IBM Tivoli Agentless Monitoring for Windows Operating Systems Version 6.2.1 (Revised)

User's Guide





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Note

Before using this information and the product it supports, read the information in "Notices" on page 207.

This edition applies to version 6.2.1 of IBM Tivoli Agentless Monitoring for Windows Operating Systems (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 IBM Tivoli Agentless Monitoring for Windows Operating Systems provides you with the capability to monitor Windows Operating Systems.

IBM[®] Tivoli[®] Monitoring is the base software for the Agentless Monitor for Windows. The Agentless Monitor for Windows can identify and notify you of common problems with the application that it monitors.

IBM Tivoli Monitoring

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 "Prerequisite publications" on page 203 for complete information about IBM Tivoli Monitoring and the Tivoli Enterprise Portal.

Functions of the monitoring agent

The Agentless Monitor for Windows provides the following functions:

Agentless Monitoring for Windows Operating Systems using SNMP

Agentless Monitoring for Windows Operating Systems using Windows APIs

New in this release

For this revised version 6.2.1 of the Agentless Monitor for Windows documentation, the following changes have been made to the documentation since the original version 6.2.1.

• Support for the self-describing agent capability has been noted. For more information, see "Requirements for the monitoring agent" on page 5

Components of the IBM Tivoli Monitoring environment

After you install and set up the Agentless Monitor for Windows, you have an environment that contains the client, server, and monitoring agent implementation for Tivoli Monitoring.

This Tivoli Monitoring environment contains the following components:

Tivoli Enterprise Portal client

The portal has a user interface based on Java^m 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.

Tivoli Enterprise Monitoring Agent, Agentless Monitor for Windows

This monitoring agent collects data and distributes the data to the Tivoli Enterprise Monitoring Server, Tivoli Enterprise Portal Server, Tivoli Enterprise Portal, Tivoli Data Warehouse, and Tivoli Integrated Portal.

This agent can run on a separate system from the system where the Windows Operating Systems is running.

Multiple copies of this agent can run on the same system.

IBM Tivoli Netcool/OMNIbus

Tivoli Netcool/OMNIbus is an optional component and the recommended event management component. The Netcool/OMNIbus software is a service level management (SLM) system that delivers real-time, centralized monitoring of complex networks and IT domain events. Event information is tracked in a high-performance, in-memory database and presented to specific users through individually configurable filters and views. The software includes automation functions that you can use to perform intelligent processing on managed events. You can use this software to forward events for Tivoli Monitoring situations to Tivoli Netcool/OMNIbus.

IBM Tivoli Enterprise Console®

The Tivoli Enterprise Console is an optional component that acts as a central collection point for events from various 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 Tivoli Monitoring situations to the Tivoli Enterprise Console component. If you do not already use Tivoli Enterprise Console and need an event management component, you can choose to use IBM Tivoli Netcool/OMNIbus.

IBM Tivoli Business Service Manager

The Tivoli Business Service Manager component delivers real-time information to help you respond to alerts effectively based on business requirements. Optionally, you can use this component to meet service-level agreements (SLAs). Use the Tivoli Business Service Manager tools to help build a service model that you can integrate with Tivoli Netcool/OMNIbus alerts or optionally integrate with data from an SQL data source. Optional components provide access to data from other IBM Tivoli applications such as Tivoli Monitoring and TADDM.

Agent Management Services

You can use IBM Tivoli Monitoring Agent Management Services to manage the Agentless Monitor for Windows.

Agent Management Services is available for the following IBM Tivoli Monitoring OS agents: Windows, Linux, and UNIX. The services are designed to keep the Agentless Monitor for Windows available, and to provide information about the status of the product to the Tivoli Enterprise Portal. IBM Tivoli Monitoring V6.2.2, Fix Pack 2 or later provides support for Agent Management Services. For more information about Agent Management Services in the *IBM Tivoli Monitoring Administrator's Guide*.

User interface options

Installation of the base IBM Tivoli Monitoring software and other integrated applications provides various 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.

Command-line interface

You can use Tivoli Monitoring commands to manage the Tivoli Monitoring components and their configuration. You can also run commands at the Tivoli Enterprise Console event server or the Tivoli Netcool/OMNIbus ObjectServer to configure event synchronization for enterprise situations.

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 Netcool/OMNIbus event list

You can use the Netcool/OMNIbus event list to monitor and manage events. An event is created when the Netcool/OMNIbus ObjectServer receives an event, alert, message, or data item. Each event is made up of columns (or fields) of information that are displayed in a row in the ObjectServer alerts.status table. The Tivoli Netcool/OMNIbus web GUI is also a web-based application that processes network events from one or more data sources and presents the event data in various graphical formats.

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. If you do not already use Tivoli Enterprise Console and need an event management component, you can choose to use Tivoli Netcool/OMNIbus.

IBM Tivoli Common Reporting

Use the Tivoli Common Reporting web user interface for specifying report parameters and other report properties, generating formatted reports, scheduling reports, and viewing reports. This user interface is based on the Tivoli Integrated Portal.

IBM Tivoli Application Dependency Discovery Manager

The Discovery Management Console is the TADDM client user interface for managing discoveries.

IBM Tivoli Business Service Manager

The Tivoli Business Service Manager console provides a graphical user interface that you can use to logically link services and business requirements within the service model. The service model provides an operator with a second-by-second view of how an enterprise is performing at any moment in time or how the enterprise performed over a time period.

Chapter 2. Requirements and 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 IBM Tivoli Agentless Monitoring for Windows Operating Systems, use the procedures for installing monitoring agents in the *IBM Tivoli Monitoring Installation and Setup Guide* along with the agent-specific installation and configuration information.

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*.

With the self-describing agent capability, new or updated IBM Tivoli Monitoring agents using IBM Tivoli Monitoring V6.2.3 or later can become operational after installation without having to perform additional product support installation steps. To take advantage of this capability, see "Enabling self-describing agent capability at the hub monitoring server" in the *IBM Tivoli Monitoring Installation and Setup Guide*. Also, see "Self-describing monitoring agents" in the *IBM Tivoli Monitoring Administrator's Guide*.

Requirements for the monitoring agent

In addition to the requirements described in the *IBM Tivoli Monitoring Installation and Setup Guide*, agents typically have agent-specific requirements.

See the Software product compatibility reports website to generate a variety of reports related to product and component requirements.

Agentless Monitor for Windows has the following agent-specific requirements:

- Use the following link for information about the requirements for Agentless Monitoring: Summary for OS Agents & TEMA (Tivoli Enterprise Management Agent)
 - If you are running this monitoring agent on a Red Hat Enterprise Linux 5 operating system, SELinux must not be enabled.
 - If running this monitoring agent on a Windows operating system, the User ID must have Administrator privileges.
- This agent monitors the following versions:
 - Windows Operating Systems XP, 2003 Server SE (32/64 bit), 2003 Server EE (32/64 bit), Server 2003
 Data Center (32/64 bit), Vista (32/64 bit), 2008 Server SE (32/64 bit), 2008 Server EE (32/64 bit),
 Server 2008 Data Center (32/64 bit)
- A single computer that hosts the hub monitoring server, portal server, and a monitoring agent requires approximately 300 MB of space. A computer that hosts only the monitoring agent requires approximately 30 MB of space, including the specific enablement code for the monitoring agent. More space is required for each additional monitoring agent that you deploy on the monitoring computer.
- Linux versions require some compatibility libraries to be installed for the agent to work correctly. The latest versions of the libstdc++, libgcc, and compat-libstdc++ libraries are required for the agent to run correctly. Linux RedHat 4 and 5, and SuSE 9 and 10 also require the C++ Runtime 6.0 library (libstdc++.so.6).
- The monitoring agent must be connected to the following software:
 - IBM Tivoli Monitoring V6.2.1 or later

The following software is required for the Agentless Monitor for Windows to operate:

- Agentless Monitor for Windows
- · Agentless Monitor for Windows for Tivoli Enterprise Monitoring Server support
- · Agentless Monitor for Windows for Tivoli Enterprise Portal Server support
- · Agentless Monitor for Windows for Tivoli Enterprise Portal Desktop Client support
- · Agentless Monitor for Windows for Tivoli Enterprise Portal Browser Client support

To collect metrics through the Windows APIs, the Agentless Monitor for Windows must be hosted on a Windows operating system, and remote registry administration must be enabled on the remote systems.

The **itmcmd** command-line interface does now allow you to override a default configuration parameter when configuring your monitoring agent.

Agent-specific installation and configuration

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 Agentless Monitor for Windows.

The Agentless Monitor for Windows has two different options that can be configured to remotely collect metrics from the operating system:

- Windows APIs
- Windows SNMP service

The Windows APIs use Windows credentials to remotely collect metrics from the WMI namespace for the remote system, perfmon, and Windows Event Log data sources.

The Simple Network Management Protocol (SNMP) can also be used to remotely collect metrics. SNMP Version 1, SNMP Version 2c, or SNMP Version 3 can be used, depending on the configuration of the Windows operating system.

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:

Connection Type (KR2_DP_SELECT)

Agentless Windows OS Connection Properties

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.

Connection Type (DATA_PROVIDER)

The type of connection this agent uses to communicate with the remote server.

The type is one of the following values: "Windows API Connection", "SNMP connection".

This value is required.

Default value: WMI

Windows API Connection (KQZ_WIN)

Windows remote host connection properties

The configuration elements defined in this group appear only if the corresponding value is selected in a previous group.

This group defines information that applies to the entire agent.

Remote Windows password (WIN_PASSWORD)

Password for remote Windows.

The type is password.

This value is required.

Default value: None

SNMP connection (KQZ_SNMP)

Windows SNMP server properties

The configuration elements defined in this group appear only if the corresponding value is selected in a previous group.

This group defines information that applies to the entire agent.

Port Number (SNMP_PORT)

The port number of the SNMP server.

The type is numeric.

This value is required.

Default value: 161

SNMP Version (SNMP_VERSION)

The SNMP version to use to make the connection.

The type is one of the following values: "SNMP Version 1", "SNMP Version 2c", "SNMP Version 3".

This value is required.

Default value: snmpV1

SNMP Version 1 (KQZ_SNMPV1)

SNMP version 1 parameters

The configuration elements defined in this group appear only if the corresponding value is selected in a previous group.

This group defines information that applies to the entire agent.

Community Name (SNMP_COMMUNITY)

The SNMP server community name.

The type is password.

This value is required.

Default value: None

SNMP Version 2c (KQZ_SNMPV2)

SNMP version 2c parameters

The configuration elements defined in this group appear only if the corresponding value is selected in a previous group.

This group defines information that applies to the entire agent.

Community Name (SNMP_COMMUNITY)

The SNMP server community name.

The type is password.

This value is required.

Default value: None

SNMP Version 3 (KQZ_SNMPV3)

SNMP version 3 parameters

The configuration elements defined in this group appear only if the corresponding value is selected in a previous group.

This group defines information that applies to the entire agent.

Auth Password (SNMP_AUTH_PASSWORD)

The authentication pass phrase for connecting to the SNMP server.

The type is password.

This value is optional.

Default value: None

Auth Protocol (SNMP_AUTH_PROTOCOL)

The authentication protocol used to connect to the SNMP server. Required for AuthNoPriv and AuthPriv security levels.

The type is one of the following values: "MD5", "SHA".

This value is optional.

Default value: None

Priv Password (SNMP_PRIV_PASSWORD)

The privacy pass phrase for connecting to the SNMP server.

The type is password.

This value is optional.

Default value: None

Priv Protocol (SNMP_PRIV_PROTOCOL)

The privacy protocol used to connect to the SNMP server. Required for the AuthPriv security level.

The type is one of the following values: "DES", "CBC DES".

This value is optional.

Default value: None

Security Level (SNMP_SECURITY_LEVEL)

The security level used to connect to the SNMP server. NoAuthNoPriv is equivalent to SNMPv1, but using User-based Security Model versus the Community based security model. AuthNoPriv uses authentication. AuthPriv uses authentication and privacy.

The type is one of the following values: "noAuthNoPriv", "authNoPriv", "authPriv".

This value is required.

Default value: None

User Name (SNMP_USER_NAME)

The USM user name for connecting to the SNMP server. Required to use SNMPv3.

The type is string.

This value is required.

Default value: None

SNMP System Details (WIN)

Managed System Details

The configuration elements defined in this group appear only if the corresponding value is selected in a previous group.

Use the information in this group to create additional subnodes.

Advanced (Advanced)

Allows the user to override values specified in previous sections.

The type is restricted - displays the configuation values that can be overridden.

This value is only used if it is necessary to override higher level values.

Default value: None

Managed System Name (Managed System Name)

The name that appears in the Tivoli Enterprise Portal Navigator tree for this host. The name must be unique across all instances of this agent.

The type is string.

This value is required.

Default value: None

SNMP host (SNMP_HOST)

The host or IP address of the SNMP server.

The type is string.

This value is required.

Default value: None

Windows API System Details (WMI)

Managed System Details

The configuration elements defined in this group appear only if the corresponding value is selected in a previous group.

Use the information in this group to create additional subnodes.

Advanced (Advanced)

Allows the user to override values specified in previous sections.

The type is restricted - displays the configuation values that can be overridden.

This value is only used if it is necessary to override higher level values.

Default value: None

Managed System Name (Managed System Name)

The name that appears in the Tivoli Enterprise Portal Navigator tree for this host. The name must be unique across all instances of this agent.

The type is string.

This value is required.

Default value: None

Remote Windows host (WIN_HOST)

Host name of remote Windows computer.

The type is string.

This value is required.

Default value: None

Remote Windows DOMAIN\user name (WIN_USER)

User name for the remote Windows host.

The type is string.

This value is required.

Default value: None

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 6.

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.

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 deployment of agentless Windows (R2) agent (SNMP) to a Windows operating system node. In this example, remotesystem2 uses a different community than the default:

```
tacmd addsystem -n Primary:node:NT -t r2
 -p INSTANCE=snmp1
     KR2_DP_SELECT.DATA_PROVIDER=SNMP
     KQZ_SNMP.SNMP_PORT=161
     KQZ_SNMP.SNMP_VERSION=snmpV1
     KQZ_SNMPV1.SNMP_COMMUNITY=public
     WIN:remotesystem1.SNMP_HOST=remotesystem1.ibm.com
     WIN:remotesystem2.SNMP_HOST=remotesystem2.ibm.com
     WIN:remotesystem2.SNMP_COMMUNITY=community
```

The following command is an example of remote deployment of agentless Windows (R2) agent (WMI) to a Windows operating system node. In this example, remotesystem2 uses a different password than the default:

```
tacmd addsystem -n Primary:node:NT -t r2
 -p INSTANCE=wmi1
     KR2_DP_SELECT.DATA_PROVIDER=WMI
     KQZ_WIN.WIN_PASSWORD=password
     WMI:remotesystem1.WIN_HOST=remotesystem1.ibm.com
     WMI:remotesystem1.WIN_USER=REMOTESYSTEM1\Administrator
     WMI:remotesystem2.WIN_HOST=remotesystem2.ibm.com
     WMI:remotesystem2.WIN_USER=REMOTESYSEM2\Administrator
     WMI:remotesystem2.WIN_DASWORD=secret
```

Chapter 3. Workspaces reference

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

About workspaces

Use the Navigator tree to select the workspace you want to see. As part of the application window, 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 *Tivoli Enterprise Portal User's Guide* to open workspaces.

The workspaces in the Navigator are displayed 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.

The IBM Tivoli Agentless Monitoring for Windows Operating Systems provides various default workspaces. These workspaces are displayed in the Navigator tree under the following nodes and subnodes for this monitoring agent:

Agentless Windows OS (R2 node)

Corresponds to a Agentless Windows OS instance and contains agent instance-level workspaces.

WMI Windows Systems (WMI subnode)

Each node is an individual server.

SNMP Windows Systems (WIN subnode)

Each node is an individual server.

When multiple instances of the monitoring agent are defined on a system, the top-level node becomes Agentless Windows OS. The Agentless Windows OS workspace is undefined at this node. A node for each instance is created called *Instance:Hostname*:R2. A workspace that is called *Instance:Hostname*:R2 is associated with the instance node. This workspace is comparable to the Agentless Windows OS workspace.

Workspace views can be any combination of query-based views, event views, and special purpose views.

Additional information about workspaces

For more information about creating, customizing, and working with workspaces, see "Using workspaces" in the *Tivoli Enterprise Portal 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 monitoring agent" on page 19.

If you are using remote management to navigate to your systems in the Tivoli Enterprise Portal, navigate from the host name of the computer where you installed the agent.

Predefined workspaces

The Agentless Monitor for Windows provides predefined workspaces, which are organized by Navigator item.

Agent-level navigator items

- Agentless Windows OS Navigator item
- Agentless Windows OS workspace
- Managed Systems Navigator item
 - Managed Systems workspace

WMI Windows Systems (WMI) subnode

- WMI Windows Systems Navigator item
 - WMI Windows Systems workspace
 - Data Collection Status workspace
- Disk Navigator item
 - Disk workspace
- Memory Navigator item
 - Memory workspace
- Network Interfaces Navigator item
 - Network Interfaces workspace
- Process Navigator item
 - Process workspace
- Processor Navigator item
 - Processor workspace
- System Navigator item
 - System workspace
 - Terminal Services workspace
 - User Accounts workspace
 - Windows Services workspace
- WMI Event Log Navigator item
 - WMI Event Log workspace

SNMP Windows Systems (WIN) subnode

- SNMP Windows Systems Navigator item
 - SNMP Windows Systems workspace
 - Data Collection Status workspace
- Disk Navigator item
 - Disk workspace
- Memory Navigator item
 - Memory workspace

- Network Navigator item
 - Network workspace
- Processes Navigator item
 - Processes workspace
- Processor Navigator item
 - Processor workspace
- System Navigator item
 - System 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. When the agent has subnodes, the Navigator items are listed under the subnode.

Agentless Windows OS Navigator item

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

This workspace lists the collection status of the managed systems, and lists the systems that are being monitored.

This workspace contains the following views:

Monitored Windows Operating Systems through SNMP

This view lists the Windows systems that are currently being monitored through the SNMP subnode. The individual systems can be found under the SNMP Windows Systems Navigator item.

Monitored Windows Operating Systems through Windows APIs

This view lists the Windows systems that are currently being monitored through the WMI subnode. The individual systems can be found under the WMI Windows Systems Navigator item.

Managed Systems Navigator item

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

This workspace lists the systems that are being monitored.

This workspace contains the following views:

Monitored Windows Operating Systems through SNMP

This view lists the Windows systems that are currently being monitored through the SNMP subnode. The individual systems can be found under the SNMP Windows Systems Navigator item.

Monitored Windows Operating Systems through Windows APIs

This view lists the Windows systems that are currently being monitored through the WMI subnode. The individual systems can be found under the WMI Windows Systems Navigator item.

WMI Windows Systems subnode

This section contains descriptions of predefined workspaces. The workspaces are organized by the Navigator item to which the workspaces are relevant.

WMI Windows Systems Navigator item

WMI Windows Systems workspace

This workspace contains on overview of the core system attribute utilizations.

This workspace contains the following views:

Terminal Services Session Counts

This view lists the number of terminal services sessions in use on the target system.

Disk Utilization

This view lists the percentage of disk space in use on the target system.

Virtual Memory

This view lists the percentage of virtual memory in use on the target system.

Data Collection Status workspace

This workspace provides an overview of data collection of the target systems.

This workspace contains the following view:

Data Collection Status

This view contains information that reflects the status of data collection for all attribute groups that make up this application all at once. Each attribute group is represented by a row in this table. The status for an attribute group reflects the result of the last attempt to collect data for that attribute group, which allows you to see whether the agent is performing correctly.

Disk Navigator item

Disk workspace

This workspace contains metrics about hard drives and file systems.

This workspace contains the following views:

Physical Disk Byte Traffic

This view lists the I/O activity on each physical disk.

Logical Disk Utilization

This view lists the percentage of logical disk space available.

Logical Disk Time Distribution

This view lists the I/O activity on each logical disk.

Memory Navigator item

Memory workspace

This workspace contains metrics about physical and virtual memory.

This workspace contains the following views:

Physical Memory Details

This view contains information about the physical memory banks on the target system.

Page File Usage Details

This view lists the page files for the system.

Virtual Memory

This view lists the virtual memory statistics for the system.

Page File Utilization

This view lists the percentage of page files that are currently in use for the system.

Network Interfaces Navigator item

Network Interfaces workspace

This workspace contains metrics about the network interface cards contained in the system.

This workspace contains the following views:

Packet Errors

This view lists errors identified during the send or receive of packets.

Packet Rates

This view lists the I/O rates of packets for each network interface card.

Byte Rates

This view lists the I/O rates of bytes for each network interface card.

Process Navigator item

Process workspace

This workspace contains metrics for the processes currently running on the target system.

This workspace contains the following views:

Process Details

This view lists processes currently active on the target system.

Active Process Times

This view lists the percentage of time active processes are consuming from the CPU of the target system.

Processor Navigator item

Processor workspace

This workspace contains information about the processor capacity of the system.

This workspace contains the following views:

Processor Details

This view lists the processors in the system and their current state.

Processor Usage

This view breaks down the processor utilization by percentage.

Processor Interrupts per Second

This view lists the rate of interrupts experienced on each processor.

System Navigator item

System workspace

This workspace contains metrics for the status of the system and users logged in to the system.

This workspace contains the following views:

System Overview

This view lists overall performance statistics for the system.

Computer System

This view lists configuration information for the computer.

Operating System

This view lists information about the running operating system.

Memory

This view lists the virtual memory statistics in KB for the system.

Virtual Memory Utilization

This view lists the percentage of virtual memory that is currently in use for the system.

Terminal Services workspace

This workspace lists details for Terminal Services running on the system.

This workspace contains the following views:

Terminal Services Session Counts

This view lists active and inactive Terminal Service sessions.

Percent of Active and Inactive Terminal Sessions

This view identifies the percentage of Terminal Service sessions that are active and inactive.

Processor Usage per Session

This view breaks down the processor utilization by percentage for each Terminal Services session.

Memory Usage per Session

This view lists the memory statistics in KB for each Terminal Services session.

User Accounts workspace

This workspace lists details for all users defined on the system.

This workspace contains the following views:

Account Status

This view lists the status of each individual user account.

Account Password Status

This view lists the status of passwords for each individual user account.

Windows Services workspace

This workspace lists details for Windows Services running on the system.

This workspace contains the following views:

Service Status

This view lists the current status for active and inactive services.

Service Configuration

This view lists configuration information for active and inactive services.

WMI Event Log Navigator item

WMI Event Log workspace

The Event Log workspace shows the details for the recent events logged by the application to the Windows Event Log. By default, the agent only displays events that occur after the agent is started. Events are removed from the Event Log view 1 hour after they occur.

This workspace contains the following view:

Event Log

Shows the recent Event Log entries for Windows Operating Systems.

SNMP Windows Systems subnode

This section contains descriptions of predefined workspaces. The workspaces are organized by the Navigator item to which the workspaces are relevant.

SNMP Windows Systems Navigator item

SNMP Windows Systems workspace

This workspace contains on overview of the core system attribute utilizations.

This workspace contains the following views:

Physical Memory

This view lists the percentage of physical memory in use on the target system. **Disk Utilization**

This view lists the percentage of disk space in use on the target system.

Virtual Memory

This view lists the percentage of virtual memory in use on the target system.

Data Collection Status workspace

This workspace provides an overview of data collection of the target systems.

This workspace contains the following view:

Data Collection Status

This view contains information that reflects the status of data collection for all attribute groups that make up this application all at once. Each attribute group is represented by a row in this table. The status for an attribute group reflects the result of the last attempt to collect data for that attribute group, which allows you to see whether the agent is performing correctly.

Disk Navigator item

Disk workspace

This workspace contains metrics about hard drives and file systems.

This workspace contains the following views:

Disk Utilization

This view lists the percentage of disk space in use on the target system.

Disk Utilization MBs

This view lists the disk space in use on the target system.

Memory Navigator item

Memory workspace

This workspace contains metrics about physical and virtual memory.

This workspace contains the following views:

Physical Memory Utilization

This view lists the percentage of physical memory in use on the target system.

Virtual Memory Utilization

This view lists the percentage of virtual memory in use on the target system.

Memory Utilization MBs

This view lists the memory in use on the target system.

Network Navigator item

Network workspace

This workspace contains metrics about the network interface cards contained in the system.

This workspace contains the following views:

Administrative and Operational Status

This view lists the status of the network cards.

Byte Rates

This view lists the I/O rates of bytes for each network interface card.

Processes Navigator item

Processes workspace

This workspace contains metrics for the processes currently running on the target system.

This workspace contains the following views:

Process Details

This view lists processes currently active on the target system.

Process CPU Time

This view lists the amount of time that processes are consuming from the CPU of the target system.

Process Memory Utilization

This view lists the amount of memory that processes are consuming on the target system.

Processor Navigator item

Processor workspace

This workspace contains information about the processor capacity of the system.

This workspace contains the following views:

Overall CPU Utilization

This view lists the Maximum, Minimum, and Average utilization of all processors in the system.

Utilization per CPU

This view breaks down the processor utilization by individual processor.

System Navigator item

System workspace

This workspace contains metrics on the status of the system and users logged in to the system.

This workspace contains the following views:

System Summary

This view lists overall status information for the system.

User Logins

This view lists the number of users logged into the system.

Running Processes

This view lists the number of active processes running on the system.

Chapter 4. Attributes reference

Attributes are the application properties that are being measured and reported by the IBM Tivoli Agentless Monitoring for Windows Operating Systems.

About attributes

Attributes are organized into attribute groups. Attributes in an attribute group relate to a single object such as an application, or to a single kind of data such as status information.

Attributes in a group can be used in queries, query-based views, situations, policy workflows, take action definitions, and launch application definitions. Chart or table views and situations are two examples of how attributes in a group can be used:

• 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 Properties editor to 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 values you assign to the situation attributes are compared with the values collected by the Agentless Monitor for Windows 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 *Tivoli Enterprise Portal 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 monitoring agent" and "Attributes in each attribute group" on page 22.

Attribute groups for the monitoring agent

The Agentless Monitor for Windows 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, any warehouse table name longer than 30 characters is shortened to 30 characters.

- Attribute group name: Computer System
 - Table name: KR2WIN32CO
 - Warehouse table name: KR2_COMPUTER_SYSTEM or KR2WIN32CO
- Attribute group name: Disk
 - Table name: KR2DISK
 - Warehouse table name: KR2_DISK
- Attribute group name: hrDeviceTable
- Attribute group name: hrProcessor
 - Table name: KR2PROCSR
 - Warehouse table name: KR2_HRPROCESSOR or KR2PROCSR

- Attribute group name: hrProcessorTable
- Attribute group name: hrStorageTable
 - Table name: KR2STORTBL
 - Warehouse table name: KR2_HRSTORAGETABLE or KR2STORTBL
- Attribute group name: hrSystem
 - Table name: KR2HRSYSTE
 - Warehouse table name: KR2_HRSYSTEM or KR2HRSYSTE
- Attribute group name: Logical Disk
 - Table name: KR2WIN32PE
 - Warehouse table name: KR2_LOGICAL_DISK or KR2WIN32PE
- Attribute group name: Managed Systems SNMP
 - Table name: KR2MEPS
 - Warehouse table name: KR2_MANAGED_SYSTEMS_SNMP or KR2MEPS
- Attribute group name: Managed Systems WMI
 - Table name: KR2WDS
 - Warehouse table name: KR2_MANAGED_SYSTEMS_WMI or KR2WDS
- Attribute group name: Memory
 - Table name: KR2HRMEM
 - Warehouse table name: KR2_MEMORY or KR2HRMEM
- Attribute group name: Network
 - Table name: KR2NICNAV
 - Warehouse table name: KR2_NETWORK or KR2NICNAV
- Attribute group name: Network Interfaces
 - Table name: KR2WMINNIC
 - Warehouse table name: KR2_NETWORK_INTERFACES or KR2WMINNIC
- Attribute group name: Operating System
 - Table name: KR2WIN32OP
 - Warehouse table name: KR2_OPERATING_SYSTEM or KR2WIN32OP
- Attribute group name: Page File Usage Details
 - Table name: KR2WIN32PA
 - Warehouse table name: KR2_PAGE_FILE_USAGE_DETAILS or KR2WIN32PA
- Attribute group name: Paging File Summary
 - Table name: KR2PAGINGF
 - Warehouse table name: KR2_PAGING_FILE_SUMMARY or KR2PAGINGF
- Attribute group name: Performance Object Status
 - Table name: KR2POBJST
 - Warehouse table name: KR2_PERFORMANCE_OBJECT_STATUS or KR2POBJST
- Attribute group name: Physical Disk
 - Table name: KR2WIN32P0
 - Warehouse table name: KR2_PHYSICAL_DISK or KR2WIN32P0
- Attribute group name: Physical Memory
 - Table name: KR2WIN32PH
 - Warehouse table name: KR2_PHYSICAL_MEMORY or KR2WIN32PH
- Attribute group name: Process
 - Table name: KR2WMINPLS

- Warehouse table name: KR2_PROCESS or KR2WMINPLS
- Attribute group name: Processes
 - Table name: KR2PROCLST
 - Warehouse table name: KR2_PROCESSES or KR2PROCLST
- Attribute group name: Processor
 - Table name: KR2PROCESS
 - Warehouse table name: KR2_PROCESSOR or KR2PROCESS
- Attribute group name: Processor Details
 - Table name: KR2WIN32PR
 - Warehouse table name: KR2_PROCESSOR_DETAILS or KR2WIN32PR
- Attribute group name: Processor Utilization Total
 - Table name: KR2PROCSRT
 - Warehouse table name: KR2_PROCESSOR_UTILIZATION_TOTAL or KR2PROCSRT
- Attribute group name: System
 - Table name: KR2SYSTEM
 - Warehouse table name: KR2_SYSTEM
- Attribute group name: Terminal Services
 - Table name: KR2TERMINA
 - Warehouse table name: KR2_TERMINAL_SERVICES or KR2TERMINA
- Attribute group name: Terminal Services Session
 - Table name: KR2TERMIN0
 - Warehouse table name: KR2_TERMINAL_SERVICES_SESSION or KR2TERMIN0
- Attribute group name: Terminal Services Session Memory
 - Table name: KR2TERMIN1
 - Warehouse table name: KR2_TERMINAL_SERVICES_SESSION_MEMORY or KR2TERMIN1
- Attribute group name: Thread Pool Status
 - Table name: KR2THPLST
 - Warehouse table name: KR2_THREAD_POOL_STATUS or KR2THPLST
- Attribute group name: User Accounts
 - Table name: KR2WIN32US
 - Warehouse table name: KR2_USER_ACCOUNTS or KR2WIN32US
- Attribute group name: Virtual Memory
 - Table name: KR2MEMORY
 - Warehouse table name: KR2_VIRTUAL_MEMORY or KR2MEMORY
- Attribute group name: WIN Performance Object Status
 - Table name: KR2WINPOS
 - Warehouse table name: KR2_WIN_PERFORMANCE_OBJECT_STATUS or KR2WINPOS
- Attribute group name: Windows Services
 - Table name: KR2WIN32S0
 - Warehouse table name: KR2_WINDOWS_SERVICES or KR2WIN32S0
- Attribute group name: WMI Event Log
 - Table name: KR2ELOGWMI
 - Warehouse table name: KR2_WMI_EVENT_LOG or KR2ELOGWMI
- Attribute group name: WMI Performance Object Status
 - Table name: KR2WMIPOS

- Warehouse table name: KR2_WMI_PERFORMANCE_OBJECT_STATUS or KR2WMIPOS

Attributes in each attribute group

Attributes in each Agentless Monitor for Windows 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, warehouse name (if applicable), and other information 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.

Computer System attribute group

Information about this computer system

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 Computer System attribute group:

Node attribute: This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Source

The source for this attribute is the agent.

Warehouse name

NODE

Timestamp attribute

Description

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

Туре

String

Source

The source for this attribute is the agent.

Warehouse name TIMESTAMP

Description attribute

Description

Description of this computer.

Type

String

Source

The source for this attribute is WMI - ROOT\CIMV2\ Win32_ComputerSystemDescription.

Warehouse name

DESCRIPTION or DESCRIPTIO

Domain attribute

Description

Domain citizenship for this computer.

Type

String

Source

The source for this attribute is WMI - ROOT\CIMV2\ Win32_ComputerSystemDomain.

Warehouse name

DOMAIN

Manufacturer attribute

Description

Computer Manufacturer.

Туре

String

Source

The source for this attribute is WMI - ROOT\CIMV2\ Win32_ComputerSystemManufacturer.

Warehouse name

MANUFACTURER or MANUFACTUR

Model attribute

Description

Computer model.

Туре

String

Source

The source for this attribute is WMI - ROOT\CIMV2\Win32_ComputerSystemModel.

Warehouse name

MODEL

Name attribute: This attribute is a key attribute.

Description

Computer name.

Type

String

Source

The source for this attribute is WMI - ROOT\CIMV2\ Win32_ComputerSystemName.

Warehouse name

NAME

Number Of Processors attribute

Description

The number of the processors on the computer.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - ROOT\CIMV2\ Win32_ComputerSystemNumberOfProcessors.

Warehouse name

NUMBER_OF_PROCESSORS or NUMBEROFPR

Primary Owner Contact attribute

Description

Primary contact information for this computer

Туре

String

Source

The source for this attribute is WMI - ROOT\CIMV2\ Win32_ComputerSystemPrimaryOwnerContact.

Warehouse name

PRIMARY_OWNER_CONTACT or PRIMARYOWN

Primary Owner Name attribute

Description

Primary owner of this computer

Туре

String

Source

The source for this attribute is WMI - ROOT\CIMV2\ Win32_ComputerSystemPrimaryOwnerName.

Warehouse name

PRIMARY_OWNER_NAME or PRIMARYOW0

Status attribute

Description

Current status for this computer.

Type

String

Source

The source for this attribute is WMI - ROOT\CIMV2\Win32_ComputerSystemStatus.

Warehouse name

STATUS

Total Physical Memory (KB) attribute

Description

Total physical memory for this computer in kilobytes.

Туре

Integer (64-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: Total_Physical_Memory_Bytes / 1024.

Warehouse name

TOTAL_PHYSICAL_MEMORY or TOTALPHYSI

User Name attribute

Description

User name.

Type

String

Source

The source for this attribute is WMI - ROOT\CIMV2\ Win32_ComputerSystemUserName.

Warehouse name

USER_NAME or USERNAME

Workgroup attribute

Description

Workgroup membership for this computer.

Туре

String Source

The source for this attribute is WMI - ROOT\CIMV2\

Win32_ComputerSystemWorkgroup.

Warehouse name

WORKGROUP

Disk attribute group

Data gathered from the hrStorageTable that has been filtered to present only Disk metrics **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 Disk attribute group: **Node attribute: This attribute is a key attribute.**

Description

The managed system name of the agent.

Туре

String

Source

The source for this attribute is the agent.

Warehouse name

NODE

Timestamp attribute

Description

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

Туре

String

Source The source for this attribute is the agent.

Warehouse name

TIMESTAMP

Index attribute: This attribute is a key attribute.

Description

A unique value for each logical storage area contained by the host.

Туре

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Filtered data - Index.

Warehouse name

INDEX or HRSTORINDX

Disk Type attribute

Description

The type of storage represented by this entry.

Type

String

Source

The source for this attribute is Filtered data - Disk_Type.

Warehouse name

DISK_TYPE or FSYSTYPE

Name attribute: This attribute is a key attribute.

Description

A description of the type and instance of the storage described by this entry.

Туре

String

Source

The source for this attribute is Filtered data - Name.

Warehouse name

NAME or FSYSNAME

Block Size attribute

Description

The size, in bytes, of the data objects allocated from this pool. For example, if this entry is monitoring sectors, blocks, buffers, or packets, this number is usually greater than one. Otherwise, this number is typically one.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Filtered data - Block_Size.

Warehouse name

BLOCK_SIZE or FSYSBLKSIZ

Total Blocks attribute

Description

The size of the storage represented by this entry, in blocks. The size of a block is defined by the Block Size attribute.

Type

Integer (64-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Filtered data - Total_Blocks.

Warehouse name

TOTAL_BLOCKS or FSYSTOTBLK

Used Blocks attribute

Description

The amount of the storage represented by this entry that is allocated, in blocks. The size of a block is defined by the Block Size attribute.

Type

Integer (64-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

• Value Exceeds Maximum (9223372036854775807)

• Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Filtered data - Used_Blocks.

Warehouse name

USED_BLOCKS or FSYSUSEBLK

Disk Allocation Failures attribute

Description

The number of requests for storage represented by this entry that cannot be honored because there is not enough storage.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Filtered data - Disk_Allocation_Failures.

Warehouse name

DISK_ALLOCATION_FAILURES or FSYSFAIL

Free Blocks attribute

Description

The amount of the storage represented by this entry that is not allocated, in blocks. The size of a block is defined by the Block Size attribute.

Type

Integer (64-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: Total_Blocks - Used_Blocks.

Warehouse name

FREE_BLOCKS or FSYSFREBLK

Total Disk Space MB attribute

Description

The size of the storage represented by this entry, in units of MB.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: Total_Blocks * (Block_Size / 1024) / 1024. Warehouse name

TOTAL_DISK_SPACE_MB or FSYSTOTMB

Used Disk Space MB attribute

Description

The amount of the storage represented by this entry that is allocated, in units of MB.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: Used_Blocks * (Block_Size / 1024) / 1024. Warehouse name

USED_DISK_SPACE_MB or FSYSUSEMB

Available Disk Space MB attribute

Description

The amount of the storage represented by this entry that is not allocated, in units of MB.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: Free_Blocks * (Block_Size / 1024) / 1024. Warehouse name

AVAILABLE_DISK_SPACE_MB or FSYSFREMB

Percentage of Used Disk Space attribute

Description

The percentage of the total storage that is allocated.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: 100 * (Used_Blocks / Total_Blocks).

Warehouse name

PERCENTAGE_OF_USED_DISK_SPACE or FSYSPCTUSE

Percentage of Available Disk Space attribute

Description

The percentage of the total storage that is available.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: 100 - (Used_Blocks / Total_Blocks * 100).

Warehouse name

PERCENTAGE_OF_AVAILABLE_DISK_SPACE or FSYSPCTFRE

hrDeviceTable attribute group

Data gathered from SNMP Object hrDeviceTable.

Historical group

This attribute group is not eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the hrDeviceTable attribute group: **Node attribute: This attribute is a key attribute.**

Description

The managed system name of the agent.

Туре

String Source

The source for this attribute is the agent.

Timestamp attribute

Description

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

Туре

String Source

The source for this attribute is the agent.

hrDeviceIndex attribute: This attribute is a key attribute.

Description

A unique value for each device contained by the host.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.25.3.2.1.1.index value.

Description attribute

Description

A textual description of this device, including the manufacturer and revision, and optionally, the serial number for the device.

Type

String

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.25.3.2.1.3.index value.

Device ID attribute

Description

The product ID for this device.

Type String

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.25.3.2.1.4.index value.

Status attribute

Description

The current operational state of the device described by this row of the table. A value unknown(1) indicates that the current state of the device is unknown. running(2) indicates that the device is up and running.

Type

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

- unknown (1)
- running (2)
- warning (3)
- testing (4)
- down (5)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.25.3.2.1.5.index value.

Errors attribute

Description

The number of errors detected on this device.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.25.3.2.1.6.index value.

hrProcessor attribute group

Combined data gathered from SNMP Objects hrProcessorTable and hrDeviceTable.

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 hrProcessor attribute group: **Node attribute: This attribute is a key attribute.**

Description

The managed system name of the agent.

Туре

String

Source

The source for this attribute is the agent.

Warehouse name NODE

Timestamp attribute

Description

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

Type String

Source

The source for this attribute is the agent.

Warehouse name

TIMESTAMP

Firmware ID attribute

Description

The product ID of the firmware associated with the processor.

Туре

String Source

The source for this attribute is Join - Firmware_ID.

Warehouse name

FIRMWARE_ID or CPUFRMWID

hrProcessorDeviceIndex attribute: This attribute is a key attribute.

Description

A unique value for each device contained by the host.

Туре

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

• Value Exceeds Maximum (2147483647)

• Value Exceeds Minimum (-2147483648)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Join - hrProcessorDeviceIndex.

Warehouse name

HRPROCESSORDEVICEINDEX or CPUINDEX

% CPU Utilization attribute

Description

The average, over the last minute, of the percentage of time that this processor was not idle.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Join - CPU_Used_Pct.

Warehouse name

CPU_USED_PCT or CPUUTILPCT

% CPU Idle attribute

Description

The available percentage of the paging space.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Join - CPU_Idle_Pct.

Warehouse name

CPU_IDLE_PCT or CPUIDLEPCT

hrDeviceIndex attribute

Description

A unique value for each device contained by the host.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Join - hrDeviceIndex.

Warehouse name

HRDEVICEINDEX or HRDEVICEI0

Description attribute

Description

A textual description of this device, including the manufacturer and revision, and optionally, the serial number for the device.

Type

String

Source

The source for this attribute is Join - Description.

Warehouse name

DESCRIPTION or CPUDESCR

Device ID attribute

Description

The product ID for this device.

Туре

String

Source

The source for this attribute is Join - Device_ID.

Warehouse name DEVICE_ID or CPUID

Status attribute

Description

The current operational state of the device described by this row of the table. A value unknown(1) indicates that the current state of the device is unknown. running(2) indicates that the device is up and running.

Type

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

- unknown (1)
- running (2)
- warning (3)
- testing (4)

• down (5)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Join - Status.

Warehouse name

STATUS or CPUSTATUS

Errors attribute

Description

The number of errors detected on this device.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Join - Errors.

Warehouse name

ERRORS or CPUERRORS

hrProcessorTable attribute group

Data gathered from SNMP Object hrProcessorTable.

Historical group

This attribute group is not eligible for use with Tivoli Data Warehouse.

Attribute descriptions

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

Node attribute: This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String Source

The source for this attribute is the agent.

Timestamp attribute

Description

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

Type

String Source

The source for this attribute is the agent.

Firmware ID attribute

Description

The product ID of the firmware associated with the processor.

Туре

String

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.25.3.3.1.1.index value. **hrProcessorDeviceIndex attribute: This attribute is a key attribute.**

Description

A unique value for each device contained by the host.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is SNMP - .index value.

% CPU Utilization attribute

Description

The average, over the last minute, of the percentage of time that this processor was not idle.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.25.3.3.1.2.index value.

% CPU Idle attribute

Description

The available percentage of the paging space.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: 100 - CPU_Used_Pct.

hrStorageTable attribute group

Data gathered from SNMP Object hrStorageTable

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 hrStorageTable attribute group: Node attribute: This attribute is a key attribute.

Description

The managed system name of the agent.

Туре

String

Source

The source for this attribute is the agent.

Warehouse name

NODE

Timestamp attribute

Description

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

Type String

Source

The source for this attribute is the agent.

Warehouse name

TIMESTAMP

Index attribute: This attribute is a key attribute.

Description

A unique value for each logical storage area contained by the host.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.25.2.3.1.1.index value.

Warehouse name

INDEX or HRSTORINDX

Disk Type attribute

Description

The type of storage represented by this entry.

Туре

String Source

The source for this attribute is SNMP - 1.3.6.1.2.1.25.2.3.1.2.index value.

Warehouse name

DISK_TYPE or FSYSTYPE

Name attribute: This attribute is a key attribute.

Description

A description of the type and instance of the storage described by this entry.

Туре

String

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.25.2.3.1.3.index value.

Warehouse name

NAME or FSYSNAME

Block Size attribute

Description

The size, in bytes, of the data objects allocated from this pool. For example, if this entry is monitoring sectors, blocks, buffers, or packets, this number is usually greater than one. Otherwise, this number is typically one.

Туре

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.25.2.3.1.4.index value.

Warehouse name

BLOCK_SIZE or FSYSBLKSIZ

Total Blocks attribute

Description

The size of the storage represented by this entry, in blocks. The size of a block is defined by the Block Size attribute.

Type

Integer (64-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.25.2.3.1.5.index value.

Warehouse name

TOTAL_BLOCKS or FSYSTOTBLK

Used Blocks attribute

Description

The amount of the storage represented by this entry that is allocated, in blocks. The size of a block is defined by the Block Size attribute.

Туре

Integer (64-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.25.2.3.1.6.index value.

Warehouse name

USED_BLOCKS or FSYSUSEBLK

Disk Allocation Failures attribute

Description

The number of requests for storage represented by this entry that could not be honored becasue there was not enough storage.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.25.2.3.1.7.index value.

Warehouse name

DISK_ALLOCATION_FAILURES or FSYSFAIL

hrSystem attribute group

Data gathered from SNMP Object hrSystem

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 hrSystem attribute group: Node attribute: This attribute is a key attribute.

Description

The managed system name of the agent.

Туре

String

Source

The source for this attribute is the agent.

Warehouse name

NODE

Timestamp attribute

Description

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

Type

String

Source

The source for this attribute is the agent.

Warehouse name

TIMESTAMP

Uptime attribute

Description

Time (in hundredths of a second) since the network interface on this system was last initialized.

Type

String

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.1.3.0.

Warehouse name

UPTIME or SYSUPTIME

System Date attribute

Description

The local date and time of day for the host.

Туре

String

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.25.1.2.0.

Warehouse name

SYSTEM_DATE or SYSDATE

Current User Logins attribute

Description

The number of user sessions for which this host is storing state information. A session is a collection of processes requiring a single act of user authentication, and might be subject to collective job control.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.25.1.5.0.

Warehouse name

CURRENT_USER_LOGINS or SYSACTVUSR

Total Running Processes attribute

Description

The number of process contexts currently loaded or running on this system.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.25.1.6.0.

Warehouse name

TOTAL_RUNNING_PROCESSES or SYSRUNPROC

Maximum Allowed Processes attribute

Description

The maximum number of process contexts this system can support. If there is no fixed maximum, the value must be zero. On systems that have a fixed maximum, this object can help diagnose failures that occur when this maximum is reached.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.25.1.7.0.

Warehouse name

MAXIMUM_ALLOWED_PROCESSES or SYSPROCPCT

% Allowed Processes attribute

Description

The percentage of current to maximum process contexts this system allows.

Туре

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: Total_Running_Processes % Maximum_Allowed_Processes.

Warehouse name

ALLOWED_PROCESSES_PCT or PCT_ALLOWE

System Location attribute

Description

The physical location of this node (for example, `telephone closet, 3rd floor'). If the location is unknown, the value is the zero-length string.

Туре

String

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.1.6.0.

Warehouse name

SYSTEM_LOCATION or SYSLOCATN

System Contact attribute

Description

The textual identification of the contact person for this managed node, including information about how to contact this person. If no contact information is known, the value is the zero-length string.

Type

String

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.1.4.0.

Warehouse name

SYSTEM_CONTACT or SYSCONTACT

System Description attribute

Description

A textual description of the entity. This value must include the full name and version identification of the hardware type for the system, software operating system, and networking software.

Туре

String

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.1.1.0.

Warehouse name

SYSTEM_DESCRIPTION or SYSDESCR

Name attribute

Description

Computer name.

Туре

String Source

The source for this attribute is SNMP - 1.3.6.1.2.1.1.5.0.

Warehouse name

NAME

Logical Disk attribute group

A Logical Disk object type is a partition on a hard or fixed disk drive and is assigned a drive letter, such as C. Disks can be partitioned into distinct sections where they can store file, program, and page data. **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 Logical Disk attribute group: **Node attribute: This attribute is a key attribute.**

Description

The managed system name of the agent.

Type

String

Source

The source for this attribute is the agent.

Warehouse name

NODE

Timestamp attribute

Description

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

Type

String

Source

The source for this attribute is the agent.

Warehouse name

TIMESTAMP

Free Megabytes attribute

Description

The unallocated space on the disk drive in MB.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - LogicalDisk*\Free Megabytes.

Warehouse name

FREE_MEGABYTES or FREEMEGABY

% Free Space attribute

Description

The percent of the volume that is free space.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - LogicalDisk*\% Free Space.

Warehouse name

PCT_FREE_SPACE or PERCENTFRE

% Used Space attribute

Description

The percent of the volume that is used space.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: 100 - Pct_Free_Space.

Warehouse name

PCT_USED_SPACE or PCTUSP

% Disk Read Time attribute

Description

The percentage of elapsed time that the selected disk drive is busy servicing read requests.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - LogicalDisk $\times\$ Disk Read Time.

Warehouse name

PCT_DISK_READ_TIME or PERCENTDIS

% Disk Write Time attribute

Description

The percentage of elapsed time that the selected disk drive is busy servicing write requests.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - LogicalDisk $\times\$ Disk Write Time.

Warehouse name

PCT_DISK_WRITE_TIME or PERCENTDI1

% Disk Time attribute

Description

The percentage of elapsed time that the selected disk drive is busy servicing read or write requests.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - LogicalDisk*\% Disk Time.

Warehouse name

PCT_DISK_TIME or PERCENTDI0

Disk Bytes/sec attribute

Description

The rate bytes are transferred to or from the disk during write or read operations. **pe**

Туре

Integer (64-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - LogicalDisk*\Disk Bytes/sec.

Warehouse name

DISK_BYTES_PER_SEC or DISKBYTESP

Disk Read Bytes/sec attribute

Description

The rate bytes are transferred from the disk during read operations.

Type

Integer (64-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - LogicalDisk*\Disk Read Bytes/sec.

Warehouse name

DISK_READ_BYTES_PER_SEC or DISKREADBY

Disk Reads/sec attribute

Description

The rate of read operations on the disk.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - LogicalDisk*\Disk Reads/sec.

Warehouse name

DISK_READS_PER_SEC or DISKREADSP

Disk Transfers/sec attribute

Description

The rate of read and write operations on the disk.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - LogicalDisk*\Disk Transfers/sec.

Warehouse name

DISK_TRANSFERS_PER_SEC or DISKTRANSF

Disk Write Bytes/sec attribute

Description

The rate at which bytes are transferred to the disk during write operations.

Туре

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - LogicalDisk*\Disk Write Bytes/sec. Warehouse name

DISK_WRITE_BYTES_PER_SEC or DISKWRITEB

Disk Writes/sec attribute

Description

The rate of write operations on the disk.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - LogicalDisk*\Disk Writes/sec.

Warehouse name

DISK_WRITES_PER_SEC or DISKWRITES

Name attribute: This attribute is a key attribute.

Description

The name of the instance.

Туре

String

Source

The source for this attribute is PerfMon.

Warehouse name

NAME

Managed Systems SNMP attribute group

Managed Windows Systems

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 Managed Systems SNMP attribute group:

Node attribute: This attribute is a key attribute.

Description The managed system name of the agent. Type String Source The source for this attribute is the agent. Warehouse name NODE **Timestamp attribute** Description The local time at the agent when the data was collected. Type String Source The source for this attribute is the agent. Warehouse name TIMESTAMP Subnode MSN attribute: This attribute is a key attribute. Description The Managed System Name of the subnode agent. Type String Warehouse name SUBNODE_MSN or SN_MSN Subnode Affinity attribute Description The affinity for the subnode agent. Type String Warehouse name SUBNODE_AFFINITY or SN_AFFIN Subnode Type attribute: This attribute is a key attribute. Description The Node Type of this subnode. Type String Warehouse name SUBNODE_TYPE or SN_TYPE Subnode Resource Name attribute Description The Resource Name of the subnode agent. Type String Warehouse name SUBNODE_RESOURCE_NAME or SN_RES Subnode Version attribute Description The Version of the subnode agent. Type String Warehouse name SUBNODE_VERSION or SN_VER

Managed Systems WMI attribute group

Managed Windows Systems

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 Managed Systems WMI attribute group: Node attribute: This attribute is a key attribute. Description The managed system name of the agent. Type String Source The source for this attribute is the agent. Warehouse name NODE Timestamp attribute Description The local time at the agent when the data was collected. Type String Source The source for this attribute is the agent. Warehouse name TIMESTAMP Subnode MSN attribute: This attribute is a key attribute. Description The Managed System Name of the subnode agent. Type String Warehouse name SUBNODE_MSN or SN_MSN Subnode Affinity attribute Description The affinity for the subnode agent. Type String Warehouse name SUBNODE_AFFINITY or SN_AFFIN Subnode Type attribute: This attribute is a key attribute. Description The Node Type of this subnode. Type String Warehouse name SUBNODE_TYPE or SN_TYPE Subnode Resource Name attribute Description The Resource Name of the subnode agent. Type String Warehouse name SUBNODE_RESOURCE_NAME or SN_RES Subnode Version attribute Description The Version of the subnode agent. Type String

Warehouse name SUBNODE_VERSION or SN_VER

Memory attribute group

Data gathered from SNMP Object hrStorageTable

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 Memory attribute group: Node attribute: This attribute is a key attribute.

Description

The managed system name of the agent.

Туре

String

Source

The source for this attribute is the agent.

Warehouse name

NODE

Timestamp attribute

Description

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

Туре

String

Source

The source for this attribute is the agent.

Warehouse name

TIMESTAMP

Index attribute: This attribute is a key attribute.

Description

A unique value for each logical storage area contained by the host.

Туре

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Filtered data - Index.

Warehouse name

INDEX or MEMINDEX

Memory Type attribute

Description

The type of storage represented by this entry.

Type

String

Source

The source for this attribute is Filtered data - Disk_Type.

Warehouse name

MEMORY_TYPE or MEMTYPE

Description attribute: This attribute is a key attribute.

Description

A description of the type and instance of the storage described by this entry.

Type

String Source

The source for this attribute is Filtered data - Name.

Warehouse name

DESCRIPTION or MEMDESCR

Block Size attribute

Description

The size, in bytes, of the data objects allocated from this pool. For example, if this entry is monitoring sectors, blocks, buffers, or packets, this number is usually greater than one. Otherwise, this number is typically one.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Filtered data - Block_Size.

Warehouse name

BLOCK_SIZE or MEMBLKSIZ

Total Memory Blocks attribute

Description

The size of the storage represented by this entry, in blocks. The size of a block is defined by the Block Size attribute.

Type

Integer (64-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Filtered data - Total_Blocks.

Warehouse name

TOTAL_MEMORY_BLOCKS or MEMTOTBLK

Used Memory Blocks attribute

Description

The amount of the storage represented by this entry that is allocated, in blocks. The size of a block is defined by the Block Size attribute.

Type

Integer (64-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Filtered data - Used_Blocks.

Warehouse name

USED_MEMORY_BLOCKS or MEMUSEBLK

Memory Allocation Failures attribute

Description

The number of requests for storage represented by this entry that cannot be honored because there is not enough storage.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Filtered data - Disk_Allocation_Failures.

Warehouse name

MEMORY_ALLOCATION_FAILURES or MEMFAIL

Free Memory Blocks attribute

Description

The amount of the storage represented by this entry that is not allocated, in blocks. The size of a block is defined by the Block Size attribute.

Type

Integer (64-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: Total_Memory_Blocks -

Used_Memory_Blocks.

Warehouse name

FREE_MEMORY_BLOCKS or MEMFREBLK

Total Memory MB attribute

Description

The size of the storage represented by this entry, in units of MB.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: Total_Memory_Blocks * (Block_Size / 1024) / 1024.

Warehouse name

TOTAL_MEMORY_MB or MEMTOTMB

Used Memory MB attribute

Description

The amount of the storage represented by this entry that is allocated, in units of MB.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: Used_Memory_Blocks * (Block_Size / 1024) / 1024.

Warehouse name

USED_MEMORY_MB or MEMUSEMB

Available Memory MB attribute

Description

The amount of the storage represented by this entry that is not allocated, in units of MB.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: Free_Memory_Blocks * (Block_Size / 1024) / 1024.

Warehouse name

AVAILABLE_MEMORY_MB or MEMFREMB

Percentage of Used Memory attribute

Description

The percentage of the total storage that is allocated.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: 100 * (Used_Memory_Blocks / Total_Memory_Blocks).

Warehouse name

PERCENTAGE_OF_USED_MEMORY or MEMPCTUSE

Percentage of Available Memory attribute

Description

The percentage of the total storage that is available.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: 100 - (100 * Used_Memory_Blocks / Total_Memory_Blocks).

Warehouse name

PERCENTAGE_OF_AVAILABLE_MEMORY or MEMPCTFRE

Network attribute group

Data gathered from SNMP Object ifTable.

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 Network attribute group: **Node attribute: This attribute is a key attribute.**

Description

The managed system name of the agent.

Type

String

Source

The source for this attribute is the agent.

Warehouse name

NODE

Timestamp attribute

Description

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

Туре

String

Source

The source for this attribute is the agent.

Warehouse name

TIMESTAMP

Index attribute: This attribute is a key attribute.

Description

A unique value for each interface. The value ranges between 1 and the value of ifNumber. The value for each interface must remain constant from one re-initialization of the network management system for the entity to the next re-initialization.

Туре

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.2.2.1.1.index value.

Warehouse name

INDEX or IFINDEX

Description attribute: This attribute is a key attribute.

Description

A textual string containing information about the interface. This string must include the name of the manufacturer, the product name, and the version of the interface hardware or software.

Type

String

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.2.2.1.2.index value.

Warehouse name

DESCRIPTION or IFDESCR

Type attribute

Description

The type of interface. Additional values for ifType are assigned by the Internet Assigned Numbers Authority (IANA), through updating the syntax of the IANAifType textual convention.

Type

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

- other (1)
- regular1822 (2)
- hdh1822 (3)
- ddnX25 (4)
- rfc877x25 (5)
- ethernet (6)
- ethernet (7)
- iso88024TokenBus (8)
- iso88025TokenRing (9)
- iso88026Man (10)
- ethernet (11)
- proteon10Mbit (12)
- proteon80Mbit (13)
- hyperchannel (14)
- fddi (15)
- lapb (16)
- sdlc (17)
- ds1 (18)
- e1 (19)
- basicISDN (20)
- primaryISDN (21)
- Proprietary PointToPoint Serial (22)
- ppp (23)
- softwareLoopback (24)
- eon (25)
- ethernet3Mbit (26)
- nsip (27)
- slip (28)
- ultra (29)
- ds3 (30)
- sip (31)
- frameRelay (32)

- rs232 (33)
- parallel-port (34)
- arcnet (35)
- arcnetPlus (36)
- atm (37)
- miox25 (38)
- sonet (39)
- x25ple (40)
- iso88022llc (41)
- localTalk (42)
- smdsDxi (43)
- frameRelayService (44)
- v35 (45)
- hssi (46)
- hippi (47)
- modem (48)
- aal5 (49)
- sonetPath (50)
- sonetVT (51)
- smdsIcip (52)
- Proprietary Virtual (53)
- proprietary Multiplexor (54)
- 100BaseVG (55)
- fibreChannel (56)
- HIPPI Interface (57)
- Frame Relay Interconnect (58)
- ATM Emulated LAN for 802.3 (59)
- ATM Emulated LAN for 802.5 (60)
- ATM Emulated circuit (61)
- ethernet (62)
- ISDN and X.25 (63)
- CCITT V.11/X.21 (64)
- CCITT V.36 (65)
- CCITT G703 at 64Kbps (66)
- g703at2mb (67)
- SNA QLLC (68)
- ethernet (69)
- radio spread spectrum (71)
- IBM System 360/370 OEMI Channel (72)
- IBM Enterprise Systems Connection (73)
- Data Link Switching (74)
- ISDN S/T interface (75)
- ISDN U interface (76)
- Link Access Protocol D (77)
- IP Switching Objects (78)
- Remote Source Route Bridging (79)
- ATM Logical Port (80)
- Digital Signal Level 0 (81)
- group of ds0s on the same ds1 (82)
- Bisynchronous Protocol (83)
- Asynchronous Protocol (84)
- Combat Net Radio (85)
- ISO 802.5r DTR (86)
- Ext Pos Loc Report Sys (87)
- Appletalk Remote Access Protocol (88)
- Proprietary Connectionless Protocol (89)

- CCITT-ITU X.29 PAD Protocol (90)
- CCITT-ITU X.3 PAD Facility (91)
- Multiproto Interconnect over FR (92)
- CCITT-ITU X213 (93)
- Asymmetric Digital Subscriber Loop (94)
- Rate-Adapt. Digital Subscriber Loop (95)
- Symmetric Digital Subscriber Loop (96)
- Very H-Speed Digital Subscrib. Loop (97)
- ISO 802.5 CRFP (98)
- Myricom Myrinet (99)
- voice recEive and transMit (100)
- voice Foreign Exchange Office (101)
- voice Foreign Exchange Station (102)
- voice encapsulation (103)
- voice over IP encapsulation (104)
- ATM DXI (105)
- ATM FUNI (106)
- ATM IMA (107)
- PPP Multilink Bundle (108)
- IBM ipOverCdlc (109)
- IBM Common Link Access to Workstn (110)
- IBM stackToStack (111)
- IBM VIPA (112)
- IBM multi-protocol channel support (113)
- IBM ipOverAtm (114)
- ISO 802.5j Fiber Token Ring (115)
- IBM twinaxial data link control (116)
- ethernet (117)
- HDLC (118)
- LAP F (119)
- V.37 (120)
- X.25 Multi-Link Protocol (121)
- X25 Hunt Group (122)
- Transp HDLC (123)
- Interleave channel (124)
- Fast channel (125)
- IP (for APPN HPR in IP networks) (126)
- CATV Mac Layer (127)
- CATV Downstream interface (128)
- CATV Upstream interface (129)
- Avalon Parallel Processor (130)
- tunnel encapsulation interface (131)
- coffee pot (132)
- Circuit Emulation Service (133)
- ATM Sub Interface (134)
- Layer 2 Virtual LAN using 802.1Q (135)
- Layer 3 Virtual LAN using IP (136)
- Layer 3 Virtual LAN using IPX (137)
- IP over Power Lines (138)
- Multimedia Mail over IP (139)
- Dynamic syncronous Transfer Mode (140)
- Data Communications Network (141)
- IP Forwarding Interface (142)
- Multi-rate Symmetric DSL (143)
- IEEE1394 High Performance Serial Bus (144)
- HIPPI-6400 (145)

- DVB-RCC MAC Layer (146)
- DVB-RCC Downstream Channel (147)
- DVB-RCC Upstream Channel (148)
- ATM Virtual Interface (149)
- MPLS Tunnel Virtual Interface (150)
- Spatial Reuse Protocol (151)
- Voice Over ATM (152)
- Voice Over Frame Relay (153)
- Digital Subscriber Loop over ISDN (154)
- Avici Composite Link Interface (155)
- SS7 Signaling Link (156)
- Prop. P2P wireless interface (157)
- Frame Forward Interface (158)
- Multiprotocol over ATM AAL5 (159)
- USB Interface (160)
- IEEE 802.3ad Link Aggregate (161)
- BGP Policy Accounting (162)
- FRF .16 Multilink Frame Relay (163)
- H323 Gatekeeper (164)
- H323 Voice and Video Proxy (165)
- MPLS (166)
- Multi-frequency signaling link (167)
- High Bit-Rate DSL 2nd generation (168)
- Multirate High Bit-Rate DSL 2nd generation (169)
- Facility Data Link 4Kbps on a DS1 (170)
- Packet over SONET/SDH Interface (171)
- DVB-ASI Input (172)
- DVB-ASI Output (173)
- Power Line Communications (174)
- Non Facility Associated Signaling (175)
- TR008 (176)
- Remote Digital Terminal (177)
- Integrated Digital Terminal (178)
- ISUP (179)
- Cisco proprietary Maclayer (180)
- Cisco proprietary Downstream (181)
- Cisco proprietary Upstream (182)
- HIPERLAN Type 2 Radio Interface (183)
- propBWAp2Mp (184)
- SONET Overhead Channel (185)
- Digital Wrapper (186)
- ATM adaptation layer 2 (187)
- MAC layer over radio links (188)
- ATM over radio links (189)
- Inter Machine Trunks (190)
- Multiple Virtual Lines DSL (191)
- Long Reach DSL (192)
- Frame Relay DLCI End Point (193)
- ATM VCI End Point (194)
- Optical Channel (195)
- Optical Transport (196)
- Proprietary ATM (197)
- Voice Over Cable Interface (198)
- Infiniband (199)
- TE Link (200)
- Q.2931 (201)

- Virtual Trunk Group (202)
- SIP Trunk Group (203)
- SIP Signaling (204)
- CATV Upstream Channel (205)
- Acorn Econet (206)
- FSAN 155Mb Symetrical PON interface (207)
- FSAN622Mb Symetrical PON interface (208)
- Transparent bridge interface (209)
- Interface common to multiple lines (210)
- voice E and M Feature Group D (211)
- voice FGD Exchange Access North American (212)
- voice Direct Inward Dialing (213)
- MPEG transport interface (214)
- 6to4 interface (215)
- GTP (GPRS Tunneling Protocol) (216)
- Paradyne EtherLoop 1 (217)
- Paradyne EtherLoop 2 (218)
- Optical Channel Group (219)
- HomePNA ITU-T G.989 (220)
- Generic Framing Procedure (GFP) (221)
- Layer 2 Virtual LAN using Cisco ISL (222)
- Acteleis proprietary MetaLOOP High Speed Link (223)
- FCIP Link (224)
- Resilient Packet Ring Interface Type (225)
- RF Qam Interface (226)
- Link Management Protocol (227)
- Cambridge Broadband Networks Limited VectaStar (228)
- CATV Modular CMTS Downstream Interface (229)
- Asymmetric Digital Subscriber Loop Version 2 (230)
- MACSecControlled (231)
- MACSecUncontrolled (232)
- Avici Optical Ethernet Aggregate (233)
- atmbond (234)
- voice FGD Operator Services (235)
- MultiMedia over Coax Alliance (MoCA) Interface (236)
- IEEE 802.16 WMAN interface (237)
- Asymmetric Digital Subscriber Loop Version 2 (238)
- DVB-RCS MAC Layer (239)
- DVB Satellite TDM (240)
- DVB-RCS TDMA (241)
- LAPS based on ITU-T X.86/Y.1323 (242)
- 3GPP WWAN (243)
- 3GPP2 WWAN (244)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.2.2.1.3.index value.

Warehouse name

TYPE or IFTYPE

MTU attribute

Description

The size of the largest packet that can be sent or received on the interface, specified in octets. For interfaces that are used for transmitting network datagrams, this is the size of the largest network datagram that can be sent on the interface.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.2.2.1.4.index value.

Warehouse name

MTU or IFMTU

Speed bps attribute

Description

An estimate of the current bandwidth for the interface in bits per second.

Туре

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.2.2.1.5.index value.

Warehouse name

SPEED_BPS or IFSPEED

MAC Address attribute

Description

The interface address at the protocol layer immediately below the network layer in the protocol stack. For interfaces that do not have such an address (for example, a serial line), this object must contain an octet string of zero length.

Type

String Source

The source for this attribute is SNMP - 1.3.6.1.2.1.2.2.1.6.index value.

Warehouse name

MAC_ADDRESS or IFMACADDR

Administrative Status attribute

Description

The desired state of the interface. The testing(3) state indicates that no operational packets can be passed. When a managed system initializes, all interfaces start with Administrative Status in the down(2) state.

Type

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

- up (1)
- down (2)
- testing (3)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.2.2.1.7.index value.

Warehouse name

ADMINISTRATIVE_STATUS or IFADMNSTAT

Operational Status attribute

Description

The current operational state of the interface. The testing(3) state indicates that no operational packets can be passed.

Type

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

- up (1)
- down (2)
- testing (3)
- unknown (4)
- dormant (5)
- notPresent (6)
- lowerLayerDown (7)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.2.2.1.8.index value.

Warehouse name

OPERATIONAL_STATUS or IFOPERSTAT

Bytes In per sec attribute

Description

The total number of octets received on the interface, including framing characters. Discontinuities in the value of this counter can occur at re-initialization of the management system.

Type

DEFAULT(2) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.2.2.1.10.index value.

Warehouse name

BYTES_IN_PER_SEC or IFINOCTETS

Inbound Discarded Packets attribute

Description

The number of inbound packets that were chosen to be discarded though no errors had been detected to prevent them from being deliverable to a higher-layer protocol. One possible reason for discarding such a packet might be to free buffer space.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.2.2.1.13.index value.

Warehouse name

INBOUND_DISCARDED_PACKETS or IFINDISCAR

Inbound Packet Errors attribute

Description

The number of inbound packets or transmission units that contained errors preventing them from being deliverable to a higher-layer protocol.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.2.2.1.14.index value.

Warehouse name

INBOUND_PACKET_ERRORS or IFINERRORS

Inbound Protocol Errors attribute

Description

The number of packets or transmission units received through the interface that were discarded because of an unknown or unsupported protocol.

Туре

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.2.2.1.15.index value.

Warehouse name

INBOUND_PROTOCOL_ERRORS or IFINUNKNOW

Bytes Out per sec attribute

Description

The total number of octets transmitted out of the interface, including framing characters. Discontinuities in the value of this counter can occur at re-initialization of the management system.

Type

DEFAULT(2) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.2.2.1.16.index value.

Warehouse name

BYTES_OUT_PER_SEC or IFOUTOCTET

Outbound Discarded Packets attribute

Description

The number of outbound packets that were chosen to be discarded though no errors had been detected to prevent them from being transmitted. One possible reason for discarding such a packet might be to free buffer space.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.2.2.1.19.index value.

Warehouse name

OUTBOUND_DISCARDED_PACKETS or IFOUTDISCA

Outbound Packet Errors attribute

Description

For packet-oriented interfaces, the number of outbound packets that cannot be transmitted because of errors. For character-oriented or fixed-length interfaces, the number of outbound transmission units that cannot be transmitted because of errors.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.2.2.1.20.index value.

Warehouse name

OUTBOUND_PACKET_ERRORS or IFOUTERROR

Network Interfaces attribute group

Network interfaces on this computer

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 Network Interfaces attribute group:

Node attribute: This attribute is a key attribute.

Description

The managed system name of the agent.

Туре

String Source

The source for this attribute is the agent.

Warehouse name

NODE

Timestamp attribute

Description

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

Type

String Source

The source for this attribute is the agent.

Warehouse name

TIMESTAMP

Bytes Received/sec attribute

Description

The rate that bytes are sent and received on the interface, including framing characters.

Type

Integer (64-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Network Interface*\Bytes Received/sec.

Warehouse name

BYTES_RECEIVED_SEC or BYTES_RECE

Bytes Sent/sec attribute

Description

The rate that bytes are sent on the interface, including framing characters.

Туре

Integer (64-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Network Interface*\Bytes Sent/sec.

Warehouse name

BYTES_SENT_SEC or BYTES_SENT

Bytes Total/sec attribute

Description

The rate that bytes are sent and received on the interface, including framing characters.

Type

Integer (64-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Network Interface*\Bytes Total/sec.

Warehouse name

BYTES_TOTAL_SEC or BYTES_TOTA

Current Bandwidth attribute

Description

Bandwidth for this network interface

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Network Interface*\Current Bandwidth.

Warehouse name

CURRENT_BANDWIDTH or CURRENT_BA

Packets/sec attribute

Description

The rate that packets are sent and received on the network interface.

Type

Integer (64-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Network Interface*\Packets/sec.

Warehouse name

PACKETS_SEC or PACKETS_SE

Packets Outbound Discarded attribute

Description

The number of outbound packets that were chosen to be discarded though no errors had been detected to prevent them from being transmitted.

Type

Integer (64-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

Warehouse name

PACKETS_OUTBOUND_DISCARDED or PACKETS_OU

Packets Outbound Errors attribute

Description

The number of outbound packets that were not transmitted because of errors.

Type

Integer (64-bit gauge) with enumerated values. The strings are displayed in the

Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Network Interface*\Packets Outbound Errors.

Warehouse name

PACKETS_OUTBOUND_ERRORS or PACKETS_O0

Packets Received/sec attribute

Description

The rate that packets are received on the network interface.

Type

Integer (64-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Network Interface*\Packets Received/sec.

Warehouse name

PACKETS_RECEIVED_SEC or PACKETS_RE

Packets Received Discarded attribute

Description

The number of inbound packets that were chosen to be discarded though no errors had been detected to prevent them from being deliverable to a higher-layer protocol.

Type

Integer (64-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Network Interface*\Packets Received Discarded.

Warehouse name

PACKETS_RECEIVED_DISCARDED or PACKETS_R0

Packets Received Errors attribute

Description

The number of inbound packets that contained errors preventing them from being deliverable to a higher-layer protocol.

Type

Integer (64-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

• Value Exceeds Maximum (9223372036854775807)

• Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Network Interface*\Packets Received Errors.

Warehouse name

PACKETS_RECEIVED_ERRORS or PACKETS_R1

Packets Received Unknown attribute

Description

The number of packets received through the interface that were discarded because of an unknown or unsupported protocol.

Type

Integer (64-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Network Interface*\Packets Received Unknown.

Warehouse name

PACKETS_RECEIVED_UNKNOWN or PACKETS_R4

Packets Sent/sec attribute

Description

The rate at which packets are sent on the network interface.

Type

Integer (64-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Network Interface*\Packets Sent/sec. Warehouse name

PACKETS_SENT_SEC or PACKETS_S0

Name attribute: This attribute is a key attribute.

Description

The name of the instance.

Туре

String

Source

The source for this attribute is PerfMon.

Warehouse name

NAME

Operating System attribute group

Information on the operating system for this system.

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 Operating System attribute group:

Node attribute: This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Source

The source for this attribute is the agent.

Warehouse name

NODE

Timestamp attribute

Description

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

Type

String

Source

The source for this attribute is the agent.

Warehouse name TIMESTAMP

Description attribute

Description

Description.

Type

String

Source

The source for this attribute is WMI - ROOT\CIMV2\ Win32_OperatingSystemDescription.

Warehouse name

DESCRIPTION or DESCRIPTIO

Free Physical Memory (KB) attribute

Description

Number of KB of physical memory that are currently available for use

Type

Integer (64-bit counter) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - ROOT\CIMV2\

Win32_OperatingSystemFreePhysicalMemory.

Warehouse name

FREE_PHYSICAL_MEMORY_KBYTES or FREEPHYKB

Total Virtual Memory (KB) attribute

Description

Number of KB of virtual memory.

Type

Integer (64-bit counter) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

• Value Exceeds Maximum (9223372036854775807)
• Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - ROOT\CIMV2\ Win32_OperatingSystemTetalVirtualMemorySize

 $Win 32_Operating System Total Virtual Memory Size.$

Warehouse name

TOTAL_VIRTUAL_MEMORY_KBYTES or TOTALVIRTU

Free Virtual Memory (KB) attribute

Description

Number of KB of virtual memory currently available.

Type

Integer (64-bit counter) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - ROOT\CIMV2\

 $Win 32_Operating System Free Virtual Memory.$

Warehouse name

FREE_VIRTUAL_MEMORY_KBYTES or FREEVIRTKB

Used Virtual Memory (KB) attribute

Description

Number of KB of virtual memory.

Type

Integer (64-bit counter) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: Total_Virtual_Memory_KBytes - Free_Virtual_Memory_KBytes.

Warehouse name

USED_VIRTUAL_MEMORY_KBYTES or TOTALVRTKU

Pct Used Virtual Memory attribute

Description

Percentage of used virtual memory.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: Used_Virtual_Memory_KBytes % Total_Virtual_Memory_KBytes.

Warehouse name

PCT_USED_VIRTUAL_MEMORY or PCTUVRT

Pct Free Virtual Memory attribute

Description

Percentage of free virtual memory.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: 100 - Pct_Used_Virtual_Memory.

Warehouse name

PCT_FREE_VIRTUAL_MEMORY or PCTFVRT

Manufacturer attribute

Description

Manufacturer of this computer.

Type

String

Source

The source for this attribute is WMI - ROOT\CIMV2 $\$

Win32_OperatingSystemManufacturer.

Warehouse name

MANUFACTURER or MANUFACTUR

Name attribute: This attribute is a key attribute.

Description

Name of this computer

Type

String

Source

The source for this attribute is WMI - ROOT\CIMV2\

Win32_OperatingSystemName.

Warehouse name

NAME

Number of Processes attribute

Description

The number of the processes on the computer.

Туре

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - ROOT\CIMV2\

Win32_OperatingSystemNumberOfProcesses.

Warehouse name

NUMBER_OF_PROCESSES or NUMBEROFPR

Number of Users attribute

The number of the users logged in to the computer.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - ROOT\CIMV2\

Win32_OperatingSystemNumberOfUsers.

Warehouse name

NUMBER_OF_USERS or NUMBEROFUS

OS Type attribute

Description

Operating system type.

Туре

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - ROOT\CIMV2\

Win32_OperatingSystemOSType.

Warehouse name OS_TYPE or OSTYPE

Status attribute

Description

Status of this computer

Туре

String

Source

The source for this attribute is WMI - ROOT\CIMV2\Win32_OperatingSystemStatus.

Warehouse name

STATUS

OS Version attribute

Description

The operating system version.

Туре

String

Source

The source for this attribute is WMI - ROOT\CIMV2\

Win32_OperatingSystemVersion.

Warehouse name

OS_VERSION or VERSION

Page File Usage Details attribute group

Details about page files

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 Page File Usage Details attribute group:

Node attribute: This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String Source

The source for this attribute is the agent.

Warehouse name

NODE

Timestamp attribute

Description

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

Type

String

Source

The source for this attribute is the agent.

Warehouse name

TIMESTAMP

Caption attribute

Description

Caption for this page file.

Type

String

Source

The source for this attribute is WMI - ROOT\CIMV2\ Win32_PageFileUsageCaption.

Warehouse name

CAPTION

Current Usage (MB) attribute

Description

Current page file usage.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - ROOT\CIMV2\

Win32_PageFileUsageCurrentUsage.

Warehouse name

CURRENTUSAGE or CURRENTUSA

Description attribute

Description

Description for this page file

Type

String

Source The source for this attribute is WMI - ROOT\CIMV2\ Win32_PageFileUsageDescription. Warehouse name DESCRIPTION or DESCRIPTIO Install Date attribute Description Date this page file was installed. Type Timestamp Source The source for this attribute is WMI - ROOT\CIMV2\ Win32_PageFileUsageInstallDate. Warehouse name INSTALL_DATE or INSTALLDAT Name attribute: This attribute is a key attribute. Description Name of the page file. Type String Source The source for this attribute is WMI - ROOT\CIMV2\ Win32 PageFileUsageName. Warehouse name NAME Status attribute Description Status for this page file. Type String Source The source for this attribute is WMI - ROOT\CIMV2\ Win32_PageFileUsageStatus. Warehouse name **STATUS**

Paging File Summary attribute group

Displays information about the Page files for the system. 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 Paging File Summary attribute group: Node attribute: This attribute is a key attribute. Description The managed system name of the agent. Type String Source The source for this attribute is the agent. Warehouse name NODE **Timestamp attribute** Description The local time at the agent when the data was collected.

Туре

String Source

The source for this attribute is the agent.

Warehouse name

TIMESTAMP

% Usage attribute

Description

The amount of the Page File instance in use in percent.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Paging File*\% Usage.

Warehouse name

PCT_USAGE or USAGE

<u>% Usage Peak attribute</u>

Description

The peak amount of the Page File instance used, in percent.

Туре

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Paging File $\times\$ Usage Peak.

Warehouse name

PCT_USAGE_PEAK or USAGE_PEAK

% Free attribute

Description

The amount of the Page File instance not in use, in percent.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: 100 - Pct_Usage.

Warehouse name

PCT_FREE or PAGEFREE

Name attribute: This attribute is a key attribute.

Description

The name of the instance.

Type String Source The source for this attribute is PerfMon. Warehouse name NAME

Performance Object Status attribute group

The Performance Object Status attribute group contains information that reflects the status of other attribute groups so you can see the status of all of the performance objects that make up this application all at once. Each of these other performance attribute groups is represented by a row in this table (or other type of view). The status for an attribute group reflects the result of the last attempt to collect data for that attribute group, which allows you to see whether the agent is performing correctly. Unlike other attribute groups, the Performance Object Status attribute group does not reflect the state of the monitored application. This attribute group is most often used to determine why data is not available for one of the performance attribute groups.

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 Performance Object Status attribute group:

Node attribute: This attribute is a key attribute.

Description

The managed system name of the agent.

Туре

String Source

The source for this attribute is the agent.

Warehouse name

NODE

Timestamp attribute

Description

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

Туре

String

Source

The source for this attribute is the agent.

Warehouse name

TIMESTAMP

Query Name attribute: This attribute is a key attribute.

Description

The name of the attribute group.

Туре

String

Warehouse name

QUERY_NAME or ATTRGRP

Object Name attribute

Description

The name of the performance object.

Type

String Warehouse name OBJECT_NAME or OBJNAME

Object Type attribute

The type of the performance object.

Type

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

- WMI (0)
- PERFMON (1)
- WMI ASSOCIATION GROUP (2)
- JMX (3)
- SNMP (4)
- SHELL COMMAND (5)
- JOINED GROUPS (6)
- CIMOM (7)
- CUSTOM (8)
- ROLLUP DATA (9)
- WMI REMOTE DATA (10)
- LOG FILE (11)
- JDBC (12)
- CONFIG DISCOVERY (13)
- NT EVENT LOG (14)
- FILTER (15)
- SNMP EVENT (16)
- PING (17)
- DIRECTOR DATA (18)
- DIRECTOR EVENT (19)
- SSH REMOTE SHELL COMMAND (20)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

OBJECT_TYPE or OBJTYPE

Object Status attribute

Description

The status of the performance object.

Type

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

- ACTIVE (0)
- INACTIVE (1)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

OBJECT_STATUS or OBJSTTS

Error Code attribute

Description

The error code that is associated with the query.

Type

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

- NO ERROR (0)
- GENERAL ERROR (1)
- OBJECT NOT FOUND (2)
- COUNTER NOT FOUND (3)

- NAMESPACE ERROR (4)
- OBJECT CURRENTLY UNAVAILABLE (5)
- COM LIBRARY INIT FAILURE (6)
- SECURITY INIT FAILURE (7)
- PROXY SECURITY FAILURE (9)
- NO INSTANCES RETURNED (10)
- ASSOCIATOR QUERY FAILED (11)
- REFERENCE QUERY FAILED (12)
- NO RESPONSE RECEIVED (13)
- CANNOT FIND JOINED QUERY (14)
- CANNOT FIND JOIN ATTRIBUTE IN QUERY 1 RESULTS (15)
- CANNOT FIND JOIN ATTRIBUTE IN QUERY 2 RESULTS (16)
- QUERY 1 NOT A SINGLETON (17)
- QUERY 2 NOT A SINGLETON (18)
- NO INSTANCES RETURNED IN QUERY 1 (19)
- NO INSTANCES RETURNED IN QUERY 2 (20)
- CANNOT FIND ROLLUP QUERY (21)
- CANNOT FIND ROLLUP ATTRIBUTE (22)
- FILE OFFLINE (23)
- NO HOSTNAME (24)
- MISSING LIBRARY (25)
- ATTRIBUTE COUNT MISMATCH (26)
- ATTRIBUTE NAME MISMATCH (27)
- COMMON DATA PROVIDER NOT STARTED (28)
- CALLBACK REGISTRATION ERROR (29)
- MDL LOAD ERROR (30)
- AUTHENTICATION FAILED (31)
- CANNOT RESOLVE HOST NAME (32)
- SUBNODE UNAVAILABLE (33)
- SUBNODE NOT FOUND IN CONFIG (34)
- ATTRIBUTE ERROR (35)
- CLASSPATH ERROR (36)
- CONNECTION FAILURE (37)
- FILTER SYNTAX ERROR (38)
- FILE NAME MISSING (39)
- SQL QUERY ERROR (40)
- SQL FILTER QUERY ERROR (41)
- SQL DB QUERY ERROR (42)
- SQL DB FILTER QUERY ERROR (43)
- PORT OPEN FAILED (44)
- ACCESS DENIED (45)
- TIMEOUT (46)
- NOT IMPLEMENTED (47)
- REQUESTED A BAD VALUE (48)
- RESPONSE TOO BIG (49)
- GENERAL RESPONSE ERROR (50)
- SCRIPT NONZERO RETURN (51)
- SCRIPT NOT FOUND (52)
- SCRIPT LAUNCH ERROR (53)
- CONF FILE DOES NOT EXIST (54)
- CONF FILE ACCESS DENIED (55)
- INVALID CONF FILE (56)
- EIF INITIALIZATION FAILED (57)
- CANNOT OPEN FORMAT FILE (58)
- FORMAT FILE SYNTAX ERROR (59)
- REMOTE HOST UNAVAILABLE (60)

- EVENT LOG DOES NOT EXIST (61)
- PING FILE DOES NOT EXIST (62)
- NO PING DEVICE FILES (63)
- PING DEVICE LIST FILE MISSING (64)
- SNMP MISSING PASSWORD (65)
- DISABLED (66)
- URLS FILE NOT FOUND (67)
- XML PARSE ERROR (68)
- NOT INITIALIZED (69)
- ICMP SOCKETS FAILED (70)
- DUPLICATE CONF FILE (71)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

ERROR_CODE or ERRCODE

Last Collection Start attribute

Description

The most recent time a data collection of this group started.

Type

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

- NOT COLLECTED (069123119000000)
- NOT COLLECTED (000000000000000)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

LAST_COLLECTION_START or COLSTRT

Last Collection Finished attribute

Description

The most recent time a data collection of this group finished.

Туре

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

- NOT COLLECTED (069123119000000)
- NOT COLLECTED (00000000000000)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

LAST_COLLECTION_FINISHED or COLFINI

Last Collection Duration attribute

Description

The duration of the most recently completed data collection of this group in seconds.

Type

Real number (32-bit counter) with two decimal places of precision

Warehouse name

LAST_COLLECTION_DURATION or COLDURA

Average Collection Duration attribute

Description

The average duration of all data collections of this group in seconds.

Type

Real number (32-bit counter) with two decimal places of precision with

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

• NO DATA (-100)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

AVERAGE_COLLECTION_DURATION or COLAVGD

Refresh Interval attribute

Description

The interval at which this group is refreshed in seconds.

Type

Integer (32-bit counter)

Warehouse name

REFRESH_INTERVAL or REFRINT

Number of Collections attribute

Description

The number of times this group has been collected since agent start.

Type

Integer (32-bit counter)

Warehouse name

NUMBER_OF_COLLECTIONS or NUMCOLL

Cache Hits attribute

Description

The number of times an external data request for this group was satisfied from the cache.

Type

Integer (32-bit counter)

Warehouse name

CACHE_HITS or CACHEHT

Cache Misses attribute

Description

The number of times an external data request for this group was not available in the cache.

Type

Integer (32-bit counter)

Warehouse name

CACHE_MISSES or CACHEMS

Cache Hit Percent attribute

Description

The percentage of external data requests for this group that were satisfied from the cache.

Type

Real number (32-bit counter) with two decimal places of precision

Warehouse name

CACHE_HIT_PERCENT or CACHPCT

Intervals Skipped attribute

Description

The number of times a background data collection for this group was skipped because the previous collection was still running when the next one was due to start.

Type

Integer (32-bit counter)

Warehouse name

INTERVALS_SKIPPED or INTSKIP

Physical Disk attribute group

Information on the physical disks for this computer

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 Physical Disk attribute group:

Node attribute: This attribute is a key attribute.

Description

The managed system name of the agent.

Туре

String

Source

The source for this attribute is the agent.

Warehouse name

NODE

Timestamp attribute

Description

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

Туре

String

Source

The source for this attribute is the agent.

Warehouse name

TIMESTAMP

% Disk Read Time attribute

Description

The percentage of elapsed time that the selected disk drive is busy servicing read requests.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - PhysicalDisk $\times\$ Disk Read Time.

Warehouse name

PCT_DISK_READ_TIME or PERCENTDIS

% Disk Write Time attribute

Description

The percentage of elapsed time that the selected disk drive is busy servicing write requests.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - PhysicalDisk*\% Disk Write Time.

Warehouse name

PCT_DISK_WRITE_TIME or PERCENTDI1

% Disk Time attribute

Description

The percentage of elapsed time that the selected disk drive is busy servicing read or write requests.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - PhysicalDisk*\% Disk Time.

Warehouse name

PCT_DISK_TIME or PERCENTDI0

Disk Reads/sec attribute

Description

The average number of read operations that have occurred on a disk per second.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - PhysicalDisk*\Disk Reads/sec.

Warehouse name

DISKREADSPERSEC or DSKREADSEC

Disk Writes/sec attribute

Description

The average number of write operations that have occurred on a disk per second.

Туре

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - PhysicalDisk*\Disk Writes/sec.

Warehouse name

DISKWRITESPERSEC or DSKWRITSEC

Disk Transfers/sec attribute

Description

The average number of read and write operations that have occurred on a disk per second.

Type

Integer (32-bit gauge) with enumerated values. The strings are displayed in the

Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - PhysicalDisk \times Disk Transfers/sec.

Warehouse name

DISKTRANSFERSPERSEC or DSKXFERSEC

Disk Read Bytes/sec attribute

Description

The average number of bytes read from a disk per second.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - PhysicalDisk*\Disk Read Bytes/sec. Warehouse name

DISKREADBYTESPERSEC or DSKRBYTESE

Disk Write Bytes/sec attribute

Description

The average number of bytes written to a disk per second.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - PhysicalDisk*\Disk Write Bytes/sec.

Warehouse name

DISKWRITEBYTESPERSEC or DSKWBYTESE

Disk Bytes/sec attribute

Description

The rate at which bytes are transferred to or from a disk during read or write operations.

Type

Integer (64-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - PhysicalDisk*\Disk Bytes/sec.

Warehouse name

DISKBYTESPERSEC or DSKBYTESEC

Avg Disk Bytes/Read attribute

Description

The average number of bytes transferred from the disk during read perations.

Type

Integer (64-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - PhysicalDisk*\Avg. Disk Bytes/Read. Warehouse name

AVG_DISK_BYTES_PER_READ or AVGDISKBYT

Avg Disk Bytes/Write attribute

Description

Average number of bytes transferred to the disk during write operations.

Type

Integer (64-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - PhysicalDisk*\Avg. Disk Bytes/Write. Warehouse name

AVG_DISK_BYTES_PER_WRITE or AVGDISKBY1

Avg Disk Bytes/Transfer attribute

Description

Average number of bytes transferred to or from the disk during write or read operations.

Type

Integer (64-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - PhysicalDisk*\Avg. Disk Bytes/Transfer.

Warehouse name

AVG_DISK_BYTES_PER_TRANSFER or AVGDISKBY0

Name attribute: This attribute is a key attribute.

Description

The name of the instance.

Туре

Source

The source for this attribute is PerfMon. Warehouse name NAME

Physical Memory attribute group

Details about the Physical memory for the system

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 Physical Memory attribute group:

Node attribute: This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Source

The source for this attribute is the agent.

Warehouse name

NODE

Timestamp attribute

Description

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

Туре

String

Source

The source for this attribute is the agent.

Warehouse name

TIMESTAMP

Bank Label attribute

Description

Bank in which this memory is currently located.

Type

String

Source

The source for this attribute is WMI - ROOT\CIMV2\ Win32_PhysicalMemoryBankLabel.

Warehouse name

BANK_LABEL or BANKLABEL

Capacity (KB) attribute

Description

Size of the physical memory in kilobytes

Туре

Integer (64-bit counter) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: CapacityB / 1024.

Warehouse name

CAPACITY

Caption attribute

Description

Short description of this physical memory

Туре

String

Source

The source for this attribute is WMI - ROOT\CIMV2\ Win32_PhysicalMemoryCaption.

Warehouse name

CAPTION

Data Width attribute

Description

Width of data for this physical memory location

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - ROOT\CIMV2\

Win32_PhysicalMemoryDataWidth.

Warehouse name

DATA_WIDTH or DATAWIDTH

Description attribute

Description

Description of this physical memory

Туре

String

Source

The source for this attribute is WMI - ROOT\CIMV2\Win32_PhysicalMemoryDescription.

Warehouse name

DESCRIPTION or DESCRIPTIO

Hot Swappable attribute

Description

Boolean indicator to determine if this memory is hot swappable

Type

Integer with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in

parentheses. The following values are defined:

- TRUE (1)
- FALSE (0)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - ROOT\CIMV2\ Win32 PhysicalMemoryHotSwappable.

Warehouse name

HOT_SWAPPABLE or HOTSWAPPAB

Install Date attribute

Description

Date when this memory was installed

Type

Timestamp

Source

The source for this attribute is WMI - ROOT\CIMV2\

 $Win 32_Physical Memory Install Date.$

Warehouse name

INSTALL_DATE or INSTALLDAT

Manufacturer attribute

Description

Manufacturer of the physical memory

Туре

String

Source

The source for this attribute is WMI - ROOT\CIMV2\Win32_PhysicalMemoryManufacturer.

Warehouse name

MANUFACTURER or MANUFACTUR

Memory Type attribute

Description

Type of the physical memory

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - ROOT\CIMV2\ Win32_PhysicalMemoryMemoryType.

Warehouse name

MEMORY_TYPE or MEMORYTYPE

Model attribute

Description

Model of the physical memory

Type

String

Source

The source for this attribute is WMI - ROOT\CIMV2\ Win32_PhysicalMemoryModel.

Warehouse name

MODEL

Name attribute: This attribute is a key attribute.

Description

Name of the physical memory

Туре

String

Source

The source for this attribute is WMI - ROOT\CIMV2\Win32_PhysicalMemoryName.

Warehouse name

NAME

PoweredOn attribute

Value to indicate whether this memory is currently powered on.

Type

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

• TRUE (1)

• FALSE (0)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - ROOT\CIMV2\

Win32_PhysicalMemoryPoweredOn.

Warehouse name

POWEREDON

Removable attribute

Description

Flag that indicates whether or not this memory is removeable.

Туре

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

- TRUE (1)
- FALSE (0)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - ROOT\CIMV2\

Win32_PhysicalMemoryRemovable.

Warehouse name REMOVABLE

Replaceable attribute

Description

Flag that indicates whether or not this memory is replaceable.

Type

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

parentheses. The following values are defined:

- TRUE (1)
- FALSE (0)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - ROOT\CIMV2\

Win32_PhysicalMemoryReplaceable.

Warehouse name

REPLACEABLE or REPLACEABL

Serial Number attribute

Description

Serial Number for the physical memory

Type

String

Source

The source for this attribute is WMI - ROOT\CIMV2\

Win32_PhysicalMemorySerialNumber.

Warehouse name

SERIAL_NUMBER or SERIALNUMB

SKU attribute

Description

SKU for this physical memory

Type

String

Source

The source for this attribute is WMI - ROOT\CIMV2\

Win32_PhysicalMemorySKU.

Warehouse name

SKU

Speed attribute

Description

Speed for this memory.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - ROOT\CIMV2\ Win32_PhysicalMemorySpeed.

Warehouse name

SPEED

Status attribute

Description

Status of the memory.

Type

String

Source

The source for this attribute is WMI - ROOT\CIMV2\Win32_PhysicalMemoryStatus.

Warehouse name

STATUS

Tag attribute: This attribute is a key attribute.

Description

Tag for the memory.

Туре

String

Source

The source for this attribute is WMI - ROOT\CIMV2\Win32_PhysicalMemoryTag. Warehouse name

TAG

Process attribute group

Detailed process data for this system.

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 Process attribute group: **Node attribute: This attribute is a key attribute.**

Description

The managed system name of the agent.

Туре

String Source

uice

The source for this attribute is the agent.

Warehouse name

NODE

Timestamp attribute

Description

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

Туре

String

Source

The source for this attribute is the agent.

Warehouse name

TIMESTAMP

Pct Privileged Time attribute

Description

The percentage of elapsed time that threads for this process have spent executing code in Privileged Mode.

Туре

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Process*\% Privileged Time.

Warehouse name

PCT_PRIVILEGED_TIME or PRIVILEGED

% Processor Time attribute

Description

The percentage of elapsed time for which all of the threads of this process used the processor to execute instructions.

Туре

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Process $\times\$ Processor Time.

Warehouse name

PCT_PROCESSOR_TIME or PROCESSOR_

% User Time attribute

The percentage of elapsed time that threads for this process have spent executing code in User Mode.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Process $\times\$ User Time.

Warehouse name

PCT_USER_TIME or USER_TIME

Elapsed Time in seconds attribute

Description

The total elapsed time (in seconds) that this process has been running.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Process*\Elapsed Time.

Warehouse name

ELAPSED_TIME_IN_SECONDS or ELAPSED_TI

Handle Count attribute

Description

The total number of handles currently opened by this process.

Type

Integer (64-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Process*\Handle Count.

Warehouse name

HANDLE_COUNT or HANDLE_COU

Process ID attribute

Description

Unique identifier for this process.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Process*\ID Process.

Warehouse name

PROCESS_ID or ID_PROCESS

Page Faults/sec attribute

Description

The rate of Page Faults by the threads executing in this process. A page fault occurs when a thread refers to a virtual memory page that is not in its working set in main memory.

Type

Integer (64-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

• Value Exceeds Maximum (9223372036854775807)

• Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Process*\Page Faults/sec.

Warehouse name

PAGE_FAULTS_SEC or PAGE_FAULT

Page File (KB) attribute

Description

The current number of KB this process has used in the paging files. Paging files are used to store pages of memory used by the process that are not contained in other files.

Type

Integer (64-bit counter) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: Page_File_Bytes / 1024.

Warehouse name

PAGE_FILE_KBYTES or PAGEFILEKB

Page File Peak (KB) attribute

Description

The maximum number of KB this process has used in the paging files.

Type

Integer (64-bit counter) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: Page_File_Bytes / 1024.

Warehouse name

PAGE_FILE_KBYTES_PEAK or PAGEMAXKB

Pool Nonpaged (KB) attribute

Description

The number of KB in the Nonpaged Pool, a system memory area where space is acquired by operating system components as they accomplish their appointed tasks.

Type

Integer (64-bit counter) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: Pool_Nonpaged_Bytes / 1024.

Warehouse name

POOL_NONPAGED_KBYTES or POOLNONKB

Pool Paged (KB) attribute

Description

The number of KB in the Paged Pool, a system memory area where space is acquired by operating system components as they accomplish their appointed tasks.

Туре

Integer (64-bit counter) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: Pool_Paged_Bytes / 1024.

Warehouse name

POOL_PAGED_KBYTES or POOLPAGKB

Priority Base attribute

Description

The current base priority of this process. Threads within a process can raise and lower their base priority relative to the base priority of the process.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Process*\Priority Base.

Warehouse name

PRIORITY_BASE or PRIORITY_B

Private (KB) attribute

The current number of KB this process has allocated that cannot be shared with other processes.

Type

Integer (64-bit counter) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: Private_Bytes / 1024.

Warehouse name

PRIVATE_KBYTES or PRIVATEKBY

Thread Count attribute

Description

The number of threads currently active in this process.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Process*\Thread Count.

Warehouse name

THREAD_COUNT or THREAD_COU

Virtual (KB) attribute

Description

The current size in KB of the virtual address space the process is using.

Type

Integer (64-bit counter) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: Virtual_Bytes / 1024.

Warehouse name

VIRTUAL_KBYTES or VIRTUALKB

Virtual Peak (KB) attribute

Description

The maximum number of KB of virtual address space the process has used at any one time.

Type

Integer (64-bit counter) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

• Value Exceeds Maximum (9223372036854775807)

• Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: Virtual_Bytes_Peak / 1024.

Warehouse name

VIRTUAL_KBYTES_PEAK or VIRTUALKB0

Working Set (KB) attribute

Description

The current number of KB in the Working Set of this process.

Type

Integer (64-bit counter) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: Working_Set / 1024.

Warehouse name

WORKING_SET_KBYTES or WRKINGSEKB

Working Set Peak (KB) attribute

Description

The maximum number of KB in the Working Set of this process at any point in time.

Type

Integer (64-bit counter) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: Working_Set_Peak / 1024.

Warehouse name

WORKING_SET_PEAK_KBYTES or WRKINGSKBP

Name attribute: This attribute is a key attribute.

Description

The name of the instance.

Туре

String

Source

The source for this attribute is PerfMon.

Warehouse name

NAME

Processes attribute group

Data gathered from SNMP Object hrSWRunTable.

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 Processes attribute group:

Node attribute: This attribute is a key attribute.

Description

The managed system name of the agent.

Туре

String

Source

The source for this attribute is the agent.

Warehouse name

NODE

Timestamp attribute

Description

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

Туре

String

Source

The source for this attribute is the agent.

Warehouse name

TIMESTAMP

Process ID attribute: This attribute is a key attribute.

Description

A unique value for each piece of software running on the host. Wherever possible, make this the native, unique identification number for the system.

Type

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

• Value Exceeds Maximum (2147483647)

• Value Exceeds Minimum (-2147483648)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.25.4.2.1.1.index value.

Warehouse name

PROCESS_ID or PROCPID

Name attribute: This attribute is a key attribute.

Description

A textual description of this running piece of software, including the manufacturer, revision, and name by which it is commonly known.

Type

String

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.25.4.2.1.2.index value.

Warehouse name

NAME or PROCNAME

Path attribute

Description

A description of the location on long-term storage (for example, a disk drive) from which this software was loaded.

Туре

String

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.25.4.2.1.4.index value.

Warehouse name

PATH or PROCPATH

Parameters attribute

A description of the parameters supplied to this software when it was initially loaded.

Type

String

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.25.4.2.1.5.index value.

Warehouse name

PARAMETERS or PROCPARAM

Type attribute

Description

The type of this software.

Type

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

- unknown (1)
- operatingSystem (2)
- deviceDriver (3)
- application (4)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.25.4.2.1.6.index value.

Warehouse name TYPE or PROCTYPE

Status attribute

Description

The status of this running piece of software. Setting this value to invalid(4) causes this software to stop running and to be unloaded. Sets to other values are not valid.

Type

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

- running (1)
- runnable (2)
- notRunnable (3)
- invalid (4)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.25.4.2.1.7.index value.

Warehouse name

STATUS or PROCSTATUS

Cumulative CPU Time (s) attribute

Description

The number of seconds of the total system CPU resources consumed by this process. On a multi-processor system, this value can increment by more than one second in one second of real (wall clock) time.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.25.5.1.1.1.index value.

Warehouse name

CUMULATIVE_CPU_TIME or PROCCPUUTL

Memory Utilization KB attribute

Description

The total amount of real system memory allocated to this process.

Туре

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is SNMP - 1.3.6.1.2.1.25.5.1.1.2.index value.

Warehouse name

MEMORY_UTILIZATION_KB or PROCMEMUTL

Processor attribute group

Data gathered from Perfmon object Processor.

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 Processor attribute group: **Node attribute: This attribute is a key attribute.**

Description

The managed system name of the agent.

Type

String

Source

The source for this attribute is the agent.

Warehouse name

NODE

Timestamp attribute

Description

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

Туре

String Source

The source for this attribute is the agent.

Warehouse name

TIMESTAMP

% DPC Time attribute

Description

The percentage of processor time spent processing deferred procedure calls (DPCs) during the sample interval.

Type

Integer (32-bit gauge) with enumerated values. The strings are displayed in the

Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Processor $\times \$ DPC Time.

Warehouse name

PCT_DPC_TIME or DPC_TIME

% Interrupt Time attribute

Description

The percentage of processor time spent processing hardware interrupts during the sample interval.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Processor*\% Interrupt Time.

Warehouse name

PCT_INTERRUPT_TIME or INTERRUPT_

% Privileged Time attribute

Description

The percentage of processor time spent in privileged mode in non-idle threads.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Processor $\times\$ Privileged Time.

Warehouse name

PCT_PRIVILEGED_TIME or PRIVILEGED

% Processor Time attribute

Description

A percentage of the elapsed time that a processor is busy executing a non-idle thread.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Processor *\% Processor Time. Warehouse name

PCT_PROCESSOR_TIME or PROCESSOR_

% User Time attribute

Description

The percentage of processor time spent in User Mode in non-idle threads. All application code and subsystem code run in User Mode.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Processor $\times\$ User Time.

Warehouse name

PCT_USER_TIME or USER_TIME

Interrupts/sec attribute

Description

The number of device interrupts the processor is experiencing.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Processor*\Interrupts/sec.

Warehouse name

INTERRUPTS_SEC or INTERRUPTS

Name attribute: This attribute is a key attribute.

Description

The name of the instance.

Туре

String

Source

The source for this attribute is PerfMon.

Warehouse name

NAME

Processor Details attribute group

Details about the processors installed on this system

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 Processor Details attribute group:

Node attribute: This attribute is a key attribute.

The managed system name of the agent.

Туре

String

Source

The source for this attribute is the agent.

Warehouse name

NODE

Timestamp attribute

Description

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

Type

String

Source

The source for this attribute is the agent.

Warehouse name

TIMESTAMP

Architecture attribute

Description

Architecture of the processor.

Туре

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

- x86 (0)
- MIPS (1)
- Alpha (2)
- PowerPC (3)
- Itanium (6)
- x64 (9)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - ROOT\CIMV2\

Win32_ProcessorArchitecture.

Warehouse name

ARCHITECTURE or ARCHITECTU

Availability attribute

Description

Availability of the processor.

Туре

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

- Other (1)
- Unknown (2)
- Running (3)
- Warning (4)
- In Test (5)
- Not Applicable (6)
- Power Off (7)
- Off Line (8)
- Off Duty (9)
- Degraded (10)
- Not Installed (11)

- Install Error (12)
- Power Save Unknown (13)
- Power Save Low Power Mode (14)
- Power Save Standby (15)
- Power Cycle (16)
- Power Save Warning (17)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - ROOT\CIMV2\ Win32_ProcessorAvailability.

Warehouse name

AVAILABILITY or AVAILABILI

Caption attribute

Description

Caption for this processor.

Type

String

Source

The source for this attribute is WMI - ROOT\CIMV2\Win32_ProcessorCaption.

Warehouse name

CAPTION

Configuration Manager Error Code attribute

Description

Error code from the configuration manager

Туре

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

- Device is working correctly. (0)
- Device is not configured correctly. (1)
- Windows cannot load the driver for this device. (2)
- Driver for this device might be corrupted or the system might be low on memory or other resources. (3)
- Device is not working correctly. One of the device drivers or the registry might be corrupted. (4)
- Driver for the device requires a resource that Windows cannot manage. (5)
- Boot configuration for the device conflicts with other devices. (6)
- Cannot filter. (7)
- Driver loader for the device is missing. (8)
- Device is not working correctly. The controlling firmware is incorrectly reporting the resources for the device. (9)
- Device cannot start. (10)
- Device failed. (11)
- Device cannot find enough free resources to use. (12)
- Windows cannot verify the resources for the device. (13)
- Device cannot work correctly until the computer is restarted. (14)
- Device is not working correctly because of a possible re-enumeration problem. (15)
- Windows cannot identify all of the resources that the device uses. (16)
- Device is requesting an unknown resource type. (17)
- Device drivers must be reinstalled. (18)
- Failure using the VxD loader. (19)
- Registry might be corrupted. (20)

- System failure. If changing the device driver is ineffective, see the hardware documentation. Windows is removing the device. (21)
- Device is disabled. (22)
- System failure. If changing the device driver is ineffective, see the hardware documentation. (23)
- Device is not present, not working correctly, or does not have all of its drivers installed. (24)
- Windows is still setting up the device. (25)
- Windows is still setting up the device. (26)
- Device does not have valid log configuration. (27)
- Device drivers are not installed. (28)
- Device is disabled. The device firmware did not provide the required resources. (29)
- Device is using an IRQ resource that another device is using. (30)
- Device is not working correctly. Windows cannot load the required device drivers. (31)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - ROOT\CIMV2\

Win32_ProcessorConfigManagerErrorCode.

Warehouse name

CONFIGURATION_MANAGER_ERROR_CODE or CONFIGMANA

CPU Status attribute

Description

Status of this CPU.

Туре

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

- Unknown (0)
- CPU Enabled (1)
- CPU Disabled by User via BIOS Setup (2)
- CPU Disabled by BIOS (POST Error) (3)
- CPU Is Idle (4)
- Reserved (5)
- Reserved (6)
- Other (7)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - ROOT\CIMV2\Win32_ProcessorCpuStatus.

Warehouse name

CPU_STATUS or CPUSTATUS

Description attribute

Description

Descriptive text about this processor.

Туре

String

Source

The source for this attribute is WMI - ROOT\CIMV2\

Win32_ProcessorDescription.

Warehouse name

DESCRIPTION or DESCRIPTIO Name attribute: This attribute is a key attribute.

The processor name.

Type String

Source

The source for this attribute is WMI - ROOT\CIMV2\Win32_ProcessorName. Warehouse name

NAME

Processor Utilization Total attribute group

A Summary report that combines the data for individual processors on the system

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 Processor Utilization Total attribute group:

Node attribute: This attribute is a key attribute.

Description

The managed system name of the agent.

Туре

String Source

The source for this attribute is the agent.

Warehouse name

NODE

Timestamp attribute

Description

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

Туре

String

Source The source for this attribute is the agent.

Warehouse name

TIMESTAMP

% CPU Utilization (Max) attribute

Description

This is the maximum percentage load, over the last minute, of the the system.

Туре

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - nullmax.

Warehouse name

MAXIMUM

% CPU Utilization (Min) attribute

Description

This is the minimum percentage load, over the last minute, of the the system.

Туре

Integer (32-bit gauge) with enumerated values. The strings are displayed in the

Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - nullmin.

Warehouse name

MINIMUM

% CPU Utilization (Avg) attribute

Description

This is the percentage of processor utilization on the system, averaged across all processors.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - nullave.

Warehouse name

AVERAGE

% CPU Idle (Avg) attribute

Description

This is the percentage of processor idle time on the system, averaged across all processors.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: 100 - Average.

Warehouse name

AVERAGE_IDLE or AI

System attribute group

The system object type includes those counters that apply to all processors on the computer collectively. These counters represent the activity of all processors on the computer.

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 System attribute group:

Node attribute: This attribute is a key attribute.

Description

The managed system name of the agent.
Type

String

Source

The source for this attribute is the agent.

Warehouse name

NODE

Timestamp attribute

Description

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

Туре

String

Source

The source for this attribute is the agent.

Warehouse name

TIMESTAMP

Context Switches/sec attribute

Description

The rate of switches from one thread to another.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - System*\Context Switches/sec.

Warehouse name

CONTEXT_SWITCHES_SEC or CONTEXT_SW

Exception Dispatches/sec attribute

Description

The rate of exceptions dispatched by the system.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - System*\Exception Dispatches/sec.

Warehouse name

EXCEPTION_DISPATCHES_SEC or EXCEPTION_

File Control Bytes/sec attribute

Description

An aggregate of bytes transferred for all file system operations that are neither reads nor writes.

Type

Integer (64-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Source

The source for this attribute is Perfmon - System*\File Control Bytes/sec.

Warehouse name

FILE_CONTROL_BYTES_SEC or FILE_CONTR

File Control Operations/sec attribute

Description

An aggregate of all file system operations that are neither reads nor writes.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - System*\File Control Operations/sec. Warehouse name

FILE_CONTROL_OPERATIONS_SEC or FILE_CONT0

File Data Operations/sec attribute

Description

The rate that the computer is issuing read and write operations to file system devices.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - System*\File Data Operations/sec.

Warehouse name

FILE_DATA_OPERATIONS_SEC or FILE_DATA_

File Read Bytes/sec attribute

Description

An aggregate of the bytes transferred for all the file system read operations on the computer.

Type

Integer (64-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - System*\File Read Bytes/sec.

Warehouse name

FILE_READ_BYTES_SEC or FILE_READ_

File Read Operations/sec attribute

Description

An aggregate of all the file system read operations on the computer.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - System*\File Read Operations/sec.

Warehouse name

FILE_READ_OPERATIONS_SEC or FILE_READ0

File Write Bytes/sec attribute

Description

An aggregate of the bytes transferred for all the file system write operations on the computer.

Туре

Integer (64-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - System*\File Write Bytes/sec.

Warehouse name

FILE_WRITE_BYTES_SEC or FILE_WRITE

File Write Operations/sec attribute

Description

An aggregate of all the file system write operations on the computer.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - System*\File Write Operations/sec. Warehouse name

FILE_WRITE_OPERATIONS_SEC or FILE_WRIT0

File Emulations/sec attribute

Description

The rate of floating emulations performed by the system.

Type

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

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

Source

The source for this attribute is Perfmon - System*\Floating Emulations/sec.

Warehouse name

FLOATING_EMULATIONS_SEC or FLOATING_E

Total Processes attribute

Description

Total processes running on the system.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - System*\Processes.

Warehouse name

TOTAL_PROCESSES or PROCESSES

System Up Time (s) attribute

Description

Total time (in seconds) that the computer has been operational since it was last started.

Type

Integer (64-bit gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - System*\System Up Time.

Warehouse name

SYSTEM_UP_TIME_SEC or SYSTEM_UP_

System Up Time (d) attribute

Description

Total time (in days) that the computer has been operational since it was last started.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: System_Up_Time_sec / (24*60*60).

Warehouse name

SYSTEM_UP_TIME_DAYS or SYSTEM_UPD

Terminal Services attribute group

Terminal Services information.

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 Terminal Services attribute group:

Node attribute: This attribute is a key attribute.

Description

The managed system name of the agent.

Туре

String

Source

The source for this attribute is the agent.

Warehouse name

NODE

Timestamp attribute

Description

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

Туре

String

Source

The source for this attribute is the agent.

Warehouse name

TIMESTAMP

Active Sessions attribute

Description

Current number of active terminal services sessions.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Terminal Services*\Active Sessions. Warehouse name

ACTIVE_SESSIONS or ACTIVE_SES

Inactive Sessions attribute

Description

Current number of inactive terminal services sessions.

Туре

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Terminal Services*\Inactive Sessions.

Warehouse name

INACTIVE_SESSIONS or INACTIVE_S

Total Sessions attribute

Description

Total terminal services sessions connected.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: Active_Sessions + Inactive_Sessions.

Warehouse name

TOTAL_SESSIONS or TOTAL_SESS

% Active Sessions attribute

Description

Percentage of active sessions

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: Active_Sessions % Total_Sessions.

Warehouse name

ACTIVE_SESSIONS_PCT or ACTIVE_SE0

% Inactive Sessions attribute

Description

Percentage of sessions that are not active

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: 100 - Active_Sessions_Pct.

Warehouse name

INACTIVE_SESSIONS_PCT or INACTIVE_0

Terminal Services Session attribute group

Data gathered from Perfmon object Terminal Services Session.

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 Terminal Services Session attribute group:

Node attribute: This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Source

The source for this attribute is the agent.

Warehouse name

NODE

Timestamp attribute

Description

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

Туре

String

Source

The source for this attribute is the agent.

Warehouse name

TIMESTAMP

% Privileged Time attribute

Description

Percentage of the privileged time for the processor used by this session.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Terminal Services Session $\times \$ Privileged Time.

Warehouse name

PCT_PRIVILEGED_TIME or PRIVILEGED

% Processor Time attribute

Description

Percentage of the processor time used by this session.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Terminal Services Session $\times \$ Processor Time.

Warehouse name

PCT_PROCESSOR_TIME or PROCESSOR_

% User Time attribute

Description

Percentage of the user time for the processor used by this session.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Terminal Services Session *\% User Time.

Warehouse name

PCT_USER_TIME or USER_TIME

Name attribute: This attribute is a key attribute.

Description

The name of the instance.

Туре

String

Source

The source for this attribute is PerfMon.

Warehouse name NAME

Terminal Services Session Memory attribute group

Data gathered from Perfmon object Terminal Services Session.

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 Terminal Services Session Memory attribute group:

Node attribute: This attribute is a key attribute.

Description

The managed system name of the agent.

Туре

String

Source

The source for this attribute is the agent.

Warehouse name

NODE

Timestamp attribute

Description

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

Туре

String

Source

The source for this attribute is the agent.

Warehouse name

TIMESTAMP

Name attribute: This attribute is a key attribute.

Description

This is the name of the instance

Туре

Source

The source for this attribute is WMI - ROOT\CIMV2\

Win32_PerfRawData_TermService_TerminalServicesSessionName.

Warehouse name

NAME

Private Memory (KB) attribute

Description

The current number of KB this process has allocated that cannot be shared with other processes.

Type

Integer (64-bit counter) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: Private_Bytes / 1024.

Warehouse name

PRIVATE_KBYTES or PRIVATEKBY

Virtual Memory (KB) attribute

Description

The current size in bytes of the virtual address space the process is using.

Type

Integer (64-bit counter) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: Virtual_Bytes / 1024.

Warehouse name

VIRTUAL_KBYTES or VIRTUALKB

Virtual Memory Peak (KB) attribute

Description

The maximum number of KB of virtual address space the process has used at any one time.

Type

Integer (64-bit counter) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: Virtual_Bytes_Peak / 1024.

Warehouse name

VIRTUAL_KBYTES_PEAK or VIRTUALKB0

Working Set (KB) attribute

Description

The current number of KB in the Working Set of this process.

Type

Integer (64-bit counter) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: Working_Set / 1024.

Warehouse name

WORKING_SET_KBYTES or WRKINGSEKB

Working Set Peak (KB) attribute

Description

The maximum number of KB in the Working Set of this process at any point in time.

Туре

Integer (64-bit counter) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: Working_Set_Peak / 1024.

Warehouse name

WORKING_SET_PEAK_KBYTES or WRKINGSKBP

Thread Pool Status attribute group

The Thread Pool Status attribute group contains information that reflects the status of the internal thread pool used to collect data asynchronously.

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 Thread Pool Status attribute group:

Node attribute: This attribute is a key attribute.

Description

The managed system name of the agent.

Туре

String Source

The source for this attribute is the agent.

Warehouse name

NODE

Timestamp attribute

Description

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

Type

String

Source

The source for this attribute is the agent.

Warehouse name

TIMESTAMP

Thread Pool Size attribute

Description

The number of threads currently existing in the thread pool.

Type

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

- NO DATA (-1)
- NO DATA (-100)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

THREAD_POOL_SIZE or THPSIZE

Thread Pool Max Size attribute

Description

The maximum number of threads allowed to exist in the 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 that are shown in parentheses. The following values are defined:

- NO DATA (-1)
- NO DATA (-100)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

THREAD_POOL_MAX_SIZE or TPMAXSZ

Thread Pool Active Threads attribute

Description

The number of threads in the thread pool currently active doing work.

Type

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

- NO DATA (-1)
- NO DATA (-100)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

THREAD_POOL_ACTIVE_THREADS or TPACTTH

Thread Pool Avg Active Threads attribute

Description

The average number of threads in the thread pool simultaneously active doing work.

Type

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

- NO DATA (-1)
- NO DATA (-100)

Warehouse name

THREAD_POOL_AVG_ACTIVE_THREADS or TPAVGAT

Thread Pool Min Active Threads attribute

Description

The smallest number of threads in the thread pool that have simultaneously been active doing work.

Type

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

- NO DATA (-1)
- NO DATA (-100)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

THREAD_POOL_MIN_ACTIVE_THREADS or TPMINAT

Thread Pool Max Active Threads attribute

Description

The peak number of threads in the thread pool that have simultaneously been active doing work.

Type

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

- NO DATA (-1)
- NO DATA (-100)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

THREAD_POOL_MAX_ACTIVE_THREADS or TPMAXAT

Thread Pool Queue Length attribute

Description

The number of jobs currently waiting in the thread pool queue.

Type

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

- NO DATA (-1)
- NO DATA (-100)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

THREAD_POOL_QUEUE_LENGTH or TPQLGTH

Thread Pool Avg Queue Length attribute

Description

The average length of the thread pool queue during this run.

Type

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

• NO DATA (-1)

• NO DATA (-100)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

THREAD_POOL_AVG_QUEUE_LENGTH or TPAVGQL

Thread Pool Min Queue Length attribute

Description

The minimum length the thread pool queue has reached.

Type

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

- NO DATA (-1)
- NO DATA (-100)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

THREAD_POOL_MIN_QUEUE_LENGTH or TPMINQL

Thread Pool Max Queue Length attribute

Description

The peak length the thread pool queue has reached.

Type

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

- NO DATA (-1)
- NO DATA (-100)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

THREAD_POOL_MAX_QUEUE_LENGTH or TPMAXQL

Thread Pool Avg Job Wait attribute

Description

The average time a job spends waiting on the thread pool queue in seconds.

Type

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

- NO DATA (-1)
- NO DATA (-100)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

THREAD_POOL_AVG_JOB_WAIT or TPAVJBW

Thread Pool Total Jobs attribute

Description

The number of jobs completed by all threads in the pool since agent start.

Type

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

- NO DATA (-1)
- NO DATA (-100)

Warehouse name

THREAD_POOL_TOTAL_JOBS or TPTJOBS

User Accounts attribute group

User accounts defined on this computer

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 User Accounts attribute group: Node attribute: This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Source

The source for this attribute is the agent.

Warehouse name

NODE

Timestamp attribute

Description

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

Type

String

Source

The source for this attribute is the agent.

Warehouse name

TIMESTAMP

Account Type attribute

Description

Type of account defined.

Type

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

- Temporary (256)
- Normal (512)
- Inter-Domain (2048)
- Workstation (4096)
- Server (8192)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - ROOT\CIMV2\

Win32_UserAccountAccountType.

Warehouse name

ACCOUNT_TYPE or ACCOUNTTYP

Description attribute

Description

Description for this account.

Туре

String

Source

The source for this attribute is WMI - ROOT\CIMV2\

Win32_UserAccountDescription.

Warehouse name

DESCRIPTION or DESCRIPTIO

Disabled attribute

Description

Flag to indicate whether or not this account is disabled.

Type

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

- TRUE (-1)
- TRUE (1)
- FALSE (0)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - ROOT\CIMV2\Win32_UserAccountDisabled.

Warehouse name

DISABLED

Domain attribute: This attribute is a key attribute.

Description

Domain information for this account.

Type

String

Source

The source for this attribute is WMI - ROOT\CIMV2\Win32_UserAccountDomain.

Warehouse name

DOMAIN

Full Name attribute

Description

Full name of this user.

Туре

String

Source

The source for this attribute is WMI - ROOT\CIMV2\Win32 UserAccountFullName.

win52_OserAccountrumvame.

Warehouse name

FULL_NAME or FULLNAME

LocalAccount attribute

Description

Flag to indicate whether or not this is a local account.

Type

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

- TRUE (-1)
- TRUE (1)
- FALSE (0)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - ROOT\CIMV2\

Win32_UserAccountLocalAccount.

Warehouse name

LOCALACCOUNT or LOCALACCOU

Lockout attribute

Description

Flag to indicate whether this user is locked out.

Type

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

- TRUE (-1)
- TRUE (1)
- FALSE (0)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - ROOT\CIMV2\Win32_UserAccountLockout.

Warehouse name

LOCKOUT

Name attribute: This attribute is a key attribute.

Description

User name for this account..

Type

String

Source

The source for this attribute is WMI - ROOT\CIMV2\Win32_UserAccountName. Warehouse name

NAME

Is Password Changeable attribute

Description

Flag to indicate whether the password for this account can be changed.

Type

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

- TRUE (-1)
- TRUE (1)
- FALSE (0)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - ROOT\CIMV2\

Win32_UserAccountPasswordChangeable.

Warehouse name

IS_PASSWORD_CHANGEABLE or PASSWORDCH

Does Password Expire attribute

Description

Flag to indicate whether the password for this account will expire.

Type

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

- TRUE (-1)
- TRUE (1)
- FALSE (0)

Source

The source for this attribute is WMI - ROOT\CIMV2\

Win32_UserAccountPasswordExpires.

Warehouse name

DOES_PASSWORD_EXPIRE or PASSWORDEX

Is Password Required attribute

Description

Indicates whether this account requires a password.

Type

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

- TRUE (-1)
- TRUE (1)
- FALSE (0)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - ROOT\CIMV2\ Win32_UserAccountPasswordRequired.

Warehouse name

IS PASSWORD REQUIRED or PASSWORDRE

Status attribute

Description

Status of this account.

Type

String

Source

The source for this attribute is WMI - ROOT\CIMV2\Win32_UserAccountStatus. Warehouse name

STATUS

Virtual Memory attribute group

The Memory object type includes those counters that describe the behavior of the virtual memory on the computer. Virtual memory might exceed real memory size, causing page traffic as virtual pages are moved between disk and real memory.

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 Virtual Memory attribute group:

Node attribute: This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Source

The source for this attribute is the agent.

Warehouse name

NODE

Timestamp attribute Description

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

Туре

String

Source

The source for this attribute is the agent.

Warehouse name

TIMESTAMP

% Committed Bytes in use attribute

Description

The ratio of Committed Bytes to the Commit Limit. Committed memory is the physical memory in use for which space has been reserved in the paging file in case it needs to be written to disk. This counter displays the current percentage value.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Memory *\% Committed Bytes In Use. Warehouse name

PCT_COMMITTED_BYTES_IN_USE or COMMITTED_

Available Virtual Memory (KB) attribute

Description

Displays the size of the virtual memory currently on the Zeroed, Free, and Standby lists.

Type

Integer (64-bit counter) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Memory*\Available KBytes.

Warehouse name

AVAILABLE_KBYTES or AVAILABLE0

Available Cache (KB) attribute

Description

Measures the number of KB currently in use by the system cache.

Type

Integer (64-bit counter) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Source

The source for this attribute is derived: Cache_Bytes / 1024.

Warehouse name

CACHE_KBYTES or CACHEKBYTE

Cache KBytes Peak attribute

Description

Measures the maximum number of KB used by the system cache.

Type

Integer (64-bit counter) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: Cache_Bytes_Peak / 1024.

Warehouse name

CACHE_KBYTES_PEAK or CACHEKBYT0

Cache Faults/sec attribute

Description

Cache Faults occur when the Cache manager does not find a page for a file in the immediate Cache and must ask the memory manager to locate the page elsewhere in memory or on the disk so that it can be loaded into the immediate cache.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Memory*\Cache Faults/sec.

Warehouse name

CACHE_FAULTS_SEC or CACHE_FAUL

Committed (KB) attribute

Description

The size of virtual memory (in KB) that has been committed (not just reserved).

Туре

Integer (64-bit counter) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:

- Value Exceeds Maximum (9223372036854775807)
- Value Exceeds Minimum (-9223372036854775808)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: Committed_Bytes / 1024.

Warehouse name

COMMITTED_KBYTES or COMMITTEK0

Free System Page Table Entries attribute

Description

The number of Page Table Entries not currently in use by the system.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Memory*\Free System Page Table Entries.

Warehouse name

FREE_SYSTEM_PAGE_TABLE_ENTRIES or FREE_SYSTE

Page Faults/sec attribute

Description

A count of the Page Faults in the processor. A page fault occurs when a process refers to a virtual memory page that is not in its Working Set in main memory.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Memory*\Page Faults/sec.

Warehouse name

PAGE_FAULTS_SEC or PAGE_FAULT

Page Reads/sec attribute

Description

The number of times the disk was read to retrieve pages of virtual memory necessary to resolve page faults. Multiple pages can be read during a disk read operation.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Memory*\Page Reads/sec.

Warehouse name

PAGE_READS_SEC or PAGE_READS

Pages Input/sec attribute

Description

The number of pages read from the disk to resolve memory references to pages that were not in memory at the time of the reference.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Memory*\Pages Input/sec.

Warehouse name

PAGES_INPUT_SEC or PAGES_INPU

Pages Output/sec attribute

Description

The number of pages that are written to disk because the pages have been modified in main memory.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Memory*\Pages Output/sec.

Warehouse name

PAGES_OUTPUT_SEC or PAGES_OUTP

Page Writes/sec attribute

Description

A count of the number of times pages have been written to the disk because they were changed since last retrieved. Each of these write operations can transfer a number of pages.

Type

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

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is Perfmon - Memory*\Page Writes/sec.

Warehouse name

PAGE_WRITES_SEC or PAGE_WRITE

Pages per sec attribute

Description

The number of pages read from the disk or written to the disk to resolve memory references to pages that were not in memory at the time of the reference.

Type

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

• Value Exceeds Maximum (2147483647)

• Value Exceeds Minimum (-2147483648)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is derived: Pages_Output_sec + Pages_Input_sec.

Warehouse name

PAGES_PER_SEC or PAGE_SEC

WIN Performance Object Status attribute group

The Performance Object Status attribute group contains information that reflects the status of other attribute groups so you can see the status of all of the performance objects that make up this application all at once. Each of these other performance attribute groups is represented by a row in this table (or other type of view). The status for an attribute group reflects the result of the last attempt to collect data for that attribute group, which allows you to see whether the agent is performing correctly. Unlike other attribute groups, the Performance Object Status attribute group does not reflect the state of the monitored application. This attribute group is most often used to determine why data is not available for one of the performance attribute groups.

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 WIN Performance Object Status attribute group:

Node attribute: This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Source

The source for this attribute is the agent.

Warehouse name NODE

Timestamp attribute

Description

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

Type

String

Source

The source for this attribute is the agent.

Warehouse name

TIMESTAMP

Query Name attribute: This attribute is a key attribute.

Description

The name of the attribute group.

Туре

String Warehouse name

QUERY_NAME or ATTRGRP

Object Name attribute

Description

The name of the performance object.

Type

String Warehouse name OBJECT_NAME or OBJNAME Object Type attribute

Description

The type of the performance object.

Type

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

- WMI (0)
- PERFMON (1)
- WMI ASSOCIATION GROUP (2)
- JMX (3)
- SNMP (4)
- SHELL COMMAND (5)
- JOINED GROUPS (6)
- CIMOM (7)
- CUSTOM (8)
- ROLLUP DATA (9)
- WMI REMOTE DATA (10)
- LOG FILE (11)
- JDBC (12)
- CONFIG DISCOVERY (13)
- NT EVENT LOG (14)
- FILTER (15)
- SNMP EVENT (16)
- PING (17)
- DIRECTOR DATA (18)
- DIRECTOR EVENT (19)
- SSH REMOTE SHELL COMMAND (20)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

OBJECT_TYPE or OBJTYPE

Object Status attribute

Description

The status of the performance object.

Type

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

- ACTIVE (0)
- INACTIVE (1)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

OBJECT_STATUS or OBJSTTS

Error Code attribute

Description

The error code that is associated with the query.

Type

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

- NO ERROR (0)
- GENERAL ERROR (1)
- OBJECT NOT FOUND (2)
- COUNTER NOT FOUND (3)

- NAMESPACE ERROR (4)
- OBJECT CURRENTLY UNAVAILABLE (5)
- COM LIBRARY INIT FAILURE (6)
- SECURITY INIT FAILURE (7)
- PROXY SECURITY FAILURE (9)
- NO INSTANCES RETURNED (10)
- ASSOCIATOR QUERY FAILED (11)
- REFERENCE QUERY FAILED (12)
- NO RESPONSE RECEIVED (13)
- CANNOT FIND JOINED QUERY (14)
- CANNOT FIND JOIN ATTRIBUTE IN QUERY 1 RESULTS (15)
- CANNOT FIND JOIN ATTRIBUTE IN QUERY 2 RESULTS (16)
- QUERY 1 NOT A SINGLETON (17)
- QUERY 2 NOT A SINGLETON (18)
- NO INSTANCES RETURNED IN QUERY 1 (19)
- NO INSTANCES RETURNED IN QUERY 2 (20)
- CANNOT FIND ROLLUP QUERY (21)
- CANNOT FIND ROLLUP ATTRIBUTE (22)
- FILE OFFLINE (23)
- NO HOSTNAME (24)
- MISSING LIBRARY (25)
- ATTRIBUTE COUNT MISMATCH (26)
- ATTRIBUTE NAME MISMATCH (27)
- COMMON DATA PROVIDER NOT STARTED (28)
- CALLBACK REGISTRATION ERROR (29)
- MDL LOAD ERROR (30)
- AUTHENTICATION FAILED (31)
- CANNOT RESOLVE HOST NAME (32)
- SUBNODE UNAVAILABLE (33)
- SUBNODE NOT FOUND IN CONFIG (34)
- ATTRIBUTE ERROR (35)
- CLASSPATH ERROR (36)
- CONNECTION FAILURE (37)
- FILTER SYNTAX ERROR (38)
- FILE NAME MISSING (39)
- SQL QUERY ERROR (40)
- SQL FILTER QUERY ERROR (41)
- SQL DB QUERY ERROR (42)
- SQL DB FILTER QUERY ERROR (43)
- PORT OPEN FAILED (44)
- ACCESS DENIED (45)
- TIMEOUT (46)
- NOT IMPLEMENTED (47)
- REQUESTED A BAD VALUE (48)
- RESPONSE TOO BIG (49)
- GENERAL RESPONSE ERROR (50)
- SCRIPT NONZERO RETURN (51)
- SCRIPT NOT FOUND (52)
- SCRIPT LAUNCH ERROR (53)
- CONF FILE DOES NOT EXIST (54)
- CONF FILE ACCESS DENIED (55)
- INVALID CONF FILE (56)
- EIF INITIALIZATION FAILED (57)
- CANNOT OPEN FORMAT FILE (58)
- FORMAT FILE SYNTAX ERROR (59)
- REMOTE HOST UNAVAILABLE (60)

- EVENT LOG DOES NOT EXIST (61)
- PING FILE DOES NOT EXIST (62)
- NO PING DEVICE FILES (63)
- PING DEVICE LIST FILE MISSING (64)
- SNMP MISSING PASSWORD (65)
- DISABLED (66)
- URLS FILE NOT FOUND (67)
- XML PARSE ERROR (68)
- NOT INITIALIZED (69)
- ICMP SOCKETS FAILED (70)
- DUPLICATE CONF FILE (71)

Warehouse name

ERROR_CODE or ERRCODE

Last Collection Start attribute

Description

The most recent time a data collection of this group started.

Type

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

- NOT COLLECTED (069123119000000)
- NOT COLLECTED (000000000000000)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

LAST_COLLECTION_START or COLSTRT

Last Collection Finished attribute

Description

The most recent time a data collection of this group finished.

Туре

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

- NOT COLLECTED (0691231190000000)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

LAST_COLLECTION_FINISHED or COLFINI

Last Collection Duration attribute

Description

The duration of the most recently completed data collection of this group in seconds.

Type

Real number (32-bit counter) with two decimal places of precision

Warehouse name

LAST_COLLECTION_DURATION or COLDURA

Average Collection Duration attribute

Description

The average duration of all data collections of this group in seconds.

Type

Real number (32-bit counter) with two decimal places of precision with

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

• NO DATA (-100)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

AVERAGE_COLLECTION_DURATION or COLAVGD

Refresh Interval attribute

Description

The interval at which this group is refreshed in seconds.

Type

Integer (32-bit counter)

Warehouse name

REFRESH_INTERVAL or REFRINT

Number of Collections attribute

Description

The number of times this group has been collected since agent start.

Туре

Integer (32-bit counter)

Warehouse name

NUMBER_OF_COLLECTIONS or NUMCOLL

Cache Hits attribute

Description

The number of times an external data request for this group was satisfied from the cache.

Type

Integer (32-bit counter)

Warehouse name

CACHE_HITS or CACHEHT

Cache Misses attribute

Description

The number of times an external data request for this group was not available in the cache.

Type

Integer (32-bit counter)

Warehouse name

CACHE_MISSES or CACHEMS

Cache Hit Percent attribute

Description

The percentage of external data requests for this group that were satisfied from the cache.

Type

Real number (32-bit counter) with two decimal places of precision

Warehouse name

CACHE_HIT_PERCENT or CACHPCT

Intervals Skipped attribute

Description

The number of times a background data collection for this group was skipped because the previous collection was still running when the next one was due to start.

Type

Integer (32-bit counter)

Warehouse name

INTERVALS_SKIPPED or INTSKIP

Windows Services attribute group

Data represents a service on a computer system running Windows. **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 Windows Services attribute group:

Node attribute: This attribute is a key attribute.

Description

The managed system name of the agent.

Туре

String Source

The source for this attribute is the agent.

Warehouse name

NODE

Timestamp attribute

Description

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

Туре

String

Source

The source for this attribute is the agent.

Warehouse name

TIMESTAMP

Pause Allowed attribute

Description

Service can be paused.

Туре

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

- TRUE (-1)
- FALSE (0)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - root\CIMV2\Win32_ServiceAcceptPause. Warehouse name

PAUSE_ALLOWED or ACCEPTPAUS

Stop Allowed attribute

Description

Service can be stopped.

Туре

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

- TRUE (-1)
- FALSE (0)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - root\CIMV2\Win32_ServiceAcceptStop.

Warehouse name

STOP_ALLOWED or ACCEPTSTOP

Caption attribute

Description

Short description of the service.

Туре

String Source

Juice

The source for this attribute is WMI - root\CIMV2\Win32_ServiceCaption.

Warehouse name

CAPTION

Description attribute

Description

Description of the service.

Туре

String

Source

The source for this attribute is WMI - root\CIMV2\Win32_ServiceDescription.

Warehouse name

DESCRIPTION or DESCRIPTIO

Allow Desktop Interaction attribute

Description

Service can create or communicate with windows on the desktop.

Туре

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

- TRUE (-1)
- FALSE (0)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - root\CIMV2\

Win32_ServiceDesktopInteract.

Warehouse name

DESKTOPINTERACT or DESKTOPINT

Display Name attribute

Description

Display name of the service.

Туре

String

Source

The source for this attribute is WMI - root\CIMV2\Win32_ServiceDisplayName. Warehouse name

DISPLAY_NAME or DISPLAYNAM

Exit Code attribute

Description

Windows error code that defines errors encountered in starting or stopping the service.

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 that are shown in parentheses. The following values are defined:

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

Source

The source for this attribute is WMI - root\CIMV2\Win32_ServiceExitCode.

Warehouse name

EXIT_CODE or EXITCODE

Name attribute: This attribute is a key attribute.

Description

Unique identifier of the service that provides an indication of the functionality that is managed.

Type

String

Source

The source for this attribute is WMI - root\CIMV2\Win32_ServiceName. Warehouse name

NAME

Path Name attribute

Description

Fully-qualified path to the service binary file that implements the service.

Type

String

Source

The source for this attribute is WMI - root\CIMV2\Win32_ServicePathName. Warehouse name

PATH NAME or PATHNAME

Process ID attribute

Description

Process identifier of the service.

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 that are shown in parentheses. The following values are defined:

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - root\CIMV2\Win32_ServiceProcessId.

Warehouse name

PROCESS_ID or PROCESSID

Service Specific Exit Code attribute

Description

Service-specific error code for errors that occur while the service is either starting or stopping. The exit codes are defined by the service represented by this class. This value is only set when the ExitCode attribute value is 1066.

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 that are shown in parentheses. The following values are defined:

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

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - root\CIMV2\ Win32_ServiceServiceSpecificExitCode.

Warehouse name

SERVICESPECIFICEXITCODE or SERVICESPE

Service Type attribute

Description

Type of service provided to calling processes. The values are: Kernel Driver, File System Driver, Adapter, Recognizer Driver, Own Process, Share Process, or Interactive Process.

Type

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

- Kernel Driver (Kernel Driver)
- File System Driver (File System Driver)
- Adapter (Adapter)
- Recognizer Driver (Recognized Driver)
- Own Process (Own Process)
- Share Process (Share Process)
- Interactive Process (Interactive Process)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - root\CIMV2\Win32_ServiceServiceType.

Warehouse name

SERVICE_TYPE or SERVICETYP

Started attribute

Description

Service has been started.

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 that are shown in parentheses. The following values are defined:

- TRUE (-1)
- FALSE (0)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - root\CIMV2\Win32_ServiceStarted.

Warehouse name

STARTED

Startup Type attribute

Description

Start mode of the Windows base service. The values are: Boot, System, Auto, Manual, or Disabled

Type

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

- Boot (Boot)
- System (System)
- Auto (Auto)
- Manual (Manual)
- Disabled (Disabled)

Source

The source for this attribute is WMI - root\CIMV2\Win32_ServiceStartMode.

Warehouse name

STARTMODE

Log On As attribute

Description

Account name under which a service runs. Depending on the service type, the account name may be in the form of DomainName\Username.

Туре

String

Source

The source for this attribute is WMI - root\CIMV2\Win32_ServiceStartName.

Warehouse name

STARTNAME

State attribute

Description

Current state of the service. The values are:Stopped, Start Pending, Stop Pending, Running, Continue Pending, Pause Pending, Paused, or Unknown

Туре

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

- Stopped (Stopped)
- Start Pending (Start Pending)
- Stop Pending (Stop Pending)
- Running (Running)
- Continue Pending (Continue Pending)
- Pause Pending (Pause Pending)
- Paused (Paused)
- Unknown (Unknown)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Source

The source for this attribute is WMI - root\CIMV2\Win32_ServiceState.

Warehouse name

STATE

Status attribute

Description

Current status of the service. The values are: OK, Error, Degraded, Unknown, Pred Fail, Starting, Stopping, or Service

Type

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

- OK (OK)
- Error (Error)
- Degraded (Degraded)
- Unknown (Unknown)
- Failure Predicted (Pred Fail)
- Starting (Starting)
- Stopping (Stopping)
- Service (Service)

Source

The source for this attribute is WMI - root\CIMV2\Win32_ServiceStatus.

Warehouse name

STATUS

WMI Event Log attribute group

This table contains any event log entries that pertain to this application.

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 WMI Event Log attribute group:

Node attribute: This attribute is a key attribute.

Description

The managed system name of the agent.

Туре

String

Source

The source for this attribute is the agent.

Warehouse name

NODE

Log Name attribute

Description

The name of the event log - Application, System, Security or an application-specific log

Type

String

Warehouse name

LOG_NAME or LOGNAME

Event Source attribute

Description

The event source defined by the application

Type

String

Warehouse name

EVENT_SOURCE or EVTSOURCE

Event Type attribute

Description

Event Type - Error(0), Warning(1), Informational(2), Audit_Success(3), Audit_Failure(4), Unknown(5)

Type

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

- Error (0)
- Warning (1)
- Informational (2)
- Audit Success (3)
- Audit Failure (4)
- Unknown (5)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

EVENT_TYPE or EVTTYPE

Event ID attribute Description

The ID of the event

Туре

Integer (32-bit counter)

Warehouse name

EVENT_ID or EVTID

Event Category attribute

Description

The Category of the event

Type

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

• None (None)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

EVENT_CATEGORY or EVTCATEG

Message attribute

Description

The event message

Туре

String Warehouse name

MESSAGE

Time Generated attribute

Description

The time the event was generated

Туре

Timestamp

Warehouse name

TIME_GENERATED or TIMESTAMP

Event Level attribute

Description

The Level value specified in the event. This is an expanded version of the Event_Type field only available on Windows 2008 or later

Type

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

• Not Available (-1)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

EVENT_LEVEL or EVTLEVEL

Event Keywords attribute

Description

A comma-separated list of the keywords specified in the event. This field only available on Windows 2008 or later

Type

String with enumerated values. The strings are displayed in the Tivoli Enterprise

Portal. The warehouse and queries return the values that are shown in parentheses. The following values are defined:Not Available (-1)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Warehouse name EVENIT KEVWORDS or

EVENT_KEYWORDS or EVTKEYWDS

Event API Version attribute

Description

The version of the Event Log API used to retrieve this event

Туре

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

- NT Event Log (1)
- Windows Event Log (2)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

EVENT_API_VERSION or EVTAPIVER

WMI Performance Object Status attribute group

The Performance Object Status attribute group contains information that reflects the status of other attribute groups so you can see the status of all of the performance objects that make up this application all at once. Each of these other performance attribute groups is represented by a row in this table (or other type of view). The status for an attribute group reflects the result of the last attempt to collect data for that attribute group, which allows you to see whether the agent is performing correctly. Unlike other attribute groups, the Performance Object Status attribute group does not reflect the state of the monitored application. This attribute group is most often used to determine why data is not available for one of the performance attribute groups.

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 WMI Performance Object Status attribute group:

Node attribute: This attribute is a key attribute.

Description

The managed system name of the agent.

Туре

String

Source

The source for this attribute is the agent.

Warehouse name

NODE Timestamp attribute

Description

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

Туре

String

Source

The source for this attribute is the agent.

Warehouse name TIMESTAMP

Query Name attribute: This attribute is a key attribute.

Description

The name of the attribute group.

Туре

String Warehouse name

QUERY_NAME or ATTRGRP

Object Name attribute

Description

The name of the performance object.

Туре

String Warehouse name

OBJECT_NAME or OBJNAME

Object Type attribute

Description

The type of the performance object.

Type

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

- WMI (0)
- PERFMON (1)
- WMI ASSOCIATION GROUP (2)
- JMX (3)
- SNMP (4)
- SHELL COMMAND (5)
- JOINED GROUPS (6)
- CIMOM (7)
- CUSTOM (8)
- ROLLUP DATA (9)
- WMI REMOTE DATA (10)
- LOG FILE (11)
- JDBC (12)
- CONFIG DISCOVERY (13)
- NT EVENT LOG (14)
- FILTER (15)
- SNMP EVENT (16)
- PING (17)
- DIRECTOR DATA (18)
- DIRECTOR EVENT (19)
- SSH REMOTE SHELL COMMAND (20)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

OBJECT_TYPE or **OBJTYPE**

Object Status attribute

Description

The status of the performance object.

Type

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

- ACTIVE (0)
- INACTIVE (1)

Warehouse name

OBJECT_STATUS or OBJSTTS

Error Code attribute

Description

The error code that is associated with the query.

Type

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

- NO ERROR (0)
- GENERAL ERROR (1)
- OBJECT NOT FOUND (2)
- COUNTER NOT FOUND (3)
- NAMESPACE ERROR (4)
- OBJECT CURRENTLY UNAVAILABLE (5)
- COM LIBRARY INIT FAILURE (6)
- SECURITY INIT FAILURE (7)
- PROXY SECURITY FAILURE (9)
- NO INSTANCES RETURNED (10)
- ASSOCIATOR QUERY FAILED (11)
- REFERENCE QUERY FAILED (12)
- NO RESPONSE RECEIVED (13)
- CANNOT FIND JOINED QUERY (14)
- CANNOT FIND JOIN ATTRIBUTE IN QUERY 1 RESULTS (15)
- CANNOT FIND JOIN ATTRIBUTE IN QUERY 2 RESULTS (16)
- QUERY 1 NOT A SINGLETON (17)
- QUERY 2 NOT A SINGLETON (18)
- NO INSTANCES RETURNED IN QUERY 1 (19)
- NO INSTANCES RETURNED IN QUERY 2 (20)
- CANNOT FIND ROLLUP QUERY (21)
- CANNOT FIND ROLLUP ATTRIBUTE (22)
- FILE OFFLINE (23)
- NO HOSTNAME (24)
- MISSING LIBRARY (25)
- ATTRIBUTE COUNT MISMATCH (26)
- ATTRIBUTE NAME MISMATCH (27)
- COMMON DATA PROVIDER NOT STARTED (28)
- CALLBACK REGISTRATION ERROR (29)
- MDL LOAD ERROR (30)
- AUTHENTICATION FAILED (31)
- CANNOT RESOLVE HOST NAME (32)
- SUBNODE UNAVAILABLE (33)
- SUBNODE NOT FOUND IN CONFIG (34)
- ATTRIBUTE ERROR (35)
- CLASSPATH ERROR (36)
- CONNECTION FAILURE (37)
- FILTER SYNTAX ERROR (38)
- FILE NAME MISSING (39)
- SQL QUERY ERROR (40)
- SQL FILTER QUERY ERROR (41)
- SQL DB QUERY ERROR (42)
- SQL DB FILTER QUERY ERROR (43)
- PORT OPEN FAILED (44)
- ACCESS DENIED (45)
- TIMEOUT (46)
- NOT IMPLEMENTED (47)
- REQUESTED A BAD VALUE (48)
- RESPONSE TOO BIG (49)
- GENERAL RESPONSE ERROR (50)
- SCRIPT NONZERO RETURN (51)
- SCRIPT NOT FOUND (52)
- SCRIPT LAUNCH ERROR (53)
- CONF FILE DOES NOT EXIST (54)
- CONF FILE ACCESS DENIED (55)
- INVALID CONF FILE (56)
- EIF INITIALIZATION FAILED (57)
- CANNOT OPEN FORMAT FILE (58)
- FORMAT FILE SYNTAX ERROR (59)
- REMOTE HOST UNAVAILABLE (60)
- EVENT LOG DOES NOT EXIST (61)
- PING FILE DOES NOT EXIST (62)
- NO PING DEVICE FILES (63)
- PING DEVICE LIST FILE MISSING (64)
- SNMP MISSING PASSWORD (65)
- DISABLED (66)
- URLS FILE NOT FOUND (67)
- XML PARSE ERROR (68)
- NOT INITIALIZED (69)
- ICMP SOCKETS FAILED (70)
- DUPLICATE CONF FILE (71)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

ERROR_CODE or ERRCODE

Last Collection Start attribute

Description

The most recent time a data collection of this group started.

Type

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

- NOT COLLECTED (069123119000000)
- NOT COLLECTED (000000000000000)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

LAST_COLLECTION_START or COLSTRT

Last Collection Finished attribute

Description

The most recent time a data collection of this group finished.

Type

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

- NOT COLLECTED (069123119000000)
- NOT COLLECTED (00000000000000)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

LAST_COLLECTION_FINISHED or COLFINI

Last Collection Duration attribute

Description

The duration of the most recently completed data collection of this group in seconds.

Type

Real number (32-bit counter) with two decimal places of precision

Warehouse name

LAST_COLLECTION_DURATION or COLDURA

Average Collection Duration attribute

Description

The average duration of all data collections of this group in seconds.

Type

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

• NO DATA (-100)

Any other value is the value that is returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

AVERAGE_COLLECTION_DURATION or COLAVGD

Refresh Interval attribute

Description

The interval at which this group is refreshed in seconds.

Туре

Integer (32-bit counter)

Warehouse name

REFRESH_INTERVAL or REFRINT

Number of Collections attribute

Description

The number of times this group has been collected since agent start.

Type

Integer (32-bit counter)

Warehouse name

NUMBER_OF_COLLECTIONS or NUMCOLL

Cache Hits attribute

Description

The number of times an external data request for this group was satisfied from the cache.

Type

Integer (32-bit counter)

Warehouse name

CACHE_HITS or CACHEHT

Cache Misses attribute

Description

The number of times an external data request for this group was not available in the cache.

Type

Integer (32-bit counter)

Warehouse name

CACHE_MISSES or CACHEMS

Cache Hit Percent attribute

Description

The percentage of external data requests for this group that were satisfied from the cache.

Type

Real number (32-bit counter) with two decimal places of precision

Warehouse name

CACHE_HIT_PERCENT or CACHPCT

Intervals Skipped attribute

Description

The number of times a background data collection for this group was skipped because the previous collection was still running when the next one was due to start.

Type

Integer (32-bit counter)

```
Warehouse name
```

INTERVALS_SKIPPED or INTSKIP

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 by the historical data in each attribute group that is collecting historical data. 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, which is required to calculate disk space for this monitoring 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 monitoring agent" on page 19.

Attribute group

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

Bytes per row (agent)

Estimate of the record length for each row or instance that is 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 that are 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 that are 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 monitors each processor in your computer and you have a dual processor computer, the number of rows is two.

		Bytes per	Database bytes per row	Aggregate bytes per row
Table	Attribute group	row (agent)	(warehouse)	(warehouse)
KR2WIN32CO	KR2_COMPUTER_SYSTEM	724	732	847
KR2DISK	KR2_DISK	248	281	708
KR2DEVICE	KR2_HRDEVICETABLE	216	217	269
KR2PROCSR	KR2_HRPROCESSOR	292	297	505
KR2HRPROCE	KR2_HRPROCESSORTABLE	152	152	267
KR2STORTBL	KR2_HRSTORAGETABLE	224	227	396
KR2HRSYSTE	KR2_HRSYSTEM	985	990	1183
KR2WIN32PE	KR2_LOGICAL_DISK	224	233	738
KR2MEPS	KR2_MANAGED_SYSTEMS_SNMP	197	198	235
KR2WDS	KR2_MANAGED_SYSTEMS_WMI	197	198	235
KR2HRMEM	KR2_MEMORY	248	281	708
KR2NICNAV	KR2_NETWORK	447	458	726
KR2WMINNIC	KR2_NETWORK_INTERFACES	224	233	738
KR2WIN32OP	KR2_OPERATING_SYSTEM	432	442	734
KR2WIN32PA	KR2_PAGE_FILE_USAGE_DETAILS	352	354	430
KR2PAGINGF	KR2_PAGING_FILE_SUMMARY	188	188	342
KR2POBJST	KR2_PERFORMANCE_OBJECT_STATUS	352	387	616
KR2WIN32P0	KR2_PHYSICAL_DISK	224	233	738
KR2WIN32PH	KR2_PHYSICAL_MEMORY	764	779	948
KR2WMINPLS	KR2_PROCESS	248	263	786
KR2PROCLST	KR2_PROCESSES	288	304	407
KR2PROCESS	KR2_PROCESSOR	200	203	474
KR2WIN32PR	KR2_PROCESSOR_DETAILS	284	287	324
KR2PROCSRT	KR2_PROCESSOR_UTILIZATION_TOTAL	92	92	285
KR2SYSTEM	KR2_SYSTEM	128	137	681
KR2TERMINA	KR2_TERMINAL_SERVICES	96	97	329
KR2TERMIN0	KR2_TERMINAL_SERVICES_SESSION	188	188	342
KR2TERMIN1	KR2_TERMINAL_SERVICES_SESSION_MEMORY	196	198	310
KR2THPLST	KR2_THREAD_POOL_STATUS	124	168	493
KR2WIN32US	KR2_USER_ACCOUNTS	424	432	469
KR2MEMORY	KR2_VIRTUAL_MEMORY	128	137	585
KR2WINPOS	KR2_WIN_PERFORMANCE_OBJECT_STATUS	352	387	616
KR2ELOGWMI	KR2_WMI_EVENT_LOG	2240	2246	2283
KR2WMIPOS	KR2_WMI_PERFORMANCE_OBJECT_STATUS	352	387	616

Table 1. Capacity planning for historical data logged by the Agentless Monitor for Windows

For more information about historical data collection, see *Managing historical data* in 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 tacmd commands 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 IBM Tivoli Agentless Monitoring for Windows Operating Systems. 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 Situation editor initially lists the situations associated with the Navigator item that you selected. When you click a situation name or create a situation, a 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 Agentless Monitor for Windows 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 is 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 *Tivoli Enterprise Portal 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."

Predefined situations

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

Agent level Navigator items

- Agentless Windows OS
 - Not applicable

- Managed Systems
 - Not applicable

WMI Windows Systems (WMI) subnode

- WMI Windows Systems
 - Not applicable
- Disk
 - KR2_WMI_Disk_Util_High
- Memory
 - Not applicable
- Network Interfaces
- Not applicable
- Process
 - Not applicable
- Processor
 - KR2_WMI_CPU_Util_High
- System
 - KR2_WMI_Memory_Util_High
- WMI Event Log
 - Not applicable

SNMP Windows Systems (WIN) subnode

- SNMP Windows Systems
 - Not applicable
- Disk
 - KR2_SNMP_Disk_Util_High
- Memory
 - KR2_SNMP_Memory_Util_High
- Network
 - KR2_SNMP_NIC_Status_Down
 - KR2_SNMP_NIC_Status_Unknown
- Processes
 - Not applicable
- Processor
 - KR2_SNMP_CPU_Util_High
- System
 - Not applicable

Situation descriptions

Each situation description provides information about the situation that you can use to monitor the condition of systems in your network.

The situation descriptions provide the following information:

Description

Information about the conditions that the situation tests.

Formula

Syntax that contains one or more logical expressions that describe the conditions for the situation to monitor.

Distribution

Whether the situation is automatically distributed to instances of the agent or is available for manual distribution.

Run at startup

Whether the situation starts monitoring when the agent starts.

Sampling interval

Number of seconds that elapse between one sample of data that the monitoring agent collects for the server and the next sample.

Situation persistence

Whether the conditions specified in the situation evaluate to "true" for the defined number of occurrences in a row before the situation is raised. The default of one means that no persistence-checking takes place.

Severity

Severity of the predefined events: Warning, Informational, or Critical.

Clearing conditions

Controls when a true situation closes: after a period, when another situation is true, or whichever occurs first if both are selected.

Agentless Windows OS Navigator item

No predefined situations are included for this Navigator item.

Managed Systems Navigator item

No predefined situations are included for this Navigator item.

WMI Windows Systems subnode

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

WMI Windows Systems Navigator item

No predefined situations are included for this Navigator item.

Disk Navigator item

KR2_WMI_Disk_Util_High situation

Description

Free space on a logical disk drive is shrinking.

The situation is evaluated for each distinct value of Name.

Formula

*IF *VALUE KR2_LOGICAL_DISK.Pct_Free_Space *LT 10

See "Attributes in each attribute group" on page 22 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 3 minutes

Memory Navigator item

No predefined situations are included for this Navigator item.

Network Interfaces Navigator item

No predefined situations are included for this Navigator item.

Process Navigator item

No predefined situations are included for this Navigator item.

Processor Navigator item

KR2_WMI_CPU_Util_High situation

Description

Percent of time all processors are busy.

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

Formula

*IF ((*VALUE KR2_PROCESSOR.Pct_Processor_Time *GT 90) *AND (*VALUE
KR2_PROCESSOR.Name *EQ _Total))

See "Attributes in each attribute group" on page 22 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

3 minutes

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 1.

Error conditions

Critical

Clearing conditions

The situation clears when the condition becomes false.

System Navigator item

KR2_WMI_Memory_Util_High situation

Description

Monitors whether the virtual memory availability is running low.

The situation is evaluated for each distinct value of Name.

Formula

*IF *VALUE KR2_OPERATING_SYSTEM.Pct_Free_Virtual_Memory *LT 10

See "Attributes in each attribute group" on page 22 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 3 minutes Situation persistence The number of times the conditions of the situation must occur for the situation to be true is 1. Error conditions Critical Clearing conditions The situation clears when the condition becomes false.

WMI Event Log Navigator item

No predefined situations are included for this Navigator item.

SNMP Windows Systems subnode

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

SNMP Windows Systems Navigator item

No predefined situations are included for this Navigator item.

Disk Navigator item

KR2_SNMP_Disk_Util_High situation

Description

Free space on a file system is shrinking.

The situation is evaluated for each distinct value of Name.

Formula

*IF *VALUE KR2_DISK.Percentage_of_Available_Disk_Space *LT 10

See "Attributes in each attribute group" on page 22 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

3 minutes

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 1.

Error conditions

Critical

Clearing conditions

The situation clears when the condition becomes false.

Memory Navigator item

KR2_SNMP_Memory_Util_High situation

Description

Monitors whether the virtual memory availability is running low.

The situation is evaluated for each distinct value of Description.

Formula

*IF *VALUE KR2_MEMORY.Percentage_of_Available_Memory *LT 10.00

See "Attributes in each attribute group" on page 22 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

3 minutes

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 1.

Error conditions

Critical

Clearing conditions

The situation clears when the condition becomes false.

Network Navigator item

KR2_SNMP_NIC_Status_Down situation

Description

The Network Interface Card is not currently up.

The situation is evaluated for each distinct value of Description.

Formula

*IF ((*VALUE KR2_NETWORK.Operational_Status *EQ down) *OR (*VALUE
KR2 NETWORK.Operational Status *EQ testing))

See "Attributes in each attribute group" on page 22 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

3 minutes

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 1.

Error conditions

Critical

Clearing conditions

The situation clears when the condition becomes false.

KR2_SNMP_NIC_Status_Unknown situation

Description

The Network Interface Card is not currently up.

The situation is evaluated for each distinct value of Description.

Formula

*IF *VALUE KR2_NETWORK.Operational_Status *EQ unknown

See "Attributes in each attribute group" on page 22 for descriptions of the attributes in this formula.

Distribution

This situation is automatically distributed to instances of this agent.

Run at startup

Yes

Processes Navigator item

No predefined situations are included for this Navigator item.

Processor Navigator item

KR2_SNMP_CPU_Util_High situation

Description

Percent of time all processors are busy.

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

Formula

*IF *VALUE KR2_PROCESSOR_UTILIZATION_TOTAL.Average *GT 90

See "Attributes in each attribute group" on page 22 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

3 minutes

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 1.

Error conditions

Critical

Clearing conditions

The situation clears when the condition becomes false.

System Navigator item

No predefined situations are included for this Navigator item.

Chapter 6. Take Action commands reference

Take Action commands can be run from the portal client or included in a situation or a policy.

About Take Action commands

When included in a situation, the command runs when the situation becomes true. A Take Action command in a situation is also referred to as *reflex automation*. When you enable a Take Action command in a situation, you automate a response to system conditions. For example, you can use a Take Action command to send a command to restart a process on the managed system or to send a text message to a cell phone.

In advanced automation, policies are used to take actions, schedule work, and automate manual tasks. A policy comprises a series of automated steps called activities that are connected to create a workflow. After an activity is completed, the Tivoli Enterprise Portal receives return-code feedback, and advanced automation logic responds with subsequent activities that are prescribed by the feedback.

A basic Take Action command shows the return code of the operation in a message box that is displayed after the action is completed or in a log file. After you close this window, no further information is available for this action.

Additional information about Take Action commands

For more information about working with Take Action commands, see *Take Action commands* in the *Tivoli Enterprise Portal User's Guide*.

Predefined Take Action commands

Not all agents have predefined Take Action commands. But you can create Take Action commands for any agent.

The IBM Tivoli Agentless Monitoring for Windows Operating Systems does not provide predefined Take Action commands.

Chapter 7. Policies reference

Policies are used as an advanced automation technique for implementing more complex workflow strategies than you can create through simple automation. All agents do not provide predefined policies, but you can create policies for any agent.

A *policy* is a set of automated system processes that can take actions, schedule work for users, or automate manual tasks. You use the Workflow Editor to design policies. You control the order in which the policy executes a series of automated steps, which are also called *activities*. Policies are connected to create a workflow. After an activity is completed, the Tivoli Enterprise Portal receives return-code feedback, and advanced automation logic responds with subsequent activities prescribed by the feedback.

For more information about working with policies, see *Automation with policies* in the *Tivoli Enterprise Portal User's Guide*.

For information about using the Workflow Editor, see the *IBM Tivoli Monitoring Administrator's Guide* or the Tivoli Enterprise Portal online help.

Predefined policies

Not all agents have predefined policies. But you can create policies for any agent.

The IBM Tivoli Agentless Monitoring for Windows Operating Systems does not provide predefined policies.

Chapter 8. Troubleshooting

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

For general troubleshooting information, see the *IBM Tivoli Monitoring Troubleshooting Guide*. For other problem-solving options, see "Support information" on page 180.

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 154
- "Consulting the lists of identified problems and workarounds" on page 154

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.

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 155 for lists of all trace log files and their locations.
	environment, see the <i>Tivoli Enterprise Portal User's Guide</i> .
Windows Operating Systems information	Version number and patch level
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 Agentless Monitoring for Windows Operating Systems
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 <i>install_dir/bin</i> directory, where <i>install_dir</i> is the directory where you installed the monitoring agent.

Table 2. Information to gather before contacting IBM Software Support

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

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

Using logging

Logging is the primary troubleshooting feature in the Agentless Monitor for Windows. *Logging* refers to the text messages and trace data that is generated by the Agentless Monitor for Windows. 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 are 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 164.

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

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 155
- "Examples: Using trace logs" on page 158
- "Setting RAS trace parameters by using the GUI" on page 159

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

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

Agent log file naming conventions

Table 3 provides the names, locations, and descriptions of IBM Tivoli Monitoring general RAS1 log files. The log file names for the Agentless Monitor for Windows adhere to the following naming convention:

Windows systems

hostname_productcode_instance-name_program_HEXtimestamp-nn.log

Linux and UNIX systems

hostname_productcode_instance-name_program_HEXtimestamp-nn.log

Where:

hostname

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

productcode

Two-character product code. For IBM Tivoli Agentless Monitoring for Windows Operating Systems, the product code is r2.

instance-name

Instance name of the agent.

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.

System where log is located	File name and path	Description
On the Tivoli Enterprise Monitoring Server	 Windows: The file in the <i>install_dir</i>\InstallITM path UNIX: The candle_installation.log file in the <i>install_dir</i>/logs path Linux: The candle_installation.log file in the <i>install_dir</i>/logs path 	Provides details about products that are installed. Note: Trace logging is enabled by default. A configuration step is not required to enable this tracing.
On the Tivoli Enterprise Monitoring Server	The Warehouse_Configuration.log file is in the following location on Windows systems: <i>install_dir</i> \InstallITM	Provides details about the configuration of data warehousing for historical reporting.

Table 3. Trace log files for troubleshooting agents

Table 3.	Trace log	g files fo	r troubleshooting	agents	(continued)
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System where log is located	File name and path	Description
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.
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.pidnnnn 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	<pre>The teps_odbc.log file is located in the following path: Windows: install_dir\InstallITM UNIX: install_dir/logs Linux: install_dir/logs</pre>	When you enable historical reporting, this log file traces the status of the warehouse proxy agent.

System where log is located	File name and path	Description
On the computer that hosts the monitoring agent	<pre>The RAS1 log files are as follows: Windows: hostname r2_instance_name_kr2agent_ HEXtimestamp-nn.log in the install_dir\tmaitm6\logs directory UNIX: hostname_r2_instance_name_ kr2agent_ HEXtimestamp-nn.log in the install_dir/logs directory Linux: hostname_r2_instance_name_ kr2agent_ HEXtimestamp-nn.log in the install_dir/logs directory Linux: hostname_r2_instance_name_ kr2agent_ HEXtimestamp-nn.log in the install_dir/logs directory Linux: hostname_r1_install_dir/logs directory These logs are in the following directories: Windows: install_dir\tmaitm6\ logs UNIX: install_dir/logs UNIX: install_dir/logs On Linux systems, the following additional logs are provided: - hostname_r2_timestamp.log hostname_r2_timestamp.log number hostname_r2_timestamp.pidnnnnn in the install_dir/logs path, where nnnnn is the process ID number humber directory directory directory directory directories: directori</pre>	Traces activity of the monitoring agent.
On the computer that hosts the monitoring agent	<pre>The agent operations log files are as follows: instance_hostnameR2.LG0 is the current log created when the agent was started. instance_hostname_R2.LG1 is the backup of the previous log. These logs are in the following directory depending on the operating system that you are using: • Windows: install_dir\tmaitm6\ logs • Linux: install_dir/logs • UNIX: install_dir/logs</pre>	 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 <i>previous</i> monitoring session: Status of connectivity with the monitoring server Situations that were running The success or failure status of Take Action commands

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

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

System where log is located	File name and path	Description
Definitions of variables:		

```
Definitions of variables:
```

- *timestamp* is a time stamp with a format that includes year (y), month (m), day (d), hour (h), and minute (m), as follows: **yyyymmdd hhmm**
- *HEXtimestamp* is a hexadecimal representation of the time at which the process was started.
- *install_dir* represents the directory path where you installed the IBM Tivoli Monitoring component. *install_dir* can represent a path on the computer that hosts the monitoring system, the monitoring agent, or the portal.
- *instance* refers to the name of the database instance that you are monitoring.
- *instance_name* refers to the name of the agent instance.
- hostname refers to the name of the computer on which the IBM Tivoli Monitoringcomponent runs.
- *nn* represents the circular sequence in which logs are rotated. this value includes a range from 1 5, by default. The first is always retained because it includes configuration parameters.
- productcode specifies the product code, for example, um for Universal Agent or nt for Windows systems.

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

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

(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:R2 is ON-LINE.

(42C3079B.0000-6A4:kpxreqhb.cpp,644,"HeartbeatInserter") Remote node SERVER5B:R2 is OFF-LINE.

See the following key points about the preceding excerpts:

- The monitoring server appends the **R2** product code to the server name to form a unique name (SERVER5B:R2) for this instance of the IBM Tivoli Agentless Monitoring for Windows Operating Systems. 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" provide these entries.

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

- 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 IBM Tivoli Agentless Monitoring for Windows Operating Systems, 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 154 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 IBM Tivoli Agentless Monitoring for Windows Operating Systems uses RAS1 tracing and generates the logs described in Table 3 on page 155. 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:kr2 ALL)
 - Maximum error tracing. KBB_RAS1=ERROR (UNIT:kr2 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_DEBUG Setting menu to log information that can help you diagnose communications and connectivity problems between the monitoring agent and the monitoring server. The KDC_DEBUG setting and the Maximum error tracing setting can generate a large amount of trace logging. Use these settings only temporarily, while you are troubleshooting problems. Otherwise, the logs can occupy excessive amounts of hard disk space.

8. Click **OK**. You see a message reporting a restart of the monitoring agent so that your changes take effect.

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 155 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 Agentless Monitor for Windows uses RAS1 tracing and generates the logs described in Table 3 on page 155. The default RAS1 trace level is ERROR.

Procedure

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

install_dir\tmaitm6\KR2ENV_instance name

• UNIX systems:

install_dir /config/r2_instance name.config

- 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:kr2 ALL) (UNIT:kra ALL)
- 3. Edit the line that begins with **KBB_RAS1_LOG=** to manage the generation of log files:
 - **MAXFILES**: The total number of files that are to be kept for all startups of a specific program. When this value is exceeded, the oldest log files are discarded. The default value is 9.
 - LIMIT: The maximum size, in megabytes (MB) of a RAS1 log file. The default value is 5.
 - IBM Software Support might guide you to modify the following parameters:
 - COUNT: The number of log files to keep in the rolling cycle of one program startup. The default is
 3.
 - **PRESERVE**: The number of files that are not to be reused in the rolling cycle of one program startup. The default value is 1.

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

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 155 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, except for a few monitoring agents, from the tracing utility.

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

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

ras1

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

The syntax is as follows:

```
ras1 set|list (UNIT|COMP: class_name ANY|ALL|Detai1|ERROR|Flow|INPUT|Metrics|OUTPUT|STATE)
{(UNIT|COMP: class_name ANY|ALL|Detai1|ERROR|Flow|INPUT|Metrics|OUTPUT|STATE)}
```

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

Command options

set

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

list

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

Parameters

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

COMP: class_name

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

UNIT: class_name

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

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

ALL

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

ANY

Turns off tracing.

Detail

Displays detailed information about each function.

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

ERROR

Logs internal error conditions.

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

F1ow

Displays control flow data for each function entry and exit.

When entered with the list option, the trace is tagged with F1.

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.

kbbcrel.c, 400, May 29 2007, 12:54:43, 1.1, * kbbcrnl.c, 400, May 29 2007, 12:54:42, 1.1, * kdhblde.c, 400, May 29 2007, 12:59:34, 1.1, KDH kdhomed.c, 400, May 29 2007, 12:59:24, 1.1, KDH kdhsrej.c, 400, May 29 2007, 13:00:06, 1.5, KDH kdhblfh.c, 400, May 29 2007, 12:59:33, 1.1, KDH kdhbloe.c, 400, May 29 2007, 12:59:38, 1.2, KDH kdhslns.c, 400, May 29 2007, 13:00:08, 1.3, KDH kbbacdl.c, 400, May 29 2007, 12:54:27, 1.2, ACF1 kbbacl.c, 400, May 29 2007, 12:54:27, 1.4, ACF1

```
kbbacli.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
kdhblpr.c, 400, May 29 2007, 12:59:39, 1.1, KDH
kdhsgnh.c, 400, May 29 2007, 12:59:49, 1.1, KDH
kdhouts.c, 400, May 29 2007, 12:59:23, 1.1, KDH
kdhsrsp.c, 400, May 29 2007, 13:00:13, 1.2, KDH
kdhslrp.c, 400, May 29 2007, 13:00:12, 1.1, KDH
kdhscsv.c, 400, May 29 2007, 12:59:58, 1.9, KDH
kdebbac.c, 400, May 29 2007, 12:56:50, 1.10, KDE
```

Turning on tracing

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

About this task

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

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

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

Procedure

 Open a web browser and enter the URL to access the Service Console. http://hostname:1920

where *hostname* is the IP address or host name of the computer on which the IBM Tivoli Monitoring component is running.

2. Click the hyperlink associated with the component for which you want to modify its trace settings.

Note: In the previous view, if you want to modify tracing for the Tivoli Enterprise Monitoring Server, select **IBM Tivoli Monitoring Service Console** under **Service Point: system**.*your host name_*ms.

- **3**. Enter a user ID and password to access the system. This ID is any valid user that has access to the system.
- 4. Enter the command to turn on the required level of trace for the specified component classes or units. ras1 set (UNIT|COMP: class_name ALL|Flow|ERROR|Detail|INPUT|Metrics|OUTPUT|STATE) {(UNIT|COMP: class_name ALL|Flow|ERROR|Detail|INPUT|Metrics|OUTPUT|STATE)}

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

Turning off tracing

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

Procedure

 Open a web browser and enter the URL to access the Service Console. http://hostname:1920 where *hostname* is the IP address or host name of the computer on which the IBM Tivoli Monitoring component is running.

- 2. Click the hyperlink associated with the component for which you want to modify its trace settings.
- **3**. Enter a user ID and password to access the system. This ID is any valid user that has access to the system.
- 4. Enter the command to turn off the required level of trace for the specified component classes or units. ras1 set (UNIT|COMP: class_name ANY) {(UNIT|COMP: class_name ANY)}

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

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 Agentless Monitor for Windows, for example installation and configuration problems and workspace problems.

Note: You can resolve some problems by ensuring that your system matches the system requirements listed in Chapter 2, "Requirements and agent installation and configuration," on page 5.

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

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 a	and solutions	for installation	and configuration
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Problem	Solution
(UNIX only) During a command-line installation, you choose to install a component that is currently installed, and you see the following warning: WARNING - you are about to install the SAME version of "component_name" where component_name is the name of the component that you are attempting to install. Note: This problem affects UNIX command-line installations. If you monitor only Windows environments, you see this problem if you choose to install a product component (for example, a monitoring server) on a UNIX system.	You must exit and restart the installation process. You cannot return to the list where you selected components to install. When you run the installer again, do not attempt to install any component that is currently installed.
Diagnosing problems with product browse settings (Windows systems only).	When you have problems with browse settings, complete the following steps:
	 Click Start > Programs > IBM Tivoli Monitoring > Manage Tivoli Enterprise Monitoring Services. The Manage Tivoli Enterprise Monitoring Services window is displayed.
	2. Right-click the Windows agent and select Browse Settings . A text window is displayed.
	3 . Click Save As and save the information in the text file.
	If requested, you can forward this file to IBM Software Support for analysis.
A message similar to "Unable to find running CMS on CT_CMSLIST" in the log file is displayed.	If a message similar to "Unable to find running CMS on CT_CMSLIST" is displayed in the log file, the agent cannot connect to the monitoring server. Confirm the following points:
	• Do multiple network interface cards (NICs) exist on the system?
	• If multiple NICs exist on the system, find out which one is configured for the monitoring server. Ensure that you specify the correct host name and port settings for communication in the IBM Tivoli Monitoring environment.

Problem	Solution
The system is experiencing high CPU usage.	Agent process: View the memory usage of the KR2CMA process. If CPU usage seems to be excessive, restart the monitoring agent.
	Note: As the number of remote systems is increased, the CPU, memory, and network utilization on the agent server also increases. A dedicated agent server might be added to the environment to handle a large agentless monitoring environment.
	Network cards: The network card configurations can decrease the performance of a system. Each stream of packets that a network card receives (assuming that it is a broadcast or destined for the under-performing system) must generate a CPU interrupt and transfer the data through the I/O bus. If the network card in question is a bus-mastering card, work can be offloaded and a data transfer between memory and the network card can continue without using CPU processing power. Bus-mastering cards are 32-bit and are based on PCI or EISA bus architectures.
The configuration panel is blank on 64-bit Windows systems where the Tivoli Enterprise Monitoring Agent Framework (component GL) is version 06.23.00.00 or 06.23.01.00.	Check the GL component version by running kincinfo -t GL from a Windows command line. Example: %CANDLE_HOME%\InstallITM\kincinfo -t GL If the GL component version is 06.23.00.00 or 06.23.01.00,
	 Preferred action: Upgrade the Windows OS Agent to Version 6.2.3 Fix Pack 2.
	• Alternate action: Install the Agent Compatibility (AC) component from the IBM Tivoli Monitoring V6.2.3 Fix Pack 1 media. See Installing the Agent Compatibility (AC) component (http://pic.dhe.ibm.com/infocenter/tivihelp/v15r1/topic/com.ibm.itm.doc_6.2.3fp1/itm623FP1_install199.htm#acpinstall).

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

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

Table 5. General problems and solutions for uninstallation

Problem	Solution	
IBM Tivoli Monitoring might not be able to generate a unique name for monitoring components because of the truncation of names that the product automatically generates.	If the agent supports multiple instances, IBM Tivoli Monitoring automatically creates a name for each monitoring component by concatenating the subsystem name, host name, and product code separated by colons (<i>subsystem_name:hostname:</i> KR2). 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 <i>hostname</i> portion of the name as follows:	
	1. Open the configuration file for the monitoring agent, which is located in the following path:	
	• On Windows: <i>install_dir</i> \tmaitm6\ <i>Kproduct_code</i> CMA.INI. For example, the product code for the Monitoring Agent for Windows OS is NT. The file name is KNTCMA.INI.	
	• On UNIX and Linux: itm_home/config/ product_code.ini and product_code.config. For example, the file names for the Monitoring Agent for UNIX OS is ux.ini and ux.config.	
	2. Find the line that begins with CTIRA_HOSTNAME=.	
	 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 KR2, 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.	
The software inventory tag for the agent on UNIX and Linux systems is not removed during uninstallation of the agent.	After uninstalling the agent, manually remove the file named <i>full name of agent</i> .cmptag from the \$CANDLEHOME/properties/version/ directory.	

Table 5. General problems and solutions for uninstallation (continued)

Table 5. General problems and solutions for uninstallation (continued)

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

Remote deployment troubleshooting

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

Table 6 contains problems and solutions related to remote deployment.

Table 6. Remote deployment problems and solutions

Problem	Solution
While you are using the remote deployment feature to install the IBM Tivoli Agentless Monitoring for Windows Operating Systems, an empty command window is displayed on the target computer. This problem occurs when the target of remote deployment is a Windows computer. (For more information about the remote deployment feature, see the <i>IBM Tivoli Monitoring</i> <i>Installation and Setup Guide</i> .)	Do not close or modify this window. It is part of the installation process and is dismissed automatically.
The removal of a monitoring agent fails when you use the remote removal process in the Tivoli Enterprise Portal desktop or browser.	This problem might occur when you attempt the remote removal process immediately after you restart the Tivoli Enterprise Monitoring Server. You must allow time for the monitoring agent to refresh its connection with the Tivoli Enterprise Monitoring Server before you begin the remote removal process.

Agent troubleshooting

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

Table 7 on page 170 contains problems and solutions that can occur with the agent after it is installed.

Problem	Solution
Log data accumulates too rapidly.	Check the RAS trace option settings, which are described in "Setting RAS trace parameters by using the GUI" on page 159. The trace option settings that you can set on the KBB_RAS1= and KDC_DEBUG= lines potentially generate large amounts of data.
SNMP attribute groups are not reporting data.	 Check the Data Collection Status workspace to identify the error being reported.
	2. Verify connectivity with the target system:
	a. Make sure that the system can be reached using a tool such as ping.
	b. Make sure no firewalls are blocking communications on the SNMP port (UDP 161).
	c . Verify that the community strings and passwords match what is configured on the SNMP system.
	d. Review the snmpd.conf file and verify that the SNMP system is not restricting access to localhost.
	e . Use an SNMP tool like snmpwalk to verify connectivity to the SNMP system.
	f. Verify that the SNMP service is installed, configured, and running.
WMI attribute groups are not reporting data.	 Check the Data Collection Status workspace to identify the error being reported.
	2. Verify in the configuration panels that the user name has been specified as:
	DOMAIN\Username
	-01-
	SERVERNAME\Username
	the Administrator Group.
	 Review the Event Log on the server running the Agentless Windows OS monitor to verify there are no DCOM errors reported.
The Managed System Name for the remote system keeps switching between agent instances.	The remote system has been defined in two different agent configurations. The remote system nodes must have a name that is unique across an IBM Tivoli Monitoring environment.
When using the itmcmd agent commands to start or stop this monitoring agent, you receive the following error message:	Include the command option -o to specify the instance to start or stop. The instance name must match the name used for configuring the agent. For example:
MKCIIN0201E Specified product is not configured.	./itmcmd agent -o Test1 start r2
	For more information about using the itmcmd commands, see the <i>IBM Tivoli Monitoring Command Reference</i> .

Table 7. Agent problems and solutions (continued)

Problem	Solution
Perfmon attribute groups are not reporting data.	Use the Extensible Performance Counter List (exctrlst) Microsoft utility from the Microsoft Support website (http://support.microsoft.com/kb/927229) to determine whether the performance features are installed correctly on the remote system. Scroll to the Extensible Performance Counter List (exctrlst.exe).
	The Microsoft TechNet article on how to use exctrlst can be found in the Microsoft TechnNet Library (http://technet.microsoft.com/en-us/library/ cc737958.aspx).

Table 7. Agent problems and solutions (continued)

Problem	Solution
A configured and running instance of the monitoring agent is not displayed in the Tivoli Enterprise Portal, but other instances of the monitoring agent on the same system are displayed in the portal.	IBM Tivoli Monitoring products use Remote Procedure Call (RPC) to define and control product behavior. RPC is the mechanism that a client process uses to make a subroutine call (such as GetTimeOfDay or ShutdownServer) to a server process somewhere in the network. Tivoli processes can be configured to use TCP/UDP, TCP/IP, SNA, and SSL as the protocol (or delivery mechanism) for RPCs that you want.
	IP.PIPE is the name given to Tivoli TCP/IP protocol for RPCs. The RPCs are socket-based operations that use TCP/IP ports to form socket addresses. IP.PIPE implements virtual sockets and multiplexes all virtual socket traffic across a single physical TCP/IP port (visible from the netstat command).
	A Tivoli process derives the physical port for IP.PIPE communications based on the configured, well-known port for the hub Tivoli Enterprise Monitoring Server. (This well-known port or BASE_PORT is configured by using the 'PORT:' keyword on the KDC_FAMILIES / KDE_TRANSPORT environment variable and defaults to '1918'.)
	The physical port allocation method is defined as (BASE_PORT + 4096*N), where N=0 for a Tivoli Enterprise Monitoring Server process and N={1, 2,, 15} for another type of monitoring server process. Two architectural limits result as a consequence of the physical port allocation method:
	 No more than one Tivoli Enterprise Monitoring Server reporting to a specific Tivoli Enterprise Monitoring Server hub can be active on a system image. No more than 15 IP.PIPE processes can be active on a
	single system image. A single system image can support any number of Tivoli Enterprise Monitoring Server processes (address spaces) if each Tivoli Enterprise Monitoring Server on that image reports to a different hub. By definition, one Tivoli Enterprise Monitoring Server hub is available per monitoring enterprise, so this architecture limit has been reduced to one Tivoli Enterprise Monitoring Server per system image.
	No more than 15 IP.PIPE processes or address spaces can be active on a single system image. With the first limit expressed earlier, this second limitation refers specifically to Tivoli Enterprise Monitoring Agent processes: no more than 15 agents per system image.
	Continued on next row.
Problem	Solution
--	--
Continued from previous row.	This limitation can be circumvented (at current maintenance levels, IBM Tivoli Monitoring V6.1, Fix Pack 4 and later) if the Tivoli Enterprise Monitoring Agent process is configured to use the EPHEMERAL IP.PIPE process. (This process is IP.PIPE configured with the 'EPHEMERAL:Y' keyword in the KDC_FAMILIES / KDE_TRANSPORT environment variable). The number of ephemeral IP.PIPE connections per system image has no limitation. If ephemeral endpoints are used, the Warehouse Proxy agent is accessible from the Tivoli Enterprise Monitoring Server associated with the agents using ephemeral connections either by running the Warehouse Proxy agent on the same computer or by using the Firewall Gateway feature. (The Firewall Gateway feature relays the Warehouse Proxy agent connection from the Tivoli Enterprise Monitoring Server computer to the Warehouse Proxy agent computer if the Warehouse Proxy agent cannot coexist on the same computer.)
I cannot find my queries.	Agents that include subnodes display their queries within the element in the Query Editor list that represents the location of the attribute group. The queries are most often found under the name of the subnode, not the name of the agent.
No historical data is returned including the startup entries previously displayed in the workspace.	No support is available in the auditing for relaying subnode data. To see the historical data, you must choose nodes and not subnodes. A subnode in the Managed System Status workspace will not have a Tivoli Enterprise Monitoring Server name listed under the Managing System.
	 Examples: The Managing System for R4:icvr5d06:LNX is icvr5d06_LZ_icvw3d62:ICVW3D62:R4 (not a Tivoli Enterprise Monitoring Server), so this system is a subnode The Managing System for icvr5d06_LZ_icvw3d62:ICVW3D62:R4 is icvw3d62 (the hub Tivoli Enterprise Monitoring Server), so this system is a node.
	After you distribute to the correct group, you can see the historical data that is saved in the Short term History (STH) file KRAAUDIT under % <i>CANDLEHOME</i> %/CMS. You can trace the Tivoli Enterprise Monitoring Server log file with ERROR(UNIT: KFAAPHST) to see the AUDIT data saved in the STH.

Table 7. Agent problems and solutions (continued)

Workspace troubleshooting

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

Table 8 on page 174 contains problems and solutions related to workspaces.

Table 8. Workspace problems and solutions

Problem	Solution	
The process application components are available, but the Availability status shows PROCESS_DATA_NOT_ AVAILABLE.	This problem occurs because the PerfProc performance object is disabled. When this condition exists, IBM Tive Monitoring cannot collect performance data for this process. Use the following steps to confirm that this problem exists and to resolve it:	
	1. In the Windows Start menu, click Run .	
	2. Type perfmon.exe in the Open field of the Run window. The Performance window is displayed.	
	3 . Click the plus sign (+) in the toolbar. The Add Counters window is displayed.	
	4. Look for Process in the Performance object menu.	
	5. Complete one of the following actions:	
	• If you see Process in the menu, the PerfProc performance object is enabled and the problem is coming from a different source. You might need to contact IBM Software Support.	
	• If you do not see Process in the menu, use the Microsoft utility from the Microsoft.com Operations website to enable the PerfProc performance object.	
	The Process performance object becomes visible in the Performance object menu of the Add Counters windows, and IBM Tivoli Monitoring is able to detect Availability data.	
	6. Restart the monitoring agent.	

|--|

Problem	Solution
Event Log workspace events are unfiltered, are not collected more than every 60 seconds, and are removed from the Event Log Views after 1 hour of being received.	All events currently in the Application Event Log are sent to the Tivoli Enterprise Monitoring Server when the agent starts. Environment variables that control the behavior of the Event Log Workspace are stored in the agent ENV file on the Tivoli Enterprise Monitoring Agent where the agent is running. These variables are stored:
	CDP_DP_CACHE_TTL This value is the minimum number of seconds before data (for a particular table) is collected again. By default this variable is present in the ENV file and the value is set to 60.
	CDP_NT_EVENT_LOG_GET_ALL_ENTRIES_FIRST_TIME This variable determines whether the agent sends all events currently in the Application Event Log to the Tivoli Enterprise Monitoring Server when the agent starts. Legal values are YES and NO. By default this variable is present in the ENV file and the value is set to NO.
	 CDP_NT_EVENT_LOG_CACHE_TIMEOUT This variable determines how long in seconds that events are displayed in the Tivoli Enterprise Monitoring Server Event Log Views. By default, this variable is <i>not</i> present in the ENV file. A default value of 3600 (1 Hour) is used unless overridden by the presence of this variable in the agent ENV file. The minimum legal value is 300. To view or edit the agent ENV file on the Tivoli Enterprise Monitoring agent where the agent is installed, use
	Manage Tivoli Enterprise Monitoring Services to select the agent. Right-click and select Advanced - Edit ENV File . The agent must be restarted to implement changes.
The name of the attribute does not display in a bar chart or graph view.	When a chart or graph view that includes the attribute is scaled to a small size, a blank space is displayed instead of a truncated name. To see the name of the attribute, expand the view of the chart until sufficient space is available to display all characters of the attribute name.
At the 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.

Table 8	Workspace	problems	and	solutions	(continued)
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Problem	Solution
You start collection of historical data but the data cannot be seen.	 Use the following managing options for historical data collection: Basic historical data collection populates the Warehouse with raw data. This type of data collection is turned off by default. For information about managing this feature including how to set the interval at which data is collected, see <i>Managing historical data</i> in the <i>IBM Tivoli Monitoring Administrator's Guide</i>. By setting a more frequent interval for data collection, you reduce the load on the system incurred every time data is uploaded. Use the Summarization and Pruning agent to collect specific amounts and types of historical data. Historical data is not displayed until the Summarization and Pruning monitoring agent begins collecting the data. By default, this agent begins collection at 2 a.m. daily. At that point, data is visible in the workspace view. For information about how to modify the default collection settings, see <i>Managing historical data</i> in the <i>IBM Tivoli Monitoring Administrator's Guide</i>.
Historical data collection is unavailable because of incorrect queries in the Tivoli Enterprise Portal.	 The Sort By, Group By, and First/Last functions column are not compatible with the historical data collection feature. Use of these advanced functions makes a query ineligible for historical data collection. Even if data collection has started, you cannot use the time span feature if the query for the chart or table includes column functions or advanced query options (Sort By, Group By, First / Last). To ensure support of historical data collection, do not use the Sort By, Group By, or First/Last functions in your queries. For information about the historical data collection function, See Managing historical data in the IBM Tivoli Monitoring Administrator's Guide or the Tivoli Enterprise Portal online help .
When you use a long process name in the situation, the process name is truncated.	Truncation of process or service names for situations in the Availability table in the portal display is the expected behavior. The maximum name length is 100 bytes.
Regular (non-historical) monitoring data fails to be displayed.	Check the formation of the queries you use to gather data. For example, look for invalid SQL statements.
No row of data for 64-bit applications is displayed in the workspaces when the monitoring agent is running on a 64-bit operating system.	The Tivoli Enterprise Portal shows data only for 32-bit applications. No solution is available for this problem at this time.

Problem	Solution
The SNMP attribute group is not collecting data reliably. Data is collected intermittently or not at all. The SNMP version and credentials are configured correctly. The Performance Object Status Error Code for the attribute group shows "NO RESPONSE RECEIVED". Note: This problem applies to SNMP attribute groups, so the Object Type in the Performance Object Status table is SNMP. The agent trace file shows the following message: Timeout occurred. No response from agent. Here is a sample entry: (48A18C71.000A-	The IBM Tivoli Monitoring SNMP data provider is multithreaded to enhance performance. The SNMP data source that is being monitored might not be able to respond to multiple incoming requests in a timely manner. The following tuning options can improve reliability of data collections: Reduce the thread pool size The default thread pool size is 15. Try reducing the size to 5. This setting can be adjusted in the agent ENV file by setting the CDP_DP_THREAD_POOL_SIZE environment variable. Increase the SNMP Response Timeout
12:snmpqueryclass.cpp,1714, "internalCollectData") Timeout occurred. No response from agent.	 The default SNMP Timeout is 2 seconds. Try increasing the timeout to 6 seconds. This setting can be adjusted in the agent ENV file by setting the CDP_SNMP_RESPONSE_TIMEOUT environment variable. Reduce the number of SNMP retries The default number of SNMP retries is 2. Try reducing the size to 1. This setting can be adjusted in the agent ENV file by setting the CDP_SNMP_MAX_RETRIES environment variable.
Navigator items and workspace titles are labeled with internal names such as Kxx:KXX0000 instead of the correct names (such as Disk), where XX and xx represent the two-character agent code.	Ensure that application support has been added on the monitoring server, portal server, and portal client. For more information about installing application support, see <i>Installing and enabling application support</i> in the <i>IBM Tivoli Monitoring Installation and Setup Guide</i> .

Situation troubleshooting

Problems can occur with situations and situation configuration.

Table 9 contains problems and solutions for situations.

Problem	Solution
Monitoring activity requires too much disk space.	Check the RAS trace logging settings that are described in "Setting RAS trace parameters by using the GUI" on page 159. For example, trace logs grow rapidly when you apply the ALL logging option.
Monitoring activity requires too many system resources.	"Disk capacity planning for historical data" on page 139 describes the performance impact of specific attribute groups. If possible, decrease your use of the attribute groups that require greater system resources.
A formula that uses mathematical operators appears to be incorrect. For example, if you were monitoring a Linux system, the formula that calculates when Free Memory falls under 10 percent of Total Memory does not work: LT #'Linux_VM_Stats.Total_Memory' / 10	This formula is incorrect because situation predicates support only logical operators. Your formulas cannot have mathematical operators. Note: The Situation Editor provides alternatives to math operators. In the example, you can select the % Memory Free attribute and avoid the need for math operators.

Table 9. Situation problems and solutions (continued)

Problem	Solution
You want to change the appearance of situations when they are displayed in the navigation tree.	 Right-click an item in the navigation tree. Click Situations in the menu. The Situation Editor window is displayed. Select the situation that you want to modify. Use the State menu to set the status and appearance of the Situation when it triggers. Note: The State setting is not related to severity settings in the Tivoli Enterprise Console.
When a situation is triggered in the Event Log attribute group, it remains in the Situation Event Console as long as the event ID entry is present in the Event Log workspace. When this event ID entry is removed from the Event Log workspace on the Tivoli Enterprise Portal, the situation is also cleared even if the actual problem that caused the event is not resolved, and the event ID entry is also present in the Windows Event Viewer.	A timeout occurs on the cache of events for the NT Event Log group. Increase the cache time of Event Log collection to meet your requirements by adding the following variable and timeout value to the KpcENV file for the agent (where pc is the two-letter product code): CDP_NT_EVENT_LOG_CACHE_TIMEOUT=3600 This variable determines how long events from the NT Event Log are kept.
For a situation that uses the 'MISSING' operator and is distributed to a remote agentless monitoring subnode, no indication is displayed in the Tivoli Enterprise Portal or in the Situation Event Console when the situation becomes true.	The MISSING predicate is currently not supported on subnodes. If a situation with a MISSING predicate is distributed to a subnode, the agent cannot tell which subnode or node the event is occurring on. It inserts the system name as the origin node for the event and returns. When the event reaches the Tivoli Enterprise Portal Server, the origin node does not match the system name of the subnode where the situation is associated, so the event is dropped.
The situation for a specific agent is not visible in the Tivoli Enterprise Portal.	Open the Situation Editor. Access the All managed servers view. If the situation is not displayed, confirm that the monitoring server has been seeded for the agent. If not, seed the server, as described in the <i>IBM Tivoli</i> <i>Monitoring Installation and Setup Guide</i> .
The monitoring interval is too long.	Access the Situation Editor view for the situation that you want to modify. Check the Sampling interval area in the Formula tab. Adjust the time interval as required.
The situation did not activate at startup.	 Manually recycle the situation as follows: 1. Right-click the situation and select Stop Situation. 2. Right-click the situation and select Start Situation. Note: You can permanently avoid this problem by selecting the Run at Startup check box of the Situation Editor view for a specific situation.
The situation is not displayed.	Click the Action tab and check whether the situation has an automated corrective action. This action can occur directly or through a policy. The situation might be resolving so quickly that you do not see the event or the update in the graphical user interface.
An Alert event did not occur even though the predicate was correctly specified.	Check the logs, reports, and workspaces.
A situation fires on an unexpected managed object.	Confirm that you distributed and started the situation on the correct managed system.
The product did not distribute the situation to a managed system.	Click the Distribution tab and check the distribution settings for the situation.

Problem	Solution
The situation does not fire.	This problem can be caused when incorrect predicates are present in the formula that defines the situation. For example, the managed object shows a state that normally triggers a monitoring event, but the situation is not true because the wrong attribute is specified in the formula.
	In the Formula tab, analyze predicates as follows:
	1. Click the fx icon in the Formula area. The Show formula window is displayed.
	a. Confirm the following details in the Formula area of the window:
	 The attributes that you intend to monitor are specified in the formula.
	 The situations that you intend to monitor are specified in the formula.
	 The logical operators in the formula match your monitoring goal.
	 The numeric values in the formula match your monitoring goal.
	b. (Optional) Select the Show detailed formula check box to see the original names of attributes in the application or operating system that you are monitoring.
	c. Click OK to dismiss the Show formula window.
	 (Optional) In the Formula area of the Formula tab, temporarily assign numeric values that immediately trigger a monitoring event. The triggering of the event confirms that other predicates in the formula are valid. Note: After you complete this test, you must restore the numeric values to valid levels so that you do not generate excessive monitoring data based on your temporary settings.
	For additional information about situations that do not fire, see <i>Situations are not firing</i> in the <i>IBM Tivoli Monitoring Troubleshooting Guide</i> .
Situation events are not displayed in the Events Console view of the workspace.	Associate the situation with a Navigator item. Note: The situation does not need to be displayed in the workspace. It is sufficient that the situation is associated with any Navigator item.
You do not have access to a situation.	Note: You must have administrator privileges to complete these steps.
	1. Click Edit > Administer Users to access the Administer Users window.
	2. In the Users area, select the user whose privileges you want to modify.
	 In the Permissions tab, Applications tab, and Navigator Views tab, select the permissions or privileges that correspond to the user role. Click OK.

 Table 9. Situation problems and solutions (continued)

Table 9. Situation problems and solutions (continued)

Problem	Solution
A managed system seems to be offline.	1. Select Physical View and click the Enterprise Level of the navigator tree.
	 Click View > Workspace > Managed System Status to see a list of managed systems and their status.
	3 . If a system is offline, check network connectivity and the status of the specific system or application.

Take Action commands troubleshooting

Problems can occur with Take Action commands.

Table 10 contains problems and solutions that can occur with Take Action commands.

When each Take Action command runs, it generates a log file listed in Table 3 on page 155.

Table 10. Take Action commands problems and solutions

Problem	Solution
Take Action commands often require several minutes to complete.	Allow several minutes. If you do not see a message advising you of completion, try to run the command manually.
Situations fail to trigger Take Action commands.	Attempt to manually run the Take Action command in the Tivoli Enterprise Portal. If the Take Action command works, look for configuration problems in the situation. See "Situation troubleshooting" on page 177. If the Take Action command fails, for general information about troubleshooting Take Action commands, see the <i>IBM</i> <i>Tivoli Monitoring Troubleshooting Guide</i> .

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).

Informational, warning, and error messages overview

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

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

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

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

Message format

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

IBM Tivoli Agentless Monitoring for Windows Operating Systems messages have the following format:

Message ID and text Explanation Operator Response

The message ID has the following format: CCC####severity

where:

- **CCC** Prefix that indicates the component to which the message applies. The following components are used:
 - KR2 General Agentless Monitor for Windows messages
 - #### Number of the message

severity

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

- I Informational messages provide feedback about something that happened in the product or system that might be important. These messages can provide guidance when you are requesting a specific action from the product.
- **W** Warning messages call your attention to an exception condition. The condition might not be an error but can cause problems if not resolved.
- **E** Error messages indicate that an action cannot be completed because of a user or system error. These messages require user response.

The *Text* of the message provides a general statement regarding the problem or condition that occurred. The *Explanation* provides additional information about the message and the possible cause for the condition. The *Operator Response* provides actions to take in response to the condition, particularly for error messages (messages with the "E" suffix).

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

Agent messages

The following messages apply to IBM Tivoli Agentless Monitoring for Windows Operating Systems.

KR25001I

The request to start SNMP data collection was sent successfully.

Explanation:

The agent has begun collecting responses from the specified remote endpoint system.

Operator response: None.

KR25002E

Could not perform the requested SNMP data collection start action. The InstanceName you specified is already configured.

Explanation:

The task could not be performed as requested.

Operator response:

None.

KR25003E

Could not perform the requested SNMP data collection start action. The InstanceName you specified does not exist.

Explanation:

The task could not be performed as requested.

Operator response:

None.

KR25004E

Could not perform the requested SNMP data collection start action. The InstanceName was not specified.

Explanation:

The task could not be performed as requested.

Operator response:

None.

KR25005E

Could not perform the requested SNMP data collection start action. The InstanceName is invalid.

Explanation:

The task could not be performed as requested.

Operator response:

None.

KR25006E

Could not perform the requested SNMP data collection start action. The InstanceName you specified does not exist.

Explanation:

The task could not be performed as requested.

Operator response: None.

KR25007E

Could not perform the requested SNMP data collection start action. The InstanceName is invalid.

Explanation:

The task could not be performed as requested.

Operator response:

None.

KR25008E

Could not perform the requested SNMP data collection start action. The Configuration file could not be opened.

Explanation:

The task could not be performed as requested.

Operator response:

None.

KR25009E

Could not perform the requested SNMP data collection start action. No parameters were specified.

Explanation:

The task could not be performed as requested.

Operator response:

None.

KR25010I

The request to stop SNMP data collection was sent successfully.

Explanation:

The agent will no longer collecting responses from the specified remote endpoint system.

Operator response:

None.

KR25011E

Could not perform the requested SNMP data collection stop action. The InstanceName you specified is already configured.

Explanation:

The task could not be performed as requested.

Operator response:

None.

KR25012E

Could not perform the requested SNMP data collection stop action. The InstanceName you specified does not exist.

Explanation:

The task could not be performed as requested.

Operator response:

None.

KR25013E

Could not perform the requested SNMP data collection stop action. The InstanceName was not specified.

Explanation:

The task could not be performed as requested.

Operator response:

None.

KR25014E

Could not perform the requested SNMP data collection stop action. The InstanceName is invalid.

Explanation:

The task could not be performed as requested.

Operator response:

None.

KR25015E

Could not perform the requested SNMP data collection stop action. The InstanceName you specified does not exist.

Explanation:

The task could not be performed as requested.

Operator response:

None.

KR25016E

Could not perform the requested SNMP data collection stop action. The InstanceName is invalid.

Explanation:

The task could not be performed as requested.

Operator response:

None.

KR25017E

Could not perform the requested SNMP data collection stop action. The Configuration file could not be opened.

Explanation:

The task could not be performed as requested.

Operator response:

None.

KR25018E

Could not perform the requested SNMP data collection stop action. No parameters were specified.

Explanation:

The task could not be performed as requested.

Operator response:

None.

Appendix A. Event mapping

The Tivoli Event Integration Facility (EIF) interface is used to forward situation events to Tivoli Netcool/OMNIbus or Tivoli Enterprise Console.

EIF events specify an event class, and the event data is specified as name-value pairs that identify the name of an event slot and the value for the slot. An event class can have subclasses. IBM Tivoli Monitoring provides the base event class definitions and a set of base slots that are included in all monitoring events. Agents extend the base event classes to define subclasses that include agent-specific slots. For Agentless Monitor for Windows events, the event classes correspond to the agent attribute groups, and the agent-specific slots correspond to the attributes in the attribute group.

The situation editor in the Tivoli Enterprise Portal can be used to perform custom mapping of data to EIF slots instead of using the default mapping described in this topic. For more information about EIF slot customization, see the *Tivoli Enterprise Portal User's Guide*.

Tivoli Enterprise Console requires that event classes and their slots are defined in BAROC (Basic Recorder of Objects in C) files. Each agent provides a BAROC file that contains event class definitions for the agent and is installed on the Tivoli Enterprise Monitoring Server in the TECLIB directory (install_dir/cms/ TECLIB for Windows systems and install_dir/tables/TEMS_hostname/TECLIB for UNIX systems) when application support for the agent is installed. The BAROC file for the agent and the base BAROC files provided with Tivoli Monitoring must also be installed onto the Tivoli Enterprise Console. For details, see "Setting up event forwarding to Tivoli Enterprise Console" in the *IBM Tivoli Monitoring Installation and Setup Guide*.

Each of the event classes is a child of KR2_Base and is defined in the kr2.baroc (version 06.20.10) file. The KR2_Base event class can be used for generic rules processing for any event from the IBM Tivoli Agentless Monitoring for Windows Operating Systems.

For events that are generated by situations in the Computer System attribute group, events are sent by using the ITM_KR2_COMPUTER_SYSTEM event class. This event class contains the following slots:

- node: STRING
- timestamp: STRING
- description: STRING
- domain: STRING
- manufacturer: STRING
- model: STRING
- name: STRING
- number_of_processors: INTEGER
- number_of_processors_enum: STRING
- primary_owner_contact: STRING
- primary_owner_name: STRING
- kr2_status: STRING
- total_physical_memory: REAL
- total_physical_memory_enum: STRING
- user_name: STRING
- workgroup: STRING

For events that are generated by situations in the Disk attribute group, events are sent by using the ITM_KR2_DISK event class. This event class contains the following slots:

- node: STRING
- timestamp: STRING
- index: INTEGER
- index_enum: STRING
- disk_type: STRING
- name: STRING
- block_size: INTEGER
- block_size_enum: STRING
- total_blocks: REAL
- total_blocks_enum: STRING
- used_blocks: REAL
- used_blocks_enum: STRING
- disk_allocation_failures: INTEGER
- disk_allocation_failures_enum: STRING
- free_blocks: REAL
- free_blocks_enum: STRING
- total_disk_space_mb: INTEGER
- total_disk_space_mb_enum: STRING
- used_disk_space_mb: INTEGER
- used_disk_space_mb_enum: STRING
- available_disk_space_mb: INTEGER
- available_disk_space_mb_enum: STRING
- percentage_of_used_disk_space: REAL
- percentage_of_used_disk_space_enum: STRING
- percentage_of_available_disk_space: REAL
- percentage_of_available_disk_space_enum: STRING

For events that are generated by situations in the hrDeviceTable attribute group, events are sent by using the ITM_KR2_HRDEVICETABLE event class. This event class contains the following slots:

- node: STRING
- timestamp: STRING
- hrdeviceindex: INTEGER
- hrdeviceindex_enum: STRING
- description: STRING
- device_id: STRING
- kr2_status: INTEGER
- kr2_status_enum: STRING
- errors: INTEGER
- errors_enum: STRING

For events that are generated by situations in the hrProcessor attribute group, events are sent by using the ITM_KR2_HRPROCESSOR event class. This event class contains the following slots:

- node: STRING
- timestamp: STRING

- firmware_id: STRING
- hrprocessordeviceindex: INTEGER
- hrprocessordeviceindex_enum: STRING
- cpu_used_pct: INTEGER
- cpu_used_pct_enum: STRING
- cpu_idle_pct: INTEGER
- cpu_idle_pct_enum: STRING
- hrdeviceindex: INTEGER
- hrdeviceindex_enum: STRING
- description: STRING
- device_id: STRING
- kr2_status: INTEGER
- kr2_status_enum: STRING
- errors: INTEGER
- errors_enum: STRING

For events that are generated by situations in the hrProcessorTable attribute group, events are sent by using the ITM_KR2_HRPROCESSORTABLE event class. This event class contains the following slots:

- node: STRING
- timestamp: STRING
- firmware_id: STRING
- hrprocessordeviceindex: INTEGER
- hrprocessordeviceindex_enum: STRING
- cpu_used_pct: INTEGER
- cpu_used_pct_enum: STRING
- cpu_idle_pct: INTEGER
- cpu_idle_pct_enum: STRING

For events that are generated by situations in the hrStorageTable attribute group, events are sent by using the ITM_KR2_HRSTORAGETABLE event class. This event class contains the following slots:

- node: STRING
- timestamp: STRING
- index: INTEGER
- index_enum: STRING
- disk_type: STRING
- name: STRING
- block_size: INTEGER
- block_size_enum: STRING
- total_blocks: REAL
- total_blocks_enum: STRING
- used_blocks: REAL
- used_blocks_enum: STRING
- disk_allocation_failures: INTEGER
- disk_allocation_failures_enum: STRING

For events that are generated by situations in the hrSystem attribute group, events are sent by using the ITM_KR2_HRSYSTEM event class. This event class contains the following slots:

- node: STRING
- timestamp: STRING
- uptime: STRING
- system_date: STRING
- current_user_logins: INTEGER
- current_user_logins_enum: STRING
- total_running_processes: INTEGER
- total_running_processes_enum: STRING
- maximum_allowed_processes: INTEGER
- maximum_allowed_processes_enum: STRING
- allowed_processes_pct: INTEGER
- allowed_processes_pct_enum: STRING
- system_location: STRING
- system_contact: STRING
- system_description: STRING
- name: STRING

For events that are generated by situations in the Logical Disk attribute group, events are sent by using the ITM_KR2_LOGICAL_DISK event class. This event class contains the following slots:

- node: STRING
- timestamp: STRING
- free_megabytes: INTEGER
- free_megabytes_enum: STRING
- pct_free_space: INTEGER
- pct_free_space_enum: STRING
- pct_used_space: INTEGER
- pct_used_space_enum: STRING
- pct_disk_read_time: INTEGER
- pct_disk_read_time_enum: STRING
- pct_disk_write_time: INTEGER
- pct_disk_write_time_enum: STRING
- pct_disk_time: INTEGER
- pct_disk_time_enum: STRING
- disk_bytes_per_sec: REAL
- disk_bytes_per_sec_enum: STRING
- disk_read_bytes_per_sec: REAL
- disk_read_bytes_per_sec_enum: STRING
- disk_reads_per_sec: INTEGER
- disk_reads_per_sec_enum: STRING
- disk_transfers_per_sec: INTEGER
- disk_transfers_per_sec_enum: STRING
- disk_write_bytes_per_sec: INTEGER
- disk_write_bytes_per_sec_enum: STRING
- disk_writes_per_sec: INTEGER
- disk_writes_per_sec_enum: STRING

• name: STRING

For events that are generated by situations in the Managed Systems SNMP attribute group, events are sent by using the ITM_KR2_MANAGED_SYSTEMS_SNMP event class. This event class contains the following slots:

- node: STRING
- timestamp: STRING
- subnode_msn: STRING
- subnode_affinity: STRING
- subnode_type: STRING
- subnode_resource_name: STRING
- subnode_version: STRING

For events that are generated by situations in the Managed Systems WMI attribute group, events are sent by using the ITM_KR2_MANAGED_SYSTEMS_WMI event class. This event class contains the following slots:

- node: STRING
- timestamp: STRING
- subnode_msn: STRING
- subnode_affinity: STRING
- subnode_type: STRING
- subnode_resource_name: STRING
- subnode_version: STRING

For events that are generated by situations in the Memory attribute group, events are sent by using the ITM_KR2_MEMORY event class. This event class contains the following slots:

- node: STRING
- timestamp: STRING
- index: INTEGER
- index_enum: STRING
- memory_type: STRING
- description: STRING
- block_size: INTEGER
- block_size_enum: STRING
- total_memory_blocks: REAL
- total_memory_blocks_enum: STRING
- used_memory_blocks: REAL
- used_memory_blocks_enum: STRING
- memory_allocation_failures: INTEGER
- memory_allocation_failures_enum: STRING
- free_memory_blocks: REAL
- free_memory_blocks_enum: STRING
- total_memory_mb: INTEGER
- total_memory_mb_enum: STRING
- used_memory_mb: INTEGER
- used_memory_mb_enum: STRING
- available_memory_mb: INTEGER

- available_memory_mb_enum: STRING
- percentage_of_used_memory: REAL
- percentage_of_used_memory_enum: STRING
- percentage_of_available_memory: REAL
- percentage_of_available_memory_enum: STRING

For events that are generated by situations in the Network attribute group, events are sent by using the ITM_KR2_NETWORK event class. This event class contains the following slots:

- node: STRING
- timestamp: STRING
- index: INTEGER
- index_enum: STRING
- description: STRING
- type: INTEGER
- type_enum: STRING
- mtu: INTEGER
- mtu_enum: STRING
- speed_bps: INTEGER
- speed_bps_enum: STRING
- mac_address: STRING
- administrative_status: INTEGER
- administrative_status_enum: STRING
- operational_status: INTEGER
- operational_status_enum: STRING
- bytes_in_per_sec: INTEGER
- bytes_in_per_sec_enum: STRING
- inbound_discarded_packets: INTEGER
- inbound_discarded_packets_enum: STRING
- inbound_packet_errors: INTEGER
- inbound_packet_errors_enum: STRING
- inbound_protocol_errors: INTEGER
- inbound_protocol_errors_enum: STRING
- bytes_out_per_sec: INTEGER
- bytes_out_per_sec_enum: STRING
- outbound_discarded_packets: INTEGER
- outbound_discarded_packets_enum: STRING
- outbound_packet_errors: INTEGER
- outbound_packet_errors_enum: STRING

For events that are generated by situations in the Network Interfaces attribute group, events are sent by using the ITM_KR2_NETWORK_INTERFACES event class. This event class contains the following slots:

- node: STRING
- timestamp: STRING
- bytes_received_sec: REAL
- bytes_received_sec_enum: STRING
- bytes_sent_sec: REAL

- bytes_sent_sec_enum: STRING
- bytes_total_sec: REAL
- bytes_total_sec_enum: STRING
- current_bandwidth: INTEGER
- current_bandwidth_enum: STRING
- packets_sec: REAL
- packets_sec_enum: STRING
- packets_outbound_discarded: REAL
- packets_outbound_discarded_enum: STRING
- packets_outbound_errors: REAL
- packets_outbound_errors_enum: STRING
- packets_received_sec: REAL
- packets_received_sec_enum: STRING
- packets_received_discarded: REAL
- packets_received_discarded_enum: STRING
- packets_received_errors: REAL
- packets_received_errors_enum: STRING
- packets_received_unknown: REAL
- packets_received_unknown_enum: STRING
- packets_sent_sec: REAL
- packets_sent_sec_enum: STRING
- name: STRING

For events that are generated by situations in the Operating System attribute group, events are sent by using the ITM_KR2_OPERATING_SYSTEM event class. This event class contains the following slots:

- node: STRING
- timestamp: STRING
- description: STRING
- free_physical_memory_kbytes: REAL
- free_physical_memory_kbytes_enum: STRING
- total_virtual_memory_kbytes: REAL
- total_virtual_memory_kbytes_enum: STRING
- free_virtual_memory_kbytes: REAL
- free_virtual_memory_kbytes_enum: STRING
- used_virtual_memory_kbytes: REAL
- used_virtual_memory_kbytes_enum: STRING
- pct_used_virtual_memory: INTEGER
- pct_used_virtual_memory_enum: STRING
- pct_free_virtual_memory: INTEGER
- pct_free_virtual_memory_enum: STRING
- manufacturer: STRING
- name: STRING
- number_of_processes: INTEGER
- number_of_processes_enum: STRING
- number_of_users: INTEGER

- number_of_users_enum: STRING
- os_type: INTEGER
- os_type_enum: STRING
- kr2_status: STRING
- os_version: STRING

For events that are generated by situations in the Page File Usage Details attribute group, events are sent by using the ITM_KR2_PAGE_FILE_USAGE_DETAILS event class. This event class contains the following slots:

- node: STRING
- timestamp: STRING
- caption: STRING
- currentusage: INTEGER
- currentusage_enum: STRING
- description: STRING
- install_date: STRING
- name: STRING
- kr2_status: STRING

For events that are generated by situations in the Paging File Summary attribute group, events are sent by using the ITM_KR2_PAGING_FILE_SUMMARY event class. This event class contains the following slots:

- node: STRING
- timestamp: STRING
- pct_usage: INTEGER
- pct_usage_enum: STRING
- pct_usage_peak: INTEGER
- pct_usage_peak_enum: STRING
- pct_free: INTEGER
- pct_free_enum: STRING
- name: STRING

For events that are generated by situations in the Performance Object Status attribute group, events are sent by using the ITM_KR2_PERFORMANCE_OBJECT_STATUS event class. This event class contains the following slots:

- node: STRING
- timestamp: STRING
- query_name: STRING
- object_name: STRING
- object_type: INTEGER
- object_type_enum: STRING
- object_status: INTEGER
- object_status_enum: STRING
- error_code: INTEGER
- error_code_enum: STRING
- last_collection_start: STRING
- last_collection_start_enum: STRING

- last_collection_finished: STRING
- last_collection_finished_enum: STRING
- last_collection_duration: REAL
- average_collection_duration: REAL
- average_collection_duration_enum: STRING
- refresh_interval: INTEGER
- number_of_collections: INTEGER
- cache_hits: INTEGER
- cache_misses: INTEGER
- cache_hit_percent: REAL
- intervals_skipped: INTEGER

For events that are generated by situations in the Physical Disk attribute group, events are sent by using the ITM_KR2_PHYSICAL_DISK event class. This event class contains the following slots:

- node: STRING
- timestamp: STRING
- pct_disk_read_time: INTEGER
- pct_disk_read_time_enum: STRING
- pct_disk_write_time: INTEGER
- pct_disk_write_time_enum: STRING
- pct_disk_time: INTEGER
- pct_disk_time_enum: STRING
- diskreadspersec: INTEGER
- diskreadspersec_enum: STRING
- diskwritespersec: INTEGER
- diskwritespersec_enum: STRING
- disktransferspersec: INTEGER
- disktransferspersec_enum: STRING
- diskreadbytespersec: INTEGER
- diskreadbytespersec_enum: STRING
- diskwritebytespersec: INTEGER
- diskwritebytespersec_enum: STRING
- diskbytespersec: REAL
- diskbytespersec_enum: STRING
- avg_disk_bytes_per_read: REAL
- avg_disk_bytes_per_read_enum: STRING
- avg_disk_bytes_per_write: REAL
- avg_disk_bytes_per_write_enum: STRING
- avg_disk_bytes_per_transfer: REAL
- avg_disk_bytes_per_transfer_enum: STRING
- name: STRING

For events that are generated by situations in the Physical Memory attribute group, events are sent by using the ITM_KR2_PHYSICAL_MEMORY event class. This event class contains the following slots:

- node: STRING
- timestamp: STRING

- bank_label: STRING
- capacity: REAL
- capacity_enum: STRING
- caption: STRING
- data_width: INTEGER
- data_width_enum: STRING
- description: STRING
- hot_swappable: INTEGER
- hot_swappable_enum: STRING
- install_date: STRING
- manufacturer: STRING
- memory_type: INTEGER
- memory_type_enum: STRING
- model: STRING
- name: STRING
- poweredon: INTEGER
- poweredon_enum: STRING
- removable: INTEGER
- removable_enum: STRING
- replaceable: INTEGER
- replaceable_enum: STRING
- serial_number: STRING
- sku: STRING
- speed: INTEGER
- speed_enum: STRING
- kr2_status: STRING
- tag: STRING

For events that are generated by situations in the Process attribute group, events are sent by using the ITM_KR2_PROCESS event class. This event class contains the following slots:

- node: STRING
- timestamp: STRING
- pct_privileged_time: INTEGER
- pct_privileged_time_enum: STRING
- pct_processor_time: INTEGER
- pct_processor_time_enum: STRING
- pct_user_time: INTEGER
- pct_user_time_enum: STRING
- elapsed_time_in_seconds: INTEGER
- elapsed_time_in_seconds_enum: STRING
- handle_count: REAL
- handle_count_enum: STRING
- process_id: INTEGER
- process_id_enum: STRING
- page_faults_sec: REAL

- page_faults_sec_enum: STRING
- page_file_kbytes: REAL
- page_file_kbytes_enum: STRING
- page_file_kbytes_peak: REAL
- page_file_kbytes_peak_enum: STRING
- pool_nonpaged_kbytes: REAL
- pool_nonpaged_kbytes_enum: STRING
- pool_paged_kbytes: REAL
- pool_paged_kbytes_enum: STRING
- priority_base: INTEGER
- priority_base_enum: STRING
- private_kbytes: REAL
- private_kbytes_enum: STRING
- thread_count: INTEGER
- thread_count_enum: STRING
- virtual_kbytes: REAL
- virtual_kbytes_enum: STRING
- virtual_kbytes_peak: REAL
- virtual_kbytes_peak_enum: STRING
- working_set_kbytes: REAL
- working_set_kbytes_enum: STRING
- working_set_peak_kbytes: REAL
- working_set_peak_kbytes_enum: STRING
- name: STRING

For events that are generated by situations in the Processes attribute group, events are sent by using the ITM_KR2_PROCESSES event class. This event class contains the following slots:

- node: STRING
- timestamp: STRING
- process_id: INTEGER
- process_id_enum: STRING
- name: STRING
- path: STRING
- parameters: STRING
- type: INTEGER
- type_enum: STRING
- kr2_status: INTEGER
- kr2_status_enum: STRING
- cumulative_cpu_time: REAL
- cumulative_cpu_time_enum: STRING
- memory_utilization_kb: INTEGER
- memory_utilization_kb_enum: STRING

For events that are generated by situations in the Processor attribute group, events are sent by using the ITM_KR2_PROCESSOR event class. This event class contains the following slots:

• node: STRING

- timestamp: STRING
- pct_dpc_time: INTEGER
- pct_dpc_time_enum: STRING
- pct_interrupt_time: INTEGER
- pct_interrupt_time_enum: STRING
- pct_privileged_time: INTEGER
- pct_privileged_time_enum: STRING
- pct_processor_time: INTEGER
- pct_processor_time_enum: STRING
- pct_user_time: INTEGER
- pct_user_time_enum: STRING
- interrupts_sec: INTEGER
- interrupts_sec_enum: STRING
- name: STRING

For events that are generated by situations in the Processor Details attribute group, events are sent by using the ITM_KR2_PROCESSOR_DETAILS event class. This event class contains the following slots:

- node: STRING
- timestamp: STRING
- architecture: INTEGER
- architecture_enum: STRING
- availability: INTEGER
- availability_enum: STRING
- caption: STRING
- configuration_manager_error_code: INTEGER
- configuration_manager_error_code_enum: STRING
- cpu_status: INTEGER
- cpu_status_enum: STRING
- description: STRING
- name: STRING

For events that are generated by situations in the Processor Utilization Total attribute group, events are sent by using the ITM_KR2_PROCESSOR_UTILIZATION_TOTAL event class. This event class contains the following slots:

- node: STRING
- timestamp: STRING
- maximum: INTEGER
- maximum_enum: STRING
- minimum: INTEGER
- minimum_enum: STRING
- average: INTEGER
- average_enum: STRING
- average_idle: INTEGER
- average_idle_enum: STRING

For events that are generated by situations in the System attribute group, events are sent by using the ITM_KR2_SYSTEM event class. This event class contains the following slots:

- node: STRING
- timestamp: STRING
- context_switches_sec: INTEGER
- context_switches_sec_enum: STRING
- exception_dispatches_sec: INTEGER
- exception_dispatches_sec_enum: STRING
- file_control_bytes_sec: REAL
- file_control_bytes_sec_enum: STRING
- file_control_operations_sec: INTEGER
- file_control_operations_sec_enum: STRING
- file_data_operations_sec: INTEGER
- file_data_operations_sec_enum: STRING
- file_read_bytes_sec: REAL
- file_read_bytes_sec_enum: STRING
- file_read_operations_sec: INTEGER
- file_read_operations_sec_enum: STRING
- file_write_bytes_sec: REAL
- file_write_bytes_sec_enum: STRING
- file_write_operations_sec: INTEGER
- file_write_operations_sec_enum: STRING
- floating_emulations_sec: INTEGER
- floating_emulations_sec_enum: STRING
- total_processes: INTEGER
- total_processes_enum: STRING
- system_up_time_sec: REAL
- system_up_time_sec_enum: STRING
- system_up_time_days: INTEGER
- system_up_time_days_enum: STRING

For events that are generated by situations in the Terminal Services attribute group, events are sent by using the ITM_KR2_TERMINAL_SERVICES event class. This event class contains the following slots:

- node: STRING
- timestamp: STRING
- active_sessions: INTEGER
- active_sessions_enum: STRING
- inactive_sessions: INTEGER
- inactive_sessions_enum: STRING
- total_sessions: INTEGER
- total_sessions_enum: STRING
- active_sessions_pct: INTEGER
- active_sessions_pct_enum: STRING
- inactive_sessions_pct: INTEGER
- inactive_sessions_pct_enum: STRING

For events that are generated by situations in the Terminal Services Session attribute group, events are sent by using the ITM_KR2_TERMINAL_SERVICES_SESSION event class. This event class contains the following slots:

- node: STRING
- timestamp: STRING
- pct_privileged_time: INTEGER
- pct_privileged_time_enum: STRING
- pct_processor_time: INTEGER
- pct_processor_time_enum: STRING
- pct_user_time: INTEGER
- pct_user_time_enum: STRING
- name: STRING

For events that are generated by situations in the Terminal Services Session Memory attribute group, events are sent by using the ITM_KR2_TERMINAL_SERVICES_SESSION_MEMORY event class. This event class contains the following slots:

- node: STRING
- timestamp: STRING
- name: STRING
- private_kbytes: REAL
- private_kbytes_enum: STRING
- virtual_kbytes: REAL
- virtual_kbytes_enum: STRING
- virtual_kbytes_peak: REAL
- virtual_kbytes_peak_enum: STRING
- working_set_kbytes: REAL
- working_set_kbytes_enum: STRING
- working_set_peak_kbytes: REAL
- working_set_peak_kbytes_enum: STRING

For events that are generated by situations in the Thread Pool Status attribute group, events are sent by using the ITM_KR2_THREAD_POOL_STATUS event class. This event class contains the following slots:

- node: STRING
- timestamp: STRING
- thread_pool_size: INTEGER
- thread_pool_size_enum: STRING
- thread_pool_max_size: INTEGER
- thread_pool_max_size_enum: STRING
- thread_pool_active_threads: INTEGER
- thread_pool_active_threads_enum: STRING
- thread_pool_avg_active_threads: REAL
- thread_pool_avg_active_threads_enum: STRING
- thread_pool_min_active_threads: INTEGER
- thread_pool_min_active_threads_enum: STRING
- thread_pool_max_active_threads: INTEGER
- thread_pool_max_active_threads_enum: STRING
- thread_pool_queue_length: INTEGER

- thread_pool_queue_length_enum: STRING
- thread_pool_avg_queue_length: REAL
- thread_pool_avg_queue_length_enum: STRING
- thread_pool_min_queue_length: INTEGER
- thread_pool_min_queue_length_enum: STRING
- thread_pool_max_queue_length: INTEGER
- thread_pool_max_queue_length_enum: STRING
- thread_pool_avg_job_wait: REAL
- thread_pool_avg_job_wait_enum: STRING
- thread_pool_total_jobs: INTEGER
- thread_pool_total_jobs_enum: STRING

For events that are generated by situations in the User Accounts attribute group, events are sent by using the ITM_KR2_USER_ACCOUNTS event class. This event class contains the following slots:

- node: STRING
- timestamp: STRING
- account_type: INTEGER
- account_type_enum: STRING
- description: STRING
- disabled: INTEGER
- disabled enum: STRING
- domain: STRING
- full_name: STRING
- localaccount: INTEGER
- localaccount_enum: STRING
- lockout: INTEGER
- lockout_enum: STRING
- name: STRING
- is_password_changeable: INTEGER
- is_password_changeable_enum: STRING
- does_password_expire: INTEGER
- does_password_expire_enum: STRING
- is_password_required: INTEGER
- is_password_required_enum: STRING
- kr2_status: STRING

For events that are generated by situations in the Virtual Memory attribute group, events are sent by using the ITM_KR2_VIRTUAL_MEMORY event class. This event class contains the following slots:

- node: STRING
- timestamp: STRING
- pct_committed_bytes_in_use: INTEGER
- pct_committed_bytes_in_use_enum: STRING
- available_kbytes: REAL
- available_kbytes_enum: STRING
- cache_kbytes: REAL
- cache_kbytes_enum: STRING

- cache_kbytes_peak: REAL
- cache_kbytes_peak_enum: STRING
- cache_faults_sec: INTEGER
- cache_faults_sec_enum: STRING
- committed_kbytes: REAL
- committed_kbytes_enum: STRING
- free_system_page_table_entries: INTEGER
- free_system_page_table_entries_enum: STRING
- page_faults_sec: INTEGER
- page_faults_sec_enum: STRING
- page_reads_sec: INTEGER
- page_reads_sec_enum: STRING
- pages_input_sec: INTEGER
- pages_input_sec_enum: STRING
- pages_output_sec: INTEGER
- pages_output_sec_enum: STRING
- page_writes_sec: INTEGER
- page_writes_sec_enum: STRING
- pages_per_sec: INTEGER
- pages_per_sec_enum: STRING

For events that are generated by situations in the WIN Performance Object Status attribute group, events are sent by using the ITM_KR2_WIN_PERFORMANCE_OBJECT_STATUS event class. This event class contains the following slots:

- node: STRING
- timestamp: STRING
- query_name: STRING
- object_name: STRING
- object_type: INTEGER
- object_type_enum: STRING
- object_status: INTEGER
- object_status_enum: STRING
- error_code: INTEGER
- error_code_enum: STRING
- last_collection_start: STRING
- last_collection_start_enum: STRING
- last_collection_finished: STRING
- last_collection_finished_enum: STRING
- last_collection_duration: REAL
- average_collection_duration: REAL
- average_collection_duration_enum: STRING
- refresh_interval: INTEGER
- number_of_collections: INTEGER
- cache_hits: INTEGER
- cache_misses: INTEGER
- cache_hit_percent: REAL

• intervals_skipped: INTEGER

For events that are generated by situations in the Windows Services attribute group, events are sent by using the ITM_KR2_WINDOWS_SERVICES event class. This event class contains the following slots:

- node: STRING
- timestamp: STRING
- pause_allowed: INTEGER
- pause_allowed_enum: STRING
- stop_allowed: INTEGER
- stop_allowed_enum: STRING
- caption: STRING
- description: STRING
- desktopinteract: INTEGER
- desktopinteract_enum: STRING
- display_name: STRING
- exit_code: INTEGER
- exit_code_enum: STRING
- name: STRING
- path_name: STRING
- process_id: INTEGER
- process_id_enum: STRING
- servicespecificexitcode: INTEGER
- servicespecificexitcode_enum: STRING
- service_type: STRING
- service_type_enum: STRING
- started: INTEGER
- started_enum: STRING
- startmode: STRING
- startmode_enum: STRING
- startname: STRING
- state: STRING
- state_enum: STRING
- kr2_status: STRING
- kr2_status_enum: STRING

For events that are generated by situations in the WMI Event Log attribute group, events are sent by using the ITM_KR2_WMI_EVENT_LOG event class. This event class contains the following slots:

- node: STRING
- log_name: STRING
- event_source: STRING
- event_type: INTEGER
- event_type_enum: STRING
- event_id: INTEGER
- event_category: STRING
- event_category_enum: STRING
- message: STRING

- time_generated: STRING
- event_level: STRING
- event_level_enum: STRING
- event_keywords: STRING
- event_keywords_enum: STRING
- event_api_version: INTEGER
- event_api_version_enum: STRING

For events that are generated by situations in the WMI Performance Object Status attribute group, events are sent by using the ITM_KR2_WMI_PERFORMANCE_OBJECT_STATUS event class. This event class contains the following slots:

- node: STRING
- timestamp: STRING
- query_name: STRING
- object_name: STRING
- object_type: INTEGER
- object_type_enum: STRING
- object_status: INTEGER
- object_status_enum: STRING
- error_code: INTEGER
- error_code_enum: STRING
- last_collection_start: STRING
- last_collection_start_enum: STRING
- last_collection_finished: STRING
- last_collection_finished_enum: STRING
- last_collection_duration: REAL
- average_collection_duration: REAL
- average_collection_duration_enum: STRING
- refresh_interval: INTEGER
- number_of_collections: INTEGER
- cache_hits: INTEGER
- cache_misses: INTEGER
- cache_hit_percent: REAL
- intervals_skipped: INTEGER

Appendix B. Documentation library

A variety of publications are relevant to the use of the IBM Tivoli Agentless Monitoring for Windows Operating Systems.

The *IBM Tivoli Monitoring*, *OMEGAMON XE*, *and Composite Application Manager products: Documentation Guide* contains information about accessing and using publications. You can find the Documentation Guide in the following information centers:

- IBM Tivoli Monitoring and OMEGAMON[®] XE (http://publib.boulder.ibm.com/infocenter/tivihelp/ v15r1/index.jsp)
- IBM Tivoli Composite Application Manager (http://publib.boulder.ibm.com/infocenter/tivihelp/ v24r1/index.jsp)

To open the Documentation Guide in the information center, select **Using the publications** in the **Contents** pane.

To find a list of new and changed publications, click **What's new in the information center** 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 Agentless Monitoring for Windows Operating Systems library

The documentation for this agent and other product components is located in the IBM Tivoli Monitoring Information Center (http://pic.dhe.ibm.com/infocenter/tivihelp/v61r1/index.jsp).

One document is specific to the IBM Tivoli Agentless Monitoring for Windows Operating Systems: IBM Tivoli Agentless Monitoring for Windows Operating Systems User's Guide. This publication provides agent-specific information for configuring, using, and troubleshooting the Agentless Monitor for Windows.

The *Offering Guide* also provides information about installing and configuring the component products in the offering.

The **Prerequisites** topic in the information center contains information about the prerequisites for each component.

Use the information in the user's guide for the agent with the *Tivoli Enterprise Portal User's Guide* to monitor Windows Operating Systems resources.

Prerequisite publications

To use the information in this publication effectively, you must have some prerequisite knowledge.

See the following publications to gain the required prerequisite knowledge:

- IBM Tivoli Monitoring Administrator's Guide
- IBM Tivoli Monitoring Agent Builder User's Guide
- IBM Tivoli Monitoring Command Reference
- IBM Tivoli Management Services on z/OS: Configuring the Tivoli Enterprise Monitoring Server on z/OS
- IBM Tivoli Monitoring Installation and Setup Guide

- IBM Tivoli Monitoring High Availability Guide for Distributed Systems
- IBM Tivoli Monitoring: Messages
- IBM Tivoli Monitoring Troubleshooting Guide
- IBM Tivoli Monitoring Universal Agent User's Guide
- IBM Tivoli Universal Agent API and Command Programming Reference Guide
- IBM Tivoli Monitoring: i5/OS[™] Agent User's Guide
- IBM Tivoli Monitoring: Linux OS Agent User's Guide
- IBM Tivoli Monitoring: UNIX OS Agent User's Guide
- IBM Tivoli Monitoring: UNIX Logs OS Agent User's
- IBM Tivoli Monitoring: Windows OS Agent User's Guide
- Tivoli Enterprise Portal User's Guide
- IBM Tivoli Performance Analyzer User's Guide
- IBM Tivoli Warehouse Proxy Agent User's Guide
- IBM Tivoli Warehouse Summarization and Pruning Agent User's Guide

Related publications

The publications in related information centers provide useful information.

See the following information centers, which you can find by accessing Tivoli Documentation Central (http://www.ibm.com/developerworks/wikis/display/tivolidoccentral/Home):

- IBM Tivoli Monitoring
- IBM Tivoli Netcool/OMNIbus
- IBM Tivoli Application Dependency Discovery Manager
- IBM Tivoli Enterprise Console

Other sources of documentation

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

See the following sources of technical documentation about monitoring products:

• Service Management Connect (SMC)

See the introductory information about SMC (http://www.ibm.com/developerworks/ servicemanagement/).

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

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

- Become involved with transparent development, an ongoing, open engagement between 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.
- IBM Integrated Service Management Library (http://www.ibm.com/software/brandcatalog/ ismlibrary/) is an online catalog that contains integration documentation as well as other downloadable product extensions.

- IBM Redbook publications (http://www.redbooks.ibm.com/) include Redbooks[®] publications, Redpapers, and Redbooks technotes that provide information about products from platform and solution perspectives.
- Technotes (http://www.ibm.com/support/entry/portal/software), which are found through the IBM Software Support website, provide the latest information about known product limitations and workarounds.
- Tivoli wikis

Tivoli Wiki Central (http://www.ibm.com/developerworks/wikis/display/tivoli/Home) is the home for interactive wikis that offer best practices and scenarios for using Tivoli products. The wikis contain 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:

- Tivoli Distributed Monitoring and Application Management Wiki (http://www-10.lotus.com/ldd/ tivmonitorwiki.nsf) provides information about IBM Tivoli Monitoring and related distributed products, including IBM Tivoli Composite Application Manager products.
- Tivoli System z[®] Monitoring and Application Management Wiki (http://www.ibm.com/ developerworks/wikis/display/tivoliomegamon/Home) provides information about the OMEGAMON XE products, Tivoli NetView[®] for z/OS[®], Tivoli Monitoring Agent for z/TPF, and other System z monitoring and application management products.

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