent. Messages and trace data are sent to a file.

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

Consulting the lists of identified problems and workarounds

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

- Installation and configuration
- General usage and operation
- Display of monitoring data
- Take Action commands

Information about symptoms and detailed workarounds for these types of problems is located in "Problems and workarounds" on page 65.

See the *IBM Tivoli Monitoring Troubleshooting Guide* for general troubleshooting information.

Trace logging

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

The principal log type is the RAS (Reliability, Availability, and Serviceability) trace log. These logs are in the English language only. The RAS trace log mechanism is available for all components of IBM Tivoli Monitoring. Most logs are located in a logs subdirectory on the host computer. See the following information to learn how to configure and use trace logging:

- "Principal trace log files" on page 53
- "Examples: Using trace logs" on page 57
- "Setting RAS trace parameters by using the GUI" on page 59

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

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

Overview of log file management

Log files have naming conventions.

Log file naming conventions

Table 3 provides the names, locations, and descriptions of RAS1 log files. The log file names adhere to the following naming convention:

Windows systems
hostname_productcode_program_HEXtimestamp-nn.log

Linux and UNIX systems
hostname_productcode_HEXtimestamp-nn.log

where:

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

productcode
Two-character product code. For Warehouse Summarization and Pruning Agent, the product code is sy.

program
Name of the program being run.

HEXtimestamp
Hexadecimal time stamp representing the time at which the program started.

nn Rolling log suffix.

Principal trace log files

Trace log files are located on various systems.

Table 3 contains locations, file names, and descriptions of trace logs that can help determine the source of problems with agents.

Table 3. Trace log files for troubleshooting agents

System where log is located	File name and path	Description
On the Tivoli Enterprise Monitoring Server	• **Windows:** The file in the *install_dir*\InstallITM path • **UNIX:** The candle_installation.log file in the *install_dir*/logs path • **Linux:** The candle_installation.log file in the *install_dir*/logs path	Provides details about products that are installed. **Note:** Trace logging is enabled by default. A configuration step is not required to enable this tracing.

Table 3. Trace log files for troubleshooting agents (continued)

System where log is located	File name and path	Description
On the Tivoli Enterprise Monitoring Server	The `Warehouse_Configuration.log` file is in the following location on Windows systems: *install_dir*\InstallITM	Provides details about the configuration of data warehousing for historical reporting.
On the Tivoli Enterprise Monitoring Server	The name of the RAS log file is as follows: • **Windows:** *install_dir*\logs*hostname*_ms_*timestamp-nn*.log • **UNIX:** *install_dir*/logs/*hostname*_ms_*timestamp-nn*.log • **Linux:** *install_dir*/logs/*hostname*_ms_*timestamp-nn*.log **Note:** File names for RAS1 logs include a hexadecimal time stamp. Also on UNIX systems, a log with a decimal time stamp is provided: *hostname_productcode_timestamp*.log and *hostname_productcode_timestamp*.pid nnnnn in the *install_dir*/logs path, where *nnnnn* is the process ID number.	Traces activity on the monitoring server.

Table 3. Trace log files for troubleshooting agents (continued)

System where log is located	File name and path	Description
On the Tivoli Enterprise Portal Server	The name of the RAS log file is as follows: • **Windows:** *install_dir*\logs\ *hostname* _cq_ HEXtimestamp-nn.log • **UNIX:** *install_dir* /logs/ *hostname*_cq_ HEXtimestamp-nn.log • **Linux:** *install_dir* /logs/ *hostname*_cq_ HEXtimestamp-nn.log **Note:** File names for RAS1 logs include a hexadecimal time stamp. Also on UNIX systems, a log with a decimal time stamp is provided: *hostname_productcode_ timestamp* .log and *hostname_productcode_ timestamp*.pid*nnnnn* in the *install_dir*/logs path, where *nnnnn* is the process ID number.	Traces activity on the portal server.
On the Tivoli Enterprise Portal Server	The teps_odbc.log file is located in the following path: • **Windows:***install_dir*\ InstallITM • **UNIX:***install_dir*/logs • **Linux:***install_dir*/logs	When you enable historical reporting, this log file traces the status of the warehouse proxy agent.

Table 3. Trace log files for troubleshooting agents (continued)

System where log is located	File name and path	Description
On the computer that hosts the monitoring agent	The RAS1 log files are as follows: • **UNIX:** *hostname*_xi_*instance_name*_kxiagent_HEXtimestamp-nn.log in the *install_dir*/logs directory • **Linux:** *hostname*_xi_*instance_name*_kxiagent_HEXtimestamp-nn.log in the *install_dir*/logs directory These logs are in the following directories: • **UNIX:** *install_dir*/logs • **Linux:** *install_dir*/logs On Linux systems, the following additional logs are provided: – *hostname*_xi_timestamp.log – *hostname*_xi_timestamp.pidnnnnn in the *install_dir*/logs path, where *nnnnn* is the process ID number	Traces activity of the monitoring agent.

Table 3. Trace log files for troubleshooting agents (continued)

System where log is located	File name and path	Description
On the computer that hosts the monitoring agent	The agent operations log files are as follows: *instance_hostname*SY.LG0 is the current log created when the agent was started. *instance_hostname*_SY.LG1 is the backup of the previous log. These logs are in the following directory depending on the operating system that you are using: • **Linux:** *install_dir*/logs • **UNIX:** *install_dir*/logs	Shows whether the agent could connect to the monitoring server. Shows which situations are started and stopped, and shows other events while the agent is running. A new version of this file is generated every time the agent is restarted. IBM Tivoli Monitoring generates one backup copy of the *.LG0 file with the tag .LG1. View the .LG1 tag to learn the following details regarding the *previous* monitoring session: • Status of connectivity with the monitoring server • Situations that were running • The success or failure status of Take Action commands
Definitions of variables: • *timestamp* is a time stamp with a format that includes year (y), month (m), day (d), hour (h), and minute (m), as follows: **yyyymmdd hhmm** • *HEXtimestamp* is a hexadecimal representation of the time at which the process was started. • *install_dir* represents the directory path where you installed the IBM Tivoli Monitoring component. *install_dir* can represent a path on the computer that hosts the monitoring system, the monitoring agent, or the portal. • *instance* refers to the name of the database instance that you are monitoring. • *instance_name* refers to the name of the agent instance. • *hostname* refers to the name of the computer on which the IBM Tivoli Monitoring component runs. • *nn* represents the circular sequence in which logs are rotated. this value includes a range from 1 - 5, by default. The first is always retained because it includes configuration parameters. • *productcode* specifies the product code, for example, um for Universal Agent or nt for Windows systems.		

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

Examples: Using trace logs

You can open trace logs in a text editor to learn some basic facts about your IBM Tivoli Monitoring environment.

IBM Software Support applies specialized knowledge to analyze trace logs to determine the source of problems. The following examples are from the Tivoli Enterprise Monitoring Server log.

Example one

This excerpt shows the typical 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 where the agent is running is **SERVER5B**:

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

See the following key points about the preceding excerpts:

- The monitoring server appends the **SY** product code to the server name to form a unique name (SERVER5B:XI) for this instance of the Warehouse Summarization and Pruning Agent. By using this unique name, you can distinguish 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 “Setting RAS trace parameters by using the GUI” on page 59 provide these entries.

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

1. In the Windows **Start** menu, click **Program Files** > **IBM Tivoli Monitoring** > **Manage Tivoli Enterprise Monitoring Services**. The Manage Tivoli Enterprise Monitoring Services window is displayed.
2. Right-click a component and click **Advanced** > **View Trace Log** in the menu. For example, if you want to view the trace log of the Warehouse Summarization and Pruning Agent, right-click the name of that agent in the window. You can also use the viewer to access remote logs.

   Note: The viewer converts time stamps in the logs to a format that is easier to read.

RAS trace parameters

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

See “Overview of log file management” on page 53 to ensure that you understand log rolling and can reference the correct log files when you manage log file generation.

Setting RAS trace parameters by using the GUI

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

About this task

The Warehouse Summarization and Pruning Agent uses RAS1 tracing and generates the logs described in Table 3 on page 53. The default RAS1 trace level is ERROR. The default RAS1 trace level is ERROR.

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 displayed.
3. Select a new trace setting in the pull-down menu in the **Enter RAS1 Filters** field or type a valid string.
   - General error tracing. `KBB_RAS1=ERROR`
   - Intensive error tracing. `KBB_RAS1=ERROR (UNIT:kqz ALL)`
   - Maximum error tracing. `KBB_RAS1=ERROR (UNIT:kqz 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 log files per startup of a program (changes COUNT value).
6. Modify the value for Maximum Number of Log Files Total to change the number of log files for all startups of a program (changes MAXFILES value).
7. Optional: Click **Y** (Yes) in the **KDC_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 these settings only temporarily, while you are troubleshooting problems. Otherwise, the logs can occupy excessive amounts of hard disk space.
8. Click **OK**. You see a message reporting a restart of the monitoring agent so that your changes take effect.

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 Table 3 on page 53 that include a process ID number (PID).

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

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

Manually setting RAS trace parameters

You can manually edit the RAS1 trace logging parameters.

About this task

The Warehouse Summarization and Pruning Agent uses RAS1 tracing and generates the logs described in Table 3 on page 53. The default RAS1 trace level is ERROR. The default RAS1 trace level is ERROR.

Procedure

1. Open the trace options file.
   - *install_dir*\tmaitm6\KSYENV
   - *install_dir* /config/sy.ini
2. Edit the line that begins with KBB_RAS1= to set trace logging preferences. For example, if you want detailed trace logging, set the **Maximum Tracing** option: KBB_RAS1=ERROR (UNIT:kqz ALL) (UNIT:kra ALL)
3. Edit the line that begins with KBB_RAS1_LOG= to manage the generation of log files:
   - **MAXFILES**: The total number of files that are to be kept for all startups of a given program. When this value is exceeded, the oldest log files are discarded. The default value is 9.
   - **LIMIT**: The maximum size, in megabytes (MB) of a RAS1 log file. The default value is 5.
   - IBM Software Support might guide you to modify the following parameters:
     - **COUNT**: The number of log files to keep in the rolling cycle of one program startup. The default is 3.
     - **PRESERVE**: The number of files that are not to be reused in the rolling cycle of one program startup. The default value is 1.

     Note: The **KBB_RAS1_LOG** parameter also provides for the specification of the log file directory, log file name, and the inventory control file directory and name. Do not modify these values or log information can be lost.
4. 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 - 60 MB for each agent that is running on a computer. For example, each database instance that you monitor can generate 45 - 60 MB of log data. See the "Procedure" section to learn how to adjust file size and numbers of log files to prevent logging activity from occupying too much disk space.

Regularly prune log files other than the RAS1 log files in the logs directory. Unlike the RAS1 log files that are pruned automatically, other log types can grow indefinitely, for example, the logs in Table 3 on page 53 that include a process ID number (PID).

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

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

Dynamic modification of trace settings

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, with the exception of 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. It 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, it displays the information 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 `?` to display a list of the supported commands. **ras1** is the command to modify trace settings. If you type it in the field at the bottom of the window, 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 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 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)
   ```

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
```

Problems and workarounds

The known problems and workarounds are organized into types of problems that might occur with the Warehouse Summarization and Pruning Agent, for example installation and configuration problems and workspace problems.

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

Installation and configuration troubleshooting

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

The problems and solutions in Table 4 can occur during installation, configuration, and uninstallation of the agent.

Table 4. Problems and solutions for installation and configuration

Problem	Solution
(*UNIX only*) During a command-line installation, 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_name"` where *component_name* is the name of the component that you are attempting to install. **Note:** This problem affects UNIX command-line installations. If you monitor only Windows environments, you see this problem if you choose to install a product component (for example, a monitoring server) on UNIX.	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.
A problem can arise when you install and configure a new monitoring agent to a computer where other agents are running 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 re-configured to communicate with TEMS2.	You must reconfigure the previously existing agents to restore their communication connection with TEMS1. For example, you can right-click the row for a specific agent in the Manage Tivoli Enterprise Monitoring Services, and select **Reconfigure**. See the *IBM Tivoli Monitoring Installation and Setup Guide* for more information on reconfiguration.

Table 4. Problems and solutions for installation and configuration (continued)

Problem	Solution
Diagnosing problems with product browse settings (Windows systems only).	When you have problems with browse settings, perform the following steps: 1. Click on **Start** > **Programs** > **IBM Tivoli Monitoring** > **Manage Tivoli Enterprise Monitoring Services**. The Manage Tivoli Enterprise Monitoring Services window is displayed. 2. Right-click the Windows agent and select **Browse Settings**. A text window is displayed. 3. Click **Save As** and save the information in the text file. If requested, you can forward this file to IBM Software Support for analysis.
A message similar to `Unable to find running CMS on CT_CMSLIST` in the log file is displayed.	If a message similar to `Unable to find running CMS on CT_CMSLIST`is displayed in the Log file, the agent is not able to 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.
The system is experiencing high CPU usage.	**Agent process:** View the memory usage of the KSYCMA process. If CPU usage seems to be excessive, recycle the monitoring agent. **Network Cards:** The network card configurations can decrease the performance of a system. Each of the stream of packets that a network card receives (assuming it is a broadcast or destined for the under-performing system) must generate a CPU interrupt and transfer the data through the I/O bus. If the network card in question is a bus-mastering card, work can be off-loaded and a data transfer between memory and the network card can continue without using CPU processing power. Bus-mastering cards are generally 32-bit and are based on PCI or EISA bus architectures.

Table 4. Problems and solutions for installation and configuration (continued)

Problem	Solution
After installing the Summarization and Pruning Agent v6.2.1 on Windows systems, and after installing any another monitoring agent, the Summarization and Pruning agent is not working anymore.	The C trace file associated with the Summarization and Pruning Agent shows the following issue: `"KSZ_CLASSPATH environment variable is not defined."` There is not a java trace file associated with the Summarization and Pruning Agent. Save the `KSYENV` file before installing any other monitoring agent, or follow these steps: 1. Edit the `KSYENV` file (located in `%CANDLEHOME%/TMAITM6`) and add this line anywhere in the file: `KSZ_CLASSPATH=` 2. Reconfigure the Summarization and Pruning Agent which will fill up the KSZ_CLASSPATH variable 3. Restart the Summarization and Pruning Agent There should be a java trace file as well as a C trace file created as soon as the Summarization and Pruning Agent starts. The tables should be summarized and pruned.

Table 5. General problems and solutions for uninstallation

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

Unique names for monitoring components

IBM Tivoli Monitoring might not be able to generate a unique name for monitoring components due to the truncation of names that the product automatically generates.

If the agent supports multi-instances, IBM Tivoli Monitoring automatically creates a name for each monitoring component by concatenating the subsystem name, host name, and product code separated by colons (*subsystem_name*:*hostname*:KSY).

Note: When you monitor a multinode system, such as a database, IBM Tivoli Monitoring adds a subsystem name to the concatenated name, typically a database instance name.
The length of the name that IBM Tivoli Monitoring generates is limited to 32 characters. Truncation can result in multiple components having the same 32-character name. If this problem happens, shorten the *hostname* portion of the name as follows:

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

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

Agent troubleshooting

A problem can occur with the agent after it has been installed.

Table 6 contains problems and solutions that can occur with the agent after it has been installed.

Table 6. Agent problems and solutions

Problem	Solution
Log data accumulates too rapidly.	Check the RAS trace option settings, which are described in the *IBM Tivoli Monitoring Troubleshooting Guide*. The trace options settings that you can set on the KBB_RAS1= and KDC_DEBUG= lines potentially generate large amounts of data.
The Warehouse Summarization and Pruning Agent workspaces and navigator items are not visible in the Tivoli Enterprise Portal.	The application support files need to be installed for the Tivoli Enterprise Portal Server, browser Tivoli Enterprise Portal, and desktop Tivoli Enterprise Portal. This problem can occur in IBM Tivoli Monitoring upgrade environments where the Warehouse Summarization and Pruning Agent is upgraded from a version that did not have the self monitoring capabilities, and the support files were not selected in the upgrade.

Table 6. Agent problems and solutions (continued)

Problem	Solution

The agent stops or does not record any data.	The agent trace log file should be examined. The log file is located in the `HOME\logs` directory and is created during the running of the agent. The name of the file is *HOSTNAME*`_SY_JAVA_`**timestamp**`-01.log`. *HOSTNAME* is the host where the agent runs, and the timestamp is the time the agent started. The timestamp is sequential in nature, so it should be the latest log created for the agent.
	
	If you receive the following error, remove the `SelectMethod=cursor` from the URL used during configuration of the agent:
	`java.sql.BatchUpdateException:`
	`com.microsoft.sqlserver.jdbc.SQLServerException:`
	
	This only applies if the agent runs with MSSQL, not DB2®.

When using the F1 key or selecting **Help** > **Contents and Index**, you receive a message in your Microsoft Internet Explorer browser which states, `It seems javascript is disabled in your browser, please enable it and reload again, or click here to view without javascript`. If you select **here**, the Tivoli Enterprise Portal V6.1 Help is displayed, but the agent help is not.	Ensure that the local site is added to the browser's trusted site and then enable the javascript.
The Summarization and Pruning Agent hangs or has a worker thread that hangs.	This can be caused (on DB2 at least) if there is another application (DB2 Control Center) holding a lock on the table. DB2 by default has **`LOCKTIMEOUT`** set to -1, meaning a long wait that causes the Summarization and Pruning Agent to appear to hang. Closing the offending application (or resolving the deadlock) solves the problem.
The Summarization and Pruning Agent is logging "Interface unknown" messages.	This happens when you have the Warehouse Proxy Agent and some other component on the same system and you shutdown the Warehouse Proxy Agent and start the other component, which may reuse the same port previously used by the Warehouse Proxy Agent. These messages are benign but end up filling the logs until the Warehouse Proxy Agent is restarted, and the synchronization of the Warehouse Proxy Agent location is sent to all Tivoli Enterprise Monitoring Servers.

Summarization and Pruning Agent returns a java exception.	The java exception is
	`ava.sql.BatchUpdateException: com.microsoft.sqlserver.jdbc.`
	`SQLServerException:sp_cursoropen/sp_cursorprepare:`
	`The statement parameter can only be a batch or a stored procedure with a single select,without FOR BROWSE, COMPUTE BY, or variable assignments.`
	
	To avoid this problem, remove the `SelectMethod=cursor` from the URL used in the Summarization and Pruning configuration. There is also a hotfix available from Microsoft Support website.

Table 6. Agent problems and solutions (continued)

Problem	Solution

Summarization and Pruning Agent runs out of memory.	Modify the jdbc connection string for this monitoring agent, if you receive the following message:
	`The system is out of memory.`
	`Use server side cursors for large result sets`
	
	Modify the connection string from this:
	`jdbc:sqlserver://hostname;databaseName=WAREHOUS`
	
	to this:
	`jdbc:sqlserver://SERVERNAME;databasename=WAREHOUS;SelectMethod=cursor;`
	
	There are two select methods - DIRECT and CURSOR. Depending on the database and how it was designed - CURSOR might be required. If you never need multiple-statement-execution transactions, or you never have more than one open statement at a time, you can use direct. Otherwise, you need cursor mode.

Table 6. Agent problems and solutions (continued)

Problem	Solution

Summarization and Pruning Agent in large environment.	The following index and tuning changes were made to reduce Summarization and Pruning run time in an environment with 10,000 agents. The database server was DB2 running on AIX®:
	• Async IO changes to AIX
	Change Minimum Servers and Maximum Servers from 1 and 10 to 40 and 80. A reboot is required.
	• Change the DB2MAXFSCRSEARCH value, using the following command:
	`db2set DB2MAXFSCRSEARCH=2`
	• Enable the DB2_USE_ALTERNATE_PAGE_CLEANING value, using the following command:
	`db2set DB2_USE_ALTERNATE_PAGE_CLEANING=ON`
	• Enable the DB2_PARALLEL_IO value (with the number of disks in the largest array):
	`db2set DB2_PARALLEL_IO=*:9`
	• Increase the DBHEAP value from 1800 to 3000 by updating the database configuration for the WAREHOUS database by using the following command:
	`update database config for WAREHOUS using dbheap 3000`
	• Increase the LOGBUFSZ value from 1024 to 2048 by updating the database config for the WAREHOUS database by using the following command:
	`update database config for WAREHOUS using logbufsz 2048`
	• Increase the prefetch size from AUTOMATIC (32) to 288 by altering the tablespace userspace1 by suing the following command:
	`alter tablespace USERSPACE1 prefetchsize 288`
	• Drop all HX2 and DX2 indexes from aggregate tables.
	• Drop all of the indexes on the WAREHOUSELOG table:
	`drop index "ITMUSER"."WHLOG_IDX1";`
	`drop index "ITMUSER"."WHLOG_IDX2";`
	`drop index "ITMUSER".WHLOG_IDX3;`
	• Create this index on the WAREHOUSELOG table. This index greatly improves SELECT statements made during pruning of the WAREHOUSELOG.:
	`CREATE INDEX "ITMUSER" ."WHLOG_IDX1" ON "ITMUSER" ."WAREHOUSELOG"`
	`("ORIGINNODE" ASC, "EXPORTTIME" ASC) ALLOW REVERSE SCANS;`
	• In the Summarization and Pruning Agent configuration file, increase the KSY_MAX_ROWS_PER_TRANSACTION value from 1000 to 3000 in the file, ksy.ini.
	• From the root user, change the Ulimit file parameter by using the following command:
	`ulimit -f unlimited`
	• Increased the NUM_IOCLEANERS value from 14 to 24.

If you want to receive multiple trace logs for separate invocations of the same Take Action command, leaving this setting on permanently fills the available disk space.	Do not leave this setting permanently. By doing so, you create a new log file for each invocation of the Take Action command and ALL of them remain on the agent system.

Table 6. Agent problems and solutions (continued)

Problem	Solution
Online Help Search cannot find any agent online help.	To search the online help for this agent the user must use the IBM Eclipse help search function and not the search function in the web based help online help. To use the search function for this agent's online help, ensure that you have selected the IBM Eclipse help server check box when installing the Tivoli Enterprise Portal Server. The 'Searching Agent Help' topic in this agent's online help contains a link to the Eclipse help, where the search function is enabled. From the Table of Contents in the left-hand pane of the help, select the 'Searching Agent Help' topic to find the link to the Eclipse help in the right-hand pane.
The table partition statistics workspace does not display any data.	Configure the Warehouse Summarization and Pruning agent to enable range partitioning and restart the agent. **Note:** Partitioning must be supported by the RDBMS and might require additional licensing.

Workspace troubleshooting

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

Table 7 contains problems and solutions related to workspaces.

Table 7. Workspace problems and solutions

Problem	Solution
You see the following message: `KFWIT083W Default link is disabled for the selected object; please verify link and link anchor definitions.`	You see this message because some links do not have default workspaces. Right-click the link to access a list of workspaces to select.
The name of the attribute does not display in a bar chart or graph view.	When a chart or graph view that includes the attribute is scaled to a small size, a blank space is displayed instead of a truncated name. To see the name of the attribute, expand the view of the chart until there is sufficient space to display all characters of the attribute's name.
At the bottom of each view, you see the following Historical workspace `KFWITM220E error: Request failed during execution.`	Ensure that you configure all groups that supply data to the view. In the Historical Configuration view, ensure that data collection is started for all groups that supply data to the view.
You start collection of historical data but the data cannot be seen.	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 on managing this feature including how to set the interval at which data is collected. By setting a more frequent interval for data collection you reduce the load on the system incurred every time data is uploaded. • You use the Summarization and Pruning monitoring agent to collect specific amounts and types of historical data. Be aware that historical data is not displayed until the Summarization and Pruning monitoring agent begins collecting the data. By default, this agent begins collection at 2 AM daily. At that point, data is visible in the workspace view. See the *IBM Tivoli Monitoring Administrator's Guide* to learn how to modify the default collection settings.

Table 7. Workspace problems and solutions (continued)

Problem	Solution
Historical data collection is unavailable because of incorrect queries in the Tivoli 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 makes a query ineligible for historical data collection. Even if data collection has been 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. See the *IBM Tivoli Monitoring Administrator's Guide* the Tivoli Enterprise Portal online help for information about the Historical Data Collection function.
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. 100 bytes is the maximum name length.
Regular (non-historical) monitoring data fails to be displayed.	Check the formation of the queries you use to gather capture data. For example, look for invalid SQL statements.

Support information

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

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

Online

The following websites contain troubleshooting information:

- Go to the IBM Software Support website (http://www.ibm.com/support/entry/portal/software) and follow the instructions.
- Go to the Application Performance Management Wiki (http://www.ibm.com/developerworks/servicemanagement/apm/index.html). 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. IBM Tivoli Enterprise Console event mapping

Each event class corresponds to an attribute group in the IBM Tivoli Enterprise Console.

A description of the event slots for each event class is provided. For more information about mapping attribute groups to event classes, see the *IBM Tivoli Monitoring Administrator's Guide*.

Generic event mapping provides useful event class and attribute information for situations that do not have specific event mapping defined. BAROC files are found on the Tivoli Enterprise Monitoring Server in the installation directory in TECLIB (that is, *install_dir*/cms/TECLIB for Windows systems and *install_dir*/tables/*TEMS_hostname*/TECLIB for UNIX systems). IBM Tivoli Enterprise Console event synchronization provides a collection of ready-to-use rule sets that you can deploy with minimal configuration. Be sure to install IBM Tivoli Enterprise Console event synchronization to access the correct Sentry.baroc, which is automatically included during base configuration of IBM Tivoli Enterprise Console rules if you indicate that you want to use an existing rule base. See the *IBM Tivoli Monitoring Installation and Setup Guide* for details.

Each of the event classes is a child of KSY_Base and is defined in the ksy.baroc (version 06.02.00) file. The KSY_Base event class can be used for generic rules processing for any event from the Warehouse Summarization and Pruning Agent.

For events generated by situations in the Connectivity attribute group, Tivoli Enterprise Console events are sent using the ITM_KSY_CONNECTIVITY class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- teps_host_name: STRING
- teps_port: INTEGER
- teps_port_enum: STRING
- database_type: INTEGER
- database_type_enum: STRING
- url: STRING
- driver: STRING
- driver_version: STRING
- database_version: STRING
- classpath: STRING
- teps_connectivity: INTEGER
- teps_connectivity_enum: STRING
- db_connectivity: INTEGER
- db_connectivity_enum: STRING

For events generated by situations in the Summarization Config attribute group, Tivoli Enterprise Console events are sent using the ITM_KSY_SUMMARIZATION CONFIG class. This class contains the following slots:

- node: STRING

- timestamp: STRING
- fixed_frequency: INTEGER
- fixed_scheduled_time: STRING
- fixed_scheduling: INTEGER
- fixed_scheduling_enum: STRING
- flexible_scheduling_minutes: INTEGER
- flexible_scheduling_exceptions: STRING
- num_threads: INTEGER
- week_beginning: INTEGER
- week_beginning_enum: STRING
- shifts_specified: INTEGER
- shifts_specified_enum: STRING
- vacation_enabled: INTEGER
- vacation_enabled_enum: STRING
- weekend_vacation: INTEGER
- weekend_vacation_enum: STRING
- vacation_days: STRING
- peak_shift_hours: STRING
- off_peak_shift_hours: STRING
- prune_warehouselog: INTEGER
- prune_warehouselog_enum: STRING
- warehouselog_time: INTEGER
- warehouselog_units: INTEGER
- warehouselog_units_enum: STRING
- prune_warehouseaggreglog: INTEGER
- warehouseaggreglog_time: INTEGER
- warehouseaggreglog_time_enum: STRING
- warehouseaggreglog_units: INTEGER
- warehouseaggreglog_units_enum: STRING
- max_rows_per_db_transaction: INTEGER
- timezone_source: INTEGER
- timezone_source_enum: STRING
- hourly_data_summarization: INTEGER
- daily_data_summarization: INTEGER
- next_work_time: STRING
- summarization_and_pruning_rows: INTEGER
- error_rows: INTEGER
- connectivity_cache_minutes: INTEGER
- batch_mode: INTEGER
- batch_mode_enum: STRING
- database_compression: INTEGER
- database_compression_enum: STRING
- table_partitioning: INTEGER
- table_partitioning_enum: STRING
- forward_partitions: INTEGER

- group_by_threshold: INTEGER
- default_table_container: STRING
- default_index_container: STRING

For events generated by situations in the Summarization Statistics attribute group, Tivoli Enterprise Console events are sent using the ITM_KSY_SUMMARIZATION STATISTICS class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- start_time: STRING
- end_time: STRING
- run_length: REAL
- thread_pool_size: INTEGER
- active_threads: INTEGER
- rows_pruned: INTEGER
- rows_summarized: INTEGER
- failures: INTEGER
- pruning_failures: INTEGER
- summarization_failures: INTEGER
- run_window: REAL
- window_used: INTEGER

For events generated by situations in the Table Statistics attribute group, Tivoli Enterprise Console events are sent using the ITM_KSY_TABLE STATISTICS class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- start_time: STRING
- end_time: STRING
- run_length: REAL
- product_code: STRING
- rows_updated: INTEGER
- rows_created: INTEGER
- managed_systems_processed: INTEGER
- table_name: STRING
- attribute_group_name: STRING
- rows_pruned: INTEGER
- rows_summarized: INTEGER
- failures: INTEGER
- failures_enum: STRING
- pruning_failures: INTEGER
- summarization_failures: INTEGER
- table_partitions_total: INTEGER
- table_partitions_added: INTEGER
- table_partitions_removed: INTEGER

Documentation library

This appendix contains information about the publications related to IBM Tivoli Monitoring and to the commonly shared components of Tivoli Management Services.

These publications are listed in the following categories:

- IBM Tivoli Monitoring library
- Related publications

For information about accessing and using the publications, select **Using the publications** in the **Contents** pane of the IBM Tivoli Monitoring and OMEGAMON® XE Information Center at http://pic.dhe.ibm.com/infocenter/tivihelp/v61r1/index.jsp.

To find a list of new and changed publications, click **What's new** on the Welcome page of the IBM Tivoli Monitoring and OMEGAMON XE Information Center. To find publications from the previous version of a product, click **Previous versions** under the name of the product in the **Contents** pane.

IBM Tivoli Monitoring library

The following publications provide information about IBM Tivoli Monitoring and about the commonly shared components of Tivoli Management Services:

- *Quick Start Guide*

  Introduces the components of IBM Tivoli Monitoring.
- *Installation and Setup Guide*, SC22-5445

  Provides instructions for installing and configuring IBM Tivoli Monitoring components on Windows, Linux, and UNIX systems.
- *Program Directory for IBM Tivoli Management Services on z/OS*, GI11-4105

  Gives instructions for the SMP/E installation of the Tivoli Management Services components on z/OS.
- *High Availability Guide for Distributed Systems*, SC22-5455

  Gives instructions for several methods of ensuring the availability of the IBM Tivoli Monitoring components.
- *IBM Tivoli zEnterprise Monitoring Agent Installation and Configuration Guide*, SC14-7358

  Provides instructions for installing and configuring Tivoli zEnterprise monitoring agent components on Windows, Linux, and UNIX systems. Also includes migration and backup information, Enterprise Common Collector troubleshooting, Hardware Management Console configuration, and use of the command line interface or APIs to customize the collector. This guide complements the *Tivoli zEnterprise Monitoring Agent User's Guide*.
- *Administrator's Guide*, SC22-5446

  Describes the support tasks and functions required for the Tivoli Enterprise Portal Server and clients, including Tivoli Enterprise Portal user administration.
- *Command Reference*, SC22-5448

  Provides detailed syntax and parameter information, as well as examples, for the commands you can use in IBM Tivoli Monitoring.

- *Messages*, SC22-5450

  Lists and explains messages generated by all IBM Tivoli Monitoring components and by z/OS-based Tivoli Management Services components (such as Tivoli Enterprise Monitoring Server on z/OS and TMS:Engine).
- *Troubleshooting Guide*, GC22-5449

  Provides information to help you troubleshoot problems with the software.
- Tivoli Enterprise Portal online help

  Provides context-sensitive reference information about all features and customization options of the Tivoli Enterprise Portal. Also gives instructions for using and administering the Tivoli Enterprise Portal.
- *Tivoli Enterprise Portal User's Guide*, SC22-5447

  Complements the Tivoli Enterprise Portal online help. The guide provides hands-on lessons and detailed instructions for all Tivoli Enterprise Portal features.
- *Agent Builder User's Guide*, SC32-1921

  Explains how to use the Agent Builder for creating monitoring agents and their installation packages, and for adding functions to existing agents.
- *Performance Analyzer User's Guide*, SC27-4004

  Explains how to use the Performance Analyzer to understand resource consumption trends, identify problems, resolve problems more quickly, and predict and avoid future problems.
- *IBM Tivoli zEnterprise Monitoring Agent User's Guide*, SC14-7359

  Complements the Tivoli zEnterprise monitoring agent online help. The guide provides reference information about the interface, usage scenarios, agent troubleshooting information, and information about Tivoli Common Reporting reports. This guide complements the *Tivoli zEnterprise Monitoring Agent Installation and Configuration Guide*.

Documentation for the base agents

If you purchased IBM Tivoli Monitoring as a product, you received a set of base monitoring agents as part of the product. If you purchased a monitoring agent product (for example, an OMEGAMON XE product) that includes the commonly shared components of Tivoli Management Services, you did not receive the base agents.

The following publications provide information about using the base agents.

- Operating system agents:
  - *Windows OS Agent User's Guide*, SC22-5451
  - *UNIX OS Agent User's Guide*, SC22-5452
  - *Linux OS Agent User's Guide*, SC22-5453
  - *IBM i Agent User's Guide*, SC22-5454
- Agentless operating system monitors:
  - *Agentless Monitoring for Windows Operating Systems User's Guide*, SC23-9765
  - *Agentless Monitoring for AIX Operating Systems User's Guide*, SC23-9761
  - *Agentless Monitoring for HP-UX Operating Systems User's Guide*, SC23-9763
  - *Agentless Monitoring for Solaris Operating Systems User's Guide*, SC23-9764
  - *Agentless Monitoring for Linux Operating Systems User's Guide*, SC23-9762
- Warehouse agents:
  - *Warehouse Summarization and Pruning Agent User's Guide*, SC22-5457

- *Warehouse Proxy Agent User's Guide*, SC22-5456
- System P agents:
  - *AIX Premium Agent User's Guide*, SA23-2237
  - *CEC Base Agent User's Guide*, SC23-5239
  - *HMC Base Agent User's Guide*, SA23-2239
  - *VIOS Premium Agent User's Guide*, SA23-2238
- Other base agents:
  - *Tivoli Log File Agent User's Guide*, SC14-7484
  - *Systems Director base Agent User's Guide*, SC27-2872

Related publications

For information about related products and publications select **OMEGAMON XE shared publications** or other entries in the **Contents** pane of the IBM Tivoli Monitoring and OMEGAMON XE Information Center at http://pic.dhe.ibm.com/infocenter/tivihelp/v61r1/index.jsp .

Other sources of documentation

You can also obtain technical documentation about IBM Tivoli Monitoring and related products from the following sources:

- Service Management Connect (SMC)

  For introductory information about SMC, see IBM Service Management Connect (http://www.ibm.com/developerworks/servicemanagement).

  For information about Tivoli products, see the Application Performance Management community on SMC at IBM Service Management Connect > Application Performance Management (http://www.ibm.com/developerworks/servicemanagement/apm).

  Connect, learn, and share with Service Management professionals. Get access to developers and product support technical experts who provide their perspectives and expertise. Using SMC, you can:
  - Become involved with transparent development, an ongoing, open engagement between external users and developers of Tivoli products where you can access early designs, sprint demos, product roadmaps, and pre-release code.
  - Connect one-on-one with the experts to collaborate and network about Tivoli and Integrated Service Management.
  - Benefit from the expertise and experience of others using blogs.
  - Collaborate with the broader user community using wikis and forums.
- Tivoli wikis

  IBM Service Management Connect > Application Performance Management (http://www.ibm.com/developerworks/servicemanagement/apm) includes a list of relevant Tivoli wikis that offer best practices and scenarios for using Tivoli products, white papers contributed by IBM employees, and content created by customers and business partners.

  Two of these wikis are of particular relevance to IBM Tivoli Monitoring:
  - The IBM Tivoli Monitoring Wiki (https://www.ibm.com/developerworks/mydeveloperworks/wikis/home?lang=en#/wiki/Tivoli%20Monitoring/page/Home) provides information about IBM Tivoli Monitoring and related distributed products, including IBM Tivoli Composite Application Management products.

  - The Tivoli System z® Monitoring and Application Management Wiki provides information about the OMEGAMON XE products, NetView® for z/OS®, Tivoli Monitoring Agent for z/TPF, and other System z monitoring and application management products.
- IBM Integrated Service Management Library

  http://www.ibm.com/software/brandcatalog/ismlibrary/

  IBM Integrated Service Management Library is an online catalog that contains integration documentation and other downloadable product extensions.
- Redbooks®

  http://www.redbooks.ibm.com/

  IBM Redbooks and Redpapers include information about products from platform and solution perspectives.
- Technotes

  Technotes provide the latest information about known product limitations and workarounds. You can find Technotes through the IBM Software Support Web site at http://www.ibm.com/software/support/.

Support information

If you have a problem with your IBM software, you want to resolve it quickly. IBM provides ways for you to obtain the support you need.

Online

The following sites contain troubleshooting information:

- Go to the IBM Support Portal (http://www.ibm.com/support/entry/portal/software) and follow the instructions.
- Go to IBM Service Management Connect > Application Performance Management (http://www.ibm.com/developerworks/servicemanagement/apm) and select the appropriate wiki.

IBM Support Assistant

The IBM Support Assistant (ISA) is a free local software serviceability workbench that helps you resolve questions and problems with IBM software products. The ISA provides quick access to support-related information and serviceability tools for problem determination. To install the ISA software, go to IBM Support Assistant (http://www-01.ibm.com/software/support/isa).

Troubleshooting Guide

For more information about resolving problems, see the product's Troubleshooting Guide.

Using IBM Support Assistant

The IBM Support Assistant is a free, stand-alone application that you can install on any workstation. You can then enhance the application by installing product-specific plug-in modules for the IBM products you use.

The IBM Support Assistant saves you the time it takes to search the product, support, and educational resources. The IBM Support Assistant helps you gather support information when you need to open a problem management record (PMR), which you can then use to track the problem.

The product-specific plug-in modules provide you with the following resources:

- Support links
- Education links
- Ability to submit problem management reports

For more information, and to download the IBM Support Assistant, see http://www.ibm.com/software/support/isa. After you download and install the IBM Support Assistant, follow these steps to install the plug-in for your Tivoli product:

1. Start the IBM Support Assistant application.
2. Select **Updater** on the Welcome page.
3. Select **New Properties and Tools** or select the **New Plug-ins** tab (depending on the version of IBM Support Assistant installed).
4. Under **Tivoli**, select your product, and then click **Install**. Be sure to read the license and description.

If your product is not included on the list under **Tivoli**, no plug-in is available yet for the product.

5. Read the license and description, and click **I agree**.
6. Restart the IBM Support Assistant.

Obtaining fixes

A product fix might be available to resolve your problem. To determine which fixes are available for your Tivoli software product, follow these steps:

1. Go to the IBM Software Support website at http://www.ibm.com/software/support.
2. Under **Select a brand and/or product**, select **Tivoli**.

   If you click **Go**, the **Search within all of Tivoli support** section is displayed. If you don't click **Go**, you see the **Select a product** section.
3. Select your product and click **Go**.
4. Under **Download**, click the name of a fix to read its description and, optionally, to download it.

   If there is no **Download** heading for your product, supply a search term, error code, or APAR number in the field provided under **Search Support (this product)**, and click **Search**.

For more information about the types of fixes that are available, see the *IBM Software Support Handbook* at http://www14.software.ibm.com/webapp/set2/sas/f/handbook/home.html.

Receiving weekly support updates

To receive weekly e-mail notifications about fixes and other software support news, follow these steps:

1. Go to the IBM Software Support website at http://www.ibm.com/software/support.
2. Click **My support** in the far upper-right corner of the page under **Personalized support**.
3. If you have already registered for **My support**, sign in and skip to the next step. If you have not registered, click **register now**. Complete the registration form using your e-mail address as your IBM ID and click **Submit**.
4. The **Edit profile** tab is displayed.
5. In the first list under **Products**, select **Software**. In the second list, select a product category (for example, **Systems and Asset Management**). In the third list, select a product sub-category (for example, **Application Performance & Availability** or **Systems Performance**). A list of applicable products is displayed.
6. Select the products for which you want to receive updates.
7. Click **Add products**.
8. After selecting all products that are of interest to you, click **Subscribe to email** on the **Edit profile** tab.
9. In the **Documents** list, select **Software**.
10. Select **Please send these documents by weekly email**.
11. Update your e-mail address as needed.
12. Select the types of documents you want to receive.
13. Click **Update**.

If you experience problems with the **My support** feature, you can obtain help in one of the following ways:

Online
Send an e-mail message to erchelp@ca.ibm.com, describing your problem.

By phone
Call 1-800-IBM-4You (1-800-426-4968).

Contacting IBM Software Support

IBM Software Support provides assistance with product defects. The easiest way to obtain that assistance is to open a PMR or ETR directly from the IBM Support Assistant.

Before contacting IBM Software Support, your company must have an active IBM software maintenance contract, and you must be authorized to submit problems to IBM. The type of software maintenance contract that you need depends on the type of product you have:

- For IBM distributed software products (including, but not limited to, Tivoli, Lotus®, and Rational® products, as well as DB2 and WebSphere® products that run on Windows or UNIX operating systems), enroll in Passport Advantage® in one of the following ways:

  Online
  Go to the Passport Advantage website at http://www-306.ibm.com/software/howtobuy/passportadvantage/pao_customers.htm .

  By telephone
  For the telephone number to call in your country, go to the IBM Software Support website at http://techsupport.services.ibm.com/guides/contacts.html and click the name of your geographic region.
- For customers with Subscription and Support (S & S) contracts, go to the Software Service Request website at https://techsupport.services.ibm.com/ssr/login.
- For customers with Linux, iSeries®, pSeries, zSeries®, and other support agreements, go to the IBM Support Line website at http://www.ibm.com/services/us/index.wss/so/its/a1000030/dt006.
- For IBM eServer™ software products (including, but not limited to, DB2 and WebSphere products that run in zSeries, pSeries, and iSeries environments), you can purchase a software maintenance agreement by working directly with an IBM sales representative or an IBM Business Partner. For more information about support for eServer software products, go to the IBM Technical Support Advantage website at http://www.ibm.com/servers/eserver/techsupport.html.

If you are not sure what type of software maintenance contract you need, call 1-800-IBMSERV (1-800-426-7378) in the United States. From other countries, go to the contacts page of the *IBM Software Support Handbook* on the web at http://www14.software.ibm.com/webapp/set2/sas/f/handbook/home.html and click the name of your geographic region for telephone numbers of people who provide support for your location.

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