

IBM Tivoli Monitoring: VIOS Premium Agent
Version 6.2.2.2

User's Guide



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Note

Before using this information and the product it supports, read the information in Appendix E, “Notices,” on page 359.

This edition applies to version 6.2.2.2 of IBM Tivoli Monitoring: VIOS Premium Agent (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 VIOS Premium agent

The VIOS Premium agent provides you with the capability to monitor VIOS (Virtual I/O Server). This chapter provides a description of the features, components, and interface options for the VIOS Premium agent.

System p monitoring agents

The four System p[®] monitoring agents monitor the PowerVM[®] environment as shown in Figure 1:

- AIX[®] Premium agent
- CEC Base agent
- HMC Base agent
- VIOS Premium agent

Each agent operates independently of each other and together provide a complete PowerVM monitoring offering.

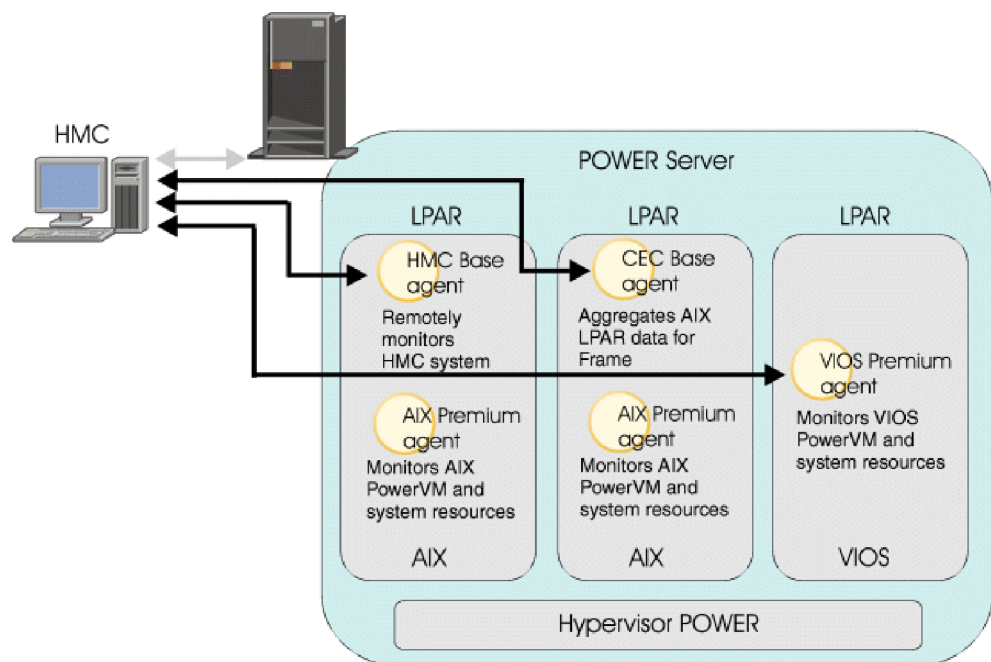


Figure 1. System p agents

- The **AIX Premium agent** runs on an AIX LPAR and provides monitoring of the AIX system for that LPAR. Each AIX LPAR to be monitored must run a dedicated AIX Premium agent. This agent is available on the installation package for the System p agents.
- The **CEC Base agent** runs on a single AIX or VIOS LPAR and provides Central Electronics Complex (CEC) frame-level monitoring of CPU and memory resources by aggregating information retrieved from the XMTOPAS daemon for each AIX/VIOS LPAR. LPARs not running AIX /VIOS or XMTOPAS cannot be monitored and therefore, impact the ability of the agent to provide accurate information. This agent uses a secure shell (SSH) connection to the hardware

management console (HMC) to issue HMC commands for discovering the LPARs on the CEC. The agent does not rely on the AIX Premium agent data; however, this agent provides summaries of some of the same LPAR-specific information. For environments that are not managed by using the HMC, this agent must be run on the VIOS for discovery to be accomplished using the Integrated Virtualization Manager (IVM). This agent is pre-installed with the VIOS operating system and is in the installation package for the System p agents.

- The **HMC Base agent** runs on a single AIX LPAR and provides monitoring of the health and performance of the HMC. This multi-instance agent uses a unique agent instance for monitoring each HMC. This agent sends HMC commands over an SSH connection to retrieve information from the HMC. The agent is available in the installation package for the System p agents.
- The **VIOS Premium agent** runs on the VIOS LPAR and provides monitoring the VIOS system, and the network and storage client mapping defined by the HMC. Each VIOS to be monitored must run a dedicated VIOS Premium agent. This agent uses an SSH connection to the HMC to issue HMC commands, and uses the VIOS command line for discovering network and storage mapping data. This agent is pre-installed with the VIOS system and is not included in the installation package for the System p agents.

IBM Tivoli Monitoring overview

IBM Tivoli Monitoring is the base software for the VIOS Premium agent. 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 perform 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 perform 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 353 for complete information about IBM Tivoli Monitoring and the Tivoli Enterprise Portal.

Features of the monitoring agent

The VIOS Premium agent software can identify and notify you of common problems with the application that it monitors. The software includes the following features:

- Monitoring
- Data gathering

- Event management

Functions of the monitoring agent

The VIOS Premium agent provides the following functions:

VIOS Availability and Health Resource Monitoring

The VIOS Premium agent monitors the availability and health of the VIOS resources: logical partition (LPAR) configurations, CPU, memory, storage, and networks. It also shows storage and network mappings between the VIOS Server and its clients.

New in this release

For version 6.2.2.2 of the VIOS Premium agent, the following updates have been made since version 6.2.2.1:

- New attribute group: The FC Stats attribute group contains information about the statistics gathered by the Fibre Channel device.
- New workspace: The Fibre Channel workspace displays information about the Displays statistics gathered by the Fibre Channel device.
- New Tivoli Common Reporting reports

Components of the IBM Tivoli Monitoring environment

After you install and set up the VIOS Premium agent, you have an environment that contains the client, server, and monitoring agent implementation for IBM Tivoli Monitoring. This environment contains the following components:

- Tivoli Enterprise Portal client, which has a user interface based on Java for viewing and monitoring your enterprise.
- Tivoli Enterprise Portal Server that 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 that acts as a collection and control point for alerts received from the monitoring agents, and collects their performance and availability data. The Tivoli Enterprise Monitoring Server is also a repository for historical data.
- IBM® Tivoli Enterprise Console®, which is an optional component that acts as a central collection point for events from a variety of sources, including events from other Tivoli software applications, Tivoli partner applications, custom applications, network management platforms, and relational database systems. You can view these events through the Tivoli Enterprise Portal (by using the event viewer), and you can forward events from IBM Tivoli Monitoring situations to the IBM Tivoli Enterprise Console component.
- IBM Tivoli Netcool/OMNIBus, which is an optional component and an alternative to the IBM Tivoli Enterprise Console. The Netcool/OMNIBus software is a service level management (SLM) system that delivers real-time, centralized monitoring of complex networks and IT domains. The Tivoli Netcool/OMNIBus components work together to collect and manage network event information.
- Tivoli Common Reporting, which is a separately installable feature available to users of Tivoli software that provides a consistent approach to generating and customizing reports. Some individual products provide reports that are designed for use with Tivoli Common Reporting and have a consistent look and feel.

User interface options

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

Tivoli Enterprise Portal user interface

The client interface is a graphical user interface (GUI) based on Java on a Windows or Linux workstation. You can run the Tivoli Enterprise Portal as a desktop application or a browser application. 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 Java Web Start. 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 IBM 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

The window for the Manage Tivoli Enterprise Monitoring Services utility is used for configuring the agent and starting Tivoli services not designated to start automatically.

IBM Tivoli Enterprise Console

An event management application that integrates system, network, database, and application management to help ensure the optimal availability of an IT service for an organization.

Tivoli Netcool/OMNIBus event list

You can use the event list to monitor and manage alerts. An alert is created when the ObjectServer receives an event, alarm, message, or data item. Each alert is made up of columns (or fields) of information that are held 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.

Tivoli Common Reporting

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

Chapter 2. Requirements and agent-specific installation and configuration information for the monitoring agent

This chapter contains information about the requirements for the VIOS Premium agent, and agent-specific information related to installation and configuration of the agent.

Requirements for the monitoring agent

In addition to the requirements described in the *IBM Tivoli Monitoring Installation and Setup Guide*, the VIOS Premium agent has the following requirements:

- The monitoring agent runs on any of these operating systems:
 - VIOS V2.2.1.0

Note: For the most current information about the operating systems that are supported, see http://www-306.ibm.com/software/sysmgmt/products/support/Tivoli_Supported_Platforms.html.

- This agent monitors the following versions:
 - VIOS V2.2.1.0
- The VIOS Premium Agent is preinstalled on a VIOS system and no installation is required.

The VIOS is a closed system and does not support the running of non-certified software. Currently, the only IBM Tivoli Monitoring agents certified to run on the VIOS are the VIOS Premium agent, IBM Tivoli Monitoring: CEC Base Agent, and the IBM Tivoli Monitoring: UNIX Logs Agent.

IBM Tivoli Monitoring remote operations are currently not supported for the VIOS Premium agent, because IBM Tivoli Monitoring remote operations require the IBM Tivoli Monitoring: UNIX OS Agent to be running on that endpoint.

- 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.
 - The monitoring agent must be connected to the following software:
 - IBM Tivoli Monitoring V6.2.2 or later
- After you install the prerequisite software, install the following software, which is required for the VIOS Premium agent to operate:
- VIOS Premium agent
 - VIOS Premium agent for Tivoli Enterprise Monitoring Server support
 - VIOS Premium agent for Tivoli Enterprise Portal Server support
 - VIOS Premium agent for Tivoli Enterprise Portal Desktop Client support
 - VIOS Premium agent for Tivoli Enterprise Portal Browser Client support

Agent-specific installation and configuration

In addition to the installation and configuration information in the *IBM Tivoli Monitoring Installation and Setup Guide*, use the information in this section to install and configure the VIOS Premium agent.

Installation

The VIOS Premium agent is preinstalled during a VIOS system installation. If the latest VIOS is installed, no additional IBM Tivoli Monitoring installation is required. IBM Tivoli Monitoring agent updates are sometimes packaged with VIOS Fix Packs. If the latest VIOS Fix Pack is not installed, follow the instructions for updating the VIOS system with the latest Fix Pack at http://publib.boulder.ibm.com/infocenter/eserver/v1r3s/index.jsp?topic=/iphb1/iphb1_vios_managing_updating.htm.

Download the latest VIOS system Fix Pack at the following Web site:
<http://www14.software.ibm.com/webapp/set2/sas/f/vios/download/home.html>.

Setting up the HMC to allow remote command execution

The VIOS Premium agent must connect to the HMC using SSH to obtain VIOS mapping attributes. This section describes how to configure the HMC to allow SSH connections.

From the HMC console, perform the following steps:

1. In the Navigation area, select **HMC Management**.
2. In the Navigation area, click **HMC Configuration**.
3. In the Contents area, click **Enable/Disable Remote Command Execution**.
4. When the window opens, select the box to enable SSH.

After the HMC is enabled to allow remote command execution, configure SSH between the logical partition running the IBM Tivoli Monitoring System p agent and the HMC. System p agents (HMC Base agent, VIOS Premium agent, and CEC Base agent) must communicate with the HMC to obtain certain attributes about LPARs, or the HMC itself, that are not directly available to the agents.

Changing the encryption key values in a VIOS environment

If the encryption key must be set to a nondefault value for agent on VIOS, follow these instructions:

1. Enter the UNIX shell on the VIOS system:
`oem_setup_env`
2. Remove the current keyfiles directory from the IBM Tivoli Monitoring installation location. For example:
`# cd /opt/IBM/ITM`
`# rm -R keyfiles`
3. Locate the IBM Tivoli Monitoring installation script for System P agents that comes preinstalled on VIOS:
`find /usr/lpp -name install.sh`
4. Run the script. For example:
`# /usr/lpp/itm.premium/itm_agent/install.sh`
Running the script takes you through the installation process.
5. Accept the defaults until you see a prompt asking you for a 32-character encryption key:

```
Enter a 32-character encryption key, or just press Enter to use
the default
Default = IBMTivoliMonitoringEncryptionKey
....+....1....+....2....+....3..
```

6. Enter the new value for the encryption key and press Enter.
7. Continue accepting the defaults until the installation script completes.

Deleting SSH keys from the HMC

Although not generally required, you can delete SSH keys from the HMC from the agent computer or from the HMC computer:

- From the agent computer (if SSH is configured), run the following command:

```
$ssh hmcuser@HMC "mkauthkeys --remove 'user@hostname'"
```
- From the the HMC computer, log in to the HMC and run the following command:

```
$ mkauthkeys --remove 'user@hostname'
```

Configuration

Before you configure your monitoring agent, complete the following tasks:

- Ensure that VIOS V2.2.1.0 is running.
- Verify that you know the correct user ID, password, and host name of the HMC and have established an SSH connection to the HMC.
- The VIOS agent must be configured and started under the "padmin" user ID.
- Verify that this LPAR has the "Allow processor pool utilization authority" or "Allow performance information collection" option checked in the Hardware Management Console (HMC), if you want to monitor the Available CPU Units in Pool attribute.

To configure and start the monitoring agent, perform the following steps:

Note: The following procedures can also be used to configure the IBM Tivoli Monitoring: CEC Base Agent that is installed on the VIOS. Replace the string "ITM_premium" with "ITM_cec" and repeat the configuration steps.

1. List all of the available monitoring agents using the `lssvc` command. For example:

```
$lssvc
ITM_premium
```
2. Based on the output of the `lssvc` command, specify the monitoring agent you want to configure (in this case, `ITM_premium`).
3. List all of the attributes that are associated with the monitoring agent using the `cfgsvc` command. For example:

```
$cfgsvc -ls ITM_premium
HOSTNAME
RESTART_ON_REBOOT
MANAGING_SYSTEM
```
4. Configure the monitoring agent with its associated attributes using the `cfgsvc` command:

```
$cfgsvc ITM_agent_name -attr Restart_On_Reboot=value hostname=name_or_address1
managing_system=name_or_address2
second_managing_system=name_or_address3
```

Where:

ITM_agent_name

Name of the monitoring agent. For example, `ITM_premium`.

- value** Either TRUE or FALSE as follows:
- TRUE: ITM_agent_name restarts when the Virtual I/O Server restarts
 - FALSE: ITM_agent_name does not restart whenever the Virtual I/O Server restarts

name_or_address1

Either the host name or IP address of the Tivoli Enterprise Monitoring Server to which ITM_agent_name sends data.

name_or_address2

Either the host name or IP address of the Hardware Management Console (HMC) attached to the managed system on which the Virtual I/O Server with the monitoring agent is located. In this field, *name* can be specified as HMCuser@HMChostname if the administrator wants to specify an HMC user ID other than "hscroot" on the HMC host. If the HMCuser ID is not specified, it is assumed to be "hscroot".

name_or_address3

Either the host name or IP address of the Secondary Hardware Management Console (HMC) attached to the managed system on which the Virtual I/O Server with the monitoring agent is located. In this field, *name* can be specified as HMCuser@HMChostname if the administrator wants to specify an HMC user ID other than "hscroot" on the HMC host. If the HMCuser ID is not specified, it is assumed to be "hscroot". This name or address is the HMC to which the CEC agent will fail over if there are problems connecting to the HMC specified by name_or_address2.

Examples:

- `cfgsvc ITM_premium -attr Restart_On_Reboot=TRUE hostname=tems_server managing_system=hmc_console`

In this example, the ITM_premium monitoring agent is configured to send data to tems_server, and to restart whenever the Virtual I/O Server restarts.

- `cfgsvc ITM_premium -attr Restart_On_Reboot=TRUE hostname=tems_server managing_system=hmcuser@hmc_console`

In this example the HMC user ID (hmcuser) is specified to be different from "hscroot".

5. The **cfgsvc** command configures default values for IBM Tivoli Monitoring-specific values. Use the **itmcmd** command to configure nondefault Tivoli Monitoring configuration values (such as KDC_FAMILIES):
 - a. Enter the AIX shell:


```
oem_setup_env
```
 - b. Run the **itmcmd config** command:


```
# /opt/IBM/ITM/bin/itmcmd config -A va
```
 - c. Respond to the prompts to set protocols for communicating to the Tivoli Enterprise Monitoring Server and the ports to use for communication methods as you would do for any IBM Tivoli Monitoring agent not in a VIOS environment.
6. From the HMC, complete the following steps to enable the monitoring agent to gather information from the HMC. After you configure a secure shell connection for one monitoring agent, you do not need to configure it again for any additional agents.
 - a. Determine the name of the managed system on which the Virtual I/O Server with the monitoring agent is located. This is the name of the CEC.

- b. Obtain the public key for the Virtual I/O Server by running the following command:

```
viosvrcmd -m managed_system_name -p vios_name -c "cfgsvc  
-key ITM_agent_name"
```

Where:

managed_system_name

The name of the CEC that will be monitored.

vios_name

Name of the Virtual I/O Server logical partition (with the monitoring agent or client) as defined on the HMC.

ITM_agent_name

Name of the monitoring agent. For example, ITM_premium.

- c. Update the `authorized_key2` file on the HMC by running the **mkauthkeys** command:

```
mkauthkeys --add public_key
```

Where: *public_key* is the output from the **viosvrcmd** command.

For example:

```
$ viosvrcmd -m commo126041 -p VIOS7 -c "cfgsvc ITM_premium -key"  
ssh-rsa AAAAB3NzaC1yc2EAAAABIwAAAQEAvejDZsS0guWzfzfp9Bbwe\  
G0QMXv1tbDrtyWsgPbA2ExHA+xdUWA51K0oFGarK2FC7e7Nj\  
KW+UmgQbrh/KSyKKwozjp4xWNGhLmfan85ZpFR7wy9UQG1b\  
LgXZxYrY7yyQQQDjvwosWafzkjpG3iW/xmWD5PKLBmob2QkKJ\  
bxjne+wqGwHTRYDGIiyhCBIdfFaLZgkXTZ2diZ98rL8LIv3qb+TsM1B\  
28AL4t+10GGeW2421sB+8p4kamPJCYfKePHo67yP4NyKyPBFHY\  
3TpTrca4/y1KEBT0Va3Pebr5JEIUvWYs6/RW+bUQk1Sb6eYbcRjFH\  
hN513F+ofd0vj39zwQ==  
root@vios7.vios.austin.ibm.com  
  
$ mkauthkeys --add 'ssh-rsa AAAAB3NzaC1yc2EAAAABIwAAAQEAvejDZsS0guWzfzfp9Bbwe\  
G0QMXv1tbDrtyWsgPbA2ExHA+xdUWA51K0oFGarK2FC\  
7e7NjKW+UmgQbrh/KSyKKwozjp4xWNGhLmfan85Zp\  
FR7wy9UQG1bLgXZxYrY7yyQQQDjvwosWafzkjpG\  
3iW/xmWD5PKLBmob2QkKJbxjne+wqGwHTRYDGIiyh\  
CBIdfFaLZgkXTZ2diZ98rL8LIv3qb+TsM1B28AL4t+10G\  
GeW2421sB+8p4kamPJCYfKePHo67yP4NyKyPBFHY\  
3TpTrca4/y1KEBT0Va3Pebr5JEIUvWYs6/RW+bUQk1\  
Sb6eYbcRjFHHN513F+ofd0vj39zwQ==  
root@vios7.vios.austin.ibm.com'
```

7. Start the monitoring agent using the **startsvc** command. For example:

```
$startsvc ITM_premium
```

When you are finished, you can view the data gathered by the monitoring agent from the Tivoli Enterprise Portal.

Usage

Consult the following commands for additional information:

- **cfgsvc**

<http://publib.boulder.ibm.com/infocenter/eserver/v1r3s/index.jsp?topic=/iphcg/cfgsvc.htm>

- **lssvc**

<http://publib.boulder.ibm.com/infocenter/eserver/v1r3s/index.jsp?topic=/iphcg/lssvc.htm>

- **startsvc**

<http://publib.boulder.ibm.com/infocenter/eserver/v1r3s/index.jsp?topic=/iphcg/startsvc.htm>

- **stopsvc**

<http://publib.boulder.ibm.com/infocenter/eserver/v1r3s/index.jsp?topic=/iphcg/stopsvc.htm>

Chapter 3. Workspaces reference

This chapter contains an overview of workspaces, references for detailed information about workspaces, and descriptions of the predefined workspaces included in this monitoring agent.

About workspaces

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

When you select an item in the Navigator tree, a default workspace is displayed. When you right-click a Navigator item, a menu that includes a Workspace item is displayed. The Workspace item contains a list of workspaces for that Navigator item. Each workspace has at least one view. Some views have links to other workspaces.

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.

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

More information about workspaces

For more information about creating, customizing, and working with workspaces, see 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 the Predefined workspaces section in this chapter and the information in that section 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 the Attributes reference section.

Predefined workspaces

The VIOS Premium agent provides the following predefined workspaces, which are organized by Navigator item.

- VIOS Premium Navigator item
 - VIOS Premium workspace

- Performance Object Status workspace
- Resources - Summary Graph workspace
- Memory Navigator item
 - Memory workspace
- Networking Navigator item
 - Network Adapter Details workspace
 - Network Adapter Utilization workspace
 - Network Protocol Views workspace
 - Networking workspace
 - Shared Ethernet workspace
 - Shared Ethernet Adapter High Availability Details workspace
 - Shared Ethernet Bridging Details workspace
- Process Navigator item
 - Process workspace
- Security Navigator item
 - Security workspace
- Status Navigator item
 - Status workspace
- Storage Navigator item
 - Fibre Channel workspace
 - File Systems workspace
 - Logical Volume Details workspace
 - MPIO Storage Information workspace
 - Physical Storage Performance Details workspace
 - Storage workspace
 - System Storage[®] Information workspace
 - Virtual Storage Performance Details workspace
 - Volume Groups and Logical Volumes workspace
- System Navigator item
 - CPU Utilization workspace
 - LPAR Information workspace
 - System workspace
- Top Resources Navigator item
 - Top Resources workspace
- User Navigator item
 - User workspace
- Virtual IO Mappings Navigator item
 - Network Mappings workspace
 - NPIV Mappings workspace
 - Virtual IO Mappings workspace

Agent Navigator items

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

VIOS Premium Navigator item

VIOS Premium workspace

This workspace contains a quick list of key system resources: CPU, real memory, physical volume, and network interfaces.

This workspace contains the following views:

Logical Partition Attributes

Shows basic logical partition (LPAR) configuration settings.

Logical Partition Units

Shows CPU allocation and availability information.

Network Interface Resources

Shows a table of network interfaces.

Total Real Memory

Shows total memory along with the amount free and used memory.

Physical Volumes

Shows a table of physical volumes, their size, and associated volume group.

Number of CPUs

Shows the number of CPUs and the version of VIOS.

Capabilities

Shows whether IVM is enabled.

Performance Object Status workspace

This table reflects the status of other attribute groups so you can see the status 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. The Performance Object Status attribute group is most often used to determine why data does not seem to be available for one of the other performance attribute groups.

This workspace contains the following view:

Performance Object Status

Shows a table of the attribute groups associated with the VIOS Premium Agent.

Resources - Summary Graph workspace

Shows graphs of CPU, memory, physical volume resources, and a table of network interfaces.

This workspace contains the following views:

CPU Availability

Shows a pie chart of overall CPU utilization.

Physical Volume Resources

Shows stacked bar charts of free and used space on physical volumes.

Real Memory Resources

Shows a stacked bar chart of free and used memory.

Network Interface Resources

Shows a table of network interfaces.

Memory Navigator item

Memory workspace

Real Memory, Paging Space Utilization, and Virtual Memory Manager (VMM) Paging rates.

This workspace contains the following views:

Real Memory Utilization

Shows a stacked bar chart of free and used memory.

Computational Memory

Shows a stacked bar chart of non-computational and computational memory.

VMM Paging Rates

Shows basic paging rates.

Page Fault Rates

Shows advanced paging rates.

Paging Space Utilization

Shows a stacked bar chart of free and used paging space.

Networking Navigator item

Network Adapter Details workspace

This workspace displays throughput, errors, and totals for each network adapter.

This workspace contains the following views:

Network Adapter Throughput Rates

Shows detailed throughput information for each network adapter as a rate.

Network Adapter Error Rates

Shows detailed error information for each network adapter as a rate.

Network Adapters Throughput Totals

Shows detailed throughput information totals.

Network Adapter Error Totals

Shows detailed error information totals.

Network Adapter Utilization workspace

This workspace displays utilization and errors per network adapter.

This workspace contains the following views:

Adapter Throughput

Shows summary per adapter throughput information.

Bandwidth Utilization

Shows the network bandwidth utilization of each network interface.

Network Error Rate

Shows summary per adapter error rate information.

Utilization per Adapter

Shows summary utilization totals per adapter.

Network Protocol Views workspace

This workspace displays views of IP, TCP, and per IP interface utilization metrics

This workspace contains the following views:

IP Packet Statistics

Shows rates of IP traffic.

IP Throughput per Adapter

Shows the rate at which the IP packets were transmitted and received per interface.

TCP Throughput

Shows the rate at which the TCP packets were transmitted and received per interface.

Networking workspace

This workspace has views that show Network Interfaces Status (name, IP addr, and so on) and Network Quality of Service attributes.

This workspace contains the following views:

Network Interfaces Status

Shows a table of network interfaces.

Network Quality of Service

Shows a variety of metrics associated with network quality of service.

Common TCP/IP Problems with Network Interfaces

Shows an explanation of how to diagnose and correct common TCP/IP problems with network interfaces.

Shared Ethernet workspace

This workspace has views that show utilization per adapter, and VLAN and errors per Shared Ethernet Adapter (SEA).

This workspace contains the following views:

Adapter Throughput

Shows summary per shared ethernet adapter throughput information.

Adapter Error Rate

Shows summary per shared ethernet adapter error rate information.

Utilization per Shared Ethernet Adapter

Shows summary utilization totals per shared ethernet adapter.

Utilization per VLAN

Shows network utilization metrics per VLAN.

Shared Ethernet Adapter High Availability Details workspace

This workspace displays high availability rates and totals for each shared ethernet adapter.

This workspace contains the following views:

Shared Ethernet Adapter High Availability Rates

Shows high availability rates per shared ethernet adapter.

Shared Ethernet Adapters High Availability Totals

Shows high availability totals per shared ethernet adapter.

Shared Ethernet Bridging Details workspace

This workspace displays bridging throughput and error metrics for each shared ethernet adapter.

This workspace contains the following views:

Shared Ethernet Adapter Bridging Rates

Shows detailed bridging rates per shared ethernet adapter.

Shared Ethernet Adapter Bridging Error Rates

Shows detailed bridging error rates per shared ethernet adapter.

Shared Ethernet Adapters Bridging Totals

Shows detailed bridging totals per shared ethernet adapter.

Shared Ethernet Adapter Bridging Error Totals

Shows detailed bridging error totals per shared ethernet adapter.

Process Navigator item

Process workspace

This workspace displays global and per process views

This workspace contains the following views:

Queue Averages

Shows run queue and swap queue average sizes.

Kernel Processes

Shows rate of kernel processes being created and exiting.

Utilization

Shows total system number of processes, load average utilization average, and context switches per second.

Per Process Information

Shows a list of all processes on the system, their attributes, and their resource consumption.

Security Navigator item

Security workspace

This workspace displays security states and firewall metrics.

This workspace contains the following views:

Security Settings

Shows current security settings such as authentication method and whether firewalling is enabled.

Firewall Rules

Shows current firewalling rules.

Status Navigator item

Status workspace

This workspace has views that show the availability of network and storage devices and as a list of devices and their type, class, parent name, and status.

This workspace contains the following views:

Available Devices

Shows the network and storage devices that are currently available along with their parent names, device type, class, and status.

Device Status

Shows the status of devices associated with an LPAR, including their parent names, device type, and class.

Storage Navigator item

Fibre Channel workspace

This workspace displays Fibre Channel adapter statistics.

This workspace contains the following views:

Fibre Channel Adapter Statistics

Shows Fibre Channel Adapter Statistics.

Fibre Channel Traffic Statistics

Shows Fibre Channel Traffic Statistics information.

Link Error Status Block Counters

Shows Fibre Channel Adapter Link Error Status Block Counters.

File Systems workspace

This workspace shows file system sizes in table and graph forms.

This workspace contains the following views:

File System Metrics

Shows file systems, their mount points, associated volume groups, and usage statistics.

File System Utilization

Shows a stacked bar chart of free and used space for each file system.

Logical Volume Details workspace

This workspace displays detailed information about logical volumes including their size, type, mount point, and associated volume group.

This workspace contains the following views:

Logical Volume Sizes

Shows a bar chart of the sizes of each logical volume.

Logical Volume Details

Shows details for each logical volume including associated volume group and current state.

MPIO Storage Information workspace

This workspace has views that show the Multi-Path I/O (MPIO) Attributes, Connection Status, and Storage Devices Utilization on the current LPAR.

This workspace contains the following views:

MPIO Attributes

Shows the attributes, values, and descriptions of each storage device. It also indicates whether an attribute can be set by the user.

MPIO Connection Status

Shows a list of storage devices, the parent name of each device, the device path status, the device operational status, and the connection ID of the storage device listed.

Storage Devices Utilization

Shows key utilization metrics for each storage device associated with the LPAR.

Physical Storage Performance Details workspace

This workspace displays metrics for physical adapters and physical disks including errors, throughput, and totals.

This workspace contains the following views:

Physical Disk Throughput

Shows detailed metrics measuring the utilization of each physical disk.

Physical Adapter Throughput

Shows summary metrics for each physical adapter.

Physical Disk Queue Metrics

Shows detailed queuing metrics for each physical disk.

Physical Disk Error Rates

Shows detailed error metrics for each physical disk.

Storage workspace

This workspace shows physical volume size and metrics.

This workspace contains the following views:

Physical Volume Sizes

Shows the used and available space as a stacked bar graph for each physical volume.

Physical Volume Metrics

Shows the number of logical volumes and stale partitions.

Physical Volume Details

Shows details of each physical volume including associated volume groups, size, and allocation details.

System Storage Information workspace

This workspace shows performance metrics for each active disk and adapter.

This workspace contains the following views:

Disk and Adapter Details

Shows all disks and adapters, their types, and summary statistics.

Disk and Adapter Transfer Rates

Shows transferred KB per second for each disk and adapter.

Disk and Adapter I/O Rates

Shows read and write KB per second for each disk and adapter.

Disk and Adapter Timeout Rates

Shows read and write timeouts per second for each disk and adapter.

Virtual Storage Performance Details workspace

This workspace displays metrics for virtual adapters and virtual disks including errors, throughput, and totals.

This workspace contains the following views:

Virtual Adapter and Virtual Disk Throughput

Shows detailed metrics measuring the utilization of each virtual disk and virtual adapter.

Virtual Adapter and Virtual Disk Summary

Shows summary metrics for each virtual adapter and virtual disk.

Virtual Adapter and Virtual Disk Queue Metrics

Shows detailed queuing metrics for each virtual disk and virtual adapter.

Virtual Adapter and Virtual Disk Error Rates

Shows detailed error metrics for each physical disk.

Volume Groups and Logical Volumes workspace

This workspace displays sizes and other properties of Volume Groups and Logical Volumes.

This workspace contains the following views:

Volume Group Sizes

Shows the used and free space as a stacked bar graph for each volume group.

Volume Group Details

Shows detailed information about each volume group, including allocated physical and logical volumes.

Volume Group Allocations

Shows the number of active physical volumes and stale physical volumes as a stacked bar graph per volume group.

Logical Volume Sizes

Shows the size of each logical volume.

Logical Volume Mappings

Shows the association between logical volumes and volume groups.

System Navigator item

CPU Utilization workspace

This workspace shows a real-time graph of CPU utilization and CPU utilization per processor.

This workspace contains the following views:

Total CPU Utilization

Shows a real-time graph of overall CPU utilization.

Processor Frequency Information

Shows the fractional number of physical processors that are used in each mode. Actual metrics use PURR counters, normalized metrics use SPURR counters.

CPU Utilization per Processor

Shows a pie chart of utilization per CPU.

LPAR Information workspace

This workspace shows LPAR CPU utilization, number of CPUs, entitlement, and LPAR attributes.

This workspace contains the following views:

CPU Entitlement

Shows the entitlement of the LPAR in the context of the number of CPUs for the host.

LPAR CPUs

Shows allocation of physical and logical CPUs in a shared pool.

LPAR Attributes

Shows LPAR metrics that are determined by configuration.

LPAR Utilization

Shows LPAR metrics that change frequently and dynamically.

Active Memory™ Sharing (AMS) Pool

Shows the Active Memory Sharing (AMS) attributes specific to the LPAR and the shared memory pool.

LPAR CPU Utilization

Shows a pie chart of overall CPU utilization.

System workspace

This workspace shows summary and per processor CPU utilization.

This workspace contains the following views:

CPU Utilization per Processor

Shows a pie chart of utilization per CPU.

CPU Availability

Shows a pie chart of overall CPU utilization.

CPU Details per Processor

Shows detailed information on the workload of each CPU.

Top Resources Navigator item

Top Resources workspace

This workspace shows file system sizes and top CPU and memory utilization by process.

This workspace contains the following views:

Top Memory Processes

Shows the highest memory consuming processes listed in descending order by memory usage.

File System Metrics

Shows file systems, their mount points, associated volume groups, and usage statistics.

File System Sizes

Shows pie charts of free and used space for file systems.

Top CPU Processes

Shows the highest CPU consuming processes listed in descending order by CPU usage.

User Navigator item

User workspace

This workspace displays information about both defined users and currently active users.

This workspace contains the following views:

Defined Users

Shows a list of all users defined in /etc/passwd.

Active Users

Shows a list of all users that are currently logged in with details about each session.

Virtual IO Mappings Navigator item

Network Mappings workspace

This workspace shows network interfaces and virtual LAN details.

This workspace contains the following views:

Network Mappings

Shows the association among VLAN IDs, client partitions, and other attributes.

Network Mappings Details

Shows the association among VLAN IDs, client partitions, and other detailed attributes.

Network Interfaces

Shows a table of network interfaces.

NPIV Mappings workspace

This workspace provides a fibre channel (FC) facility for sharing a single physical N_Port FC adapter among multiple N_Port IDs. This Workspace lists VIOS FC adapter information and gives mappings between VIOS Virtual Fibre Channel Adapter(s) and the dedicated Fibre Channel port IDs on client partitions.

This workspace contains the following views:

NPIV Mappings view

Provides mapping between VIOS Fibre Channel Adapter(s) and the dedicated Fibre Channel port IDs on client partitions.

NPIV Fibre Channel Port view

Lists the physical Fibre Channel adapter ports, their location codes and number of ports.

Virtual IO Mappings workspace

This workspace gives the storage mappings and all relevant information about disk usage and utilization. NOTE: Client mapping data will be missing if the Virtual Adapter has been setup to serve 'Any Partition'. VIO backing devices must be setup (through HMC) to match remote client backing devices for the VIOS to gather the proper client data.

This workspace contains the following views:

Storage Mappings

Shows the utilization and association between physical disks and volumes, and the association between virtual disks and client partitions.

Disk Usage

Shows free and used disk space for each physical disk as pie charts.

Storage Mappings Details

Shows details about the association between physical disks and volumes, and the association between virtual disks and client partitions.

Chapter 4. Attributes reference

This chapter contains an overview of attributes, references for detailed information about attributes, and descriptions of the attributes for each attribute group included in this monitoring agent.

About attributes

Attributes are the application properties that are being measured and reported by the VIOS Premium agent.

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

- Chart or table views

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

- Situations

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

More 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 attributes groups, a list of the attributes in each attribute group, and descriptions of the attributes for this monitoring agent, see the Attribute groups and attributes section in this chapter.

Attribute groups and attributes for the VIOS Premium agent

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

- Attribute group name: Active Users
 - Table name: KVA50ACTIV
 - Warehouse table name: KVA_ACTIVE_USERS or KVA50ACTIV
- Attribute group name: AMS Pool
 - Table name: KVA53MPOOL
 - Warehouse table name: KVA_AMS_POOL or KVA53MPOOL
- Attribute group name: Capabilities
 - Table name: KVA08CAPAB

- Warehouse table name: KVA_CAPABILITIES or KVA08CAPAB
- Attribute group name: CPU Detail
 - Table name: KVA17CPUDE
 - Warehouse table name: KVA_CPU_DETAIL or KVA17CPUDE
- Attribute group name: CPU Summary
 - Table name: KVA16CPUSU
 - Warehouse table name: KVA_CPU_SUMMARY or KVA16CPUSU
- Attribute group name: Defined Users
 - Table name: KVA49DEFIN
 - Warehouse table name: KVA_DEFINED_USERS or KVA49DEFIN
- Attribute group name: Devices
 - Table name: KVA51DEVIC
 - Warehouse table name: KVA_DEVICES or KVA51DEVIC
- Attribute group name: Disks
 - Table name: KVA34DISKS
 - Warehouse table name: KVA_DISKS or KVA34DISKS
- Attribute group name: FC Stats
 - Table name: KVAFC_STAT
 - Warehouse table name: KVA_FC_STATS or KVAFC_STAT
- Attribute group name: File Systems
 - Table name: KVA38FILES
 - Warehouse table name: KVA_FILE_SYSTEMS or KVA38FILES
- Attribute group name: Firewall
 - Table name: KVA06FIREW
 - Warehouse table name: KVA_FIREWALL or KVA06FIREW
- Attribute group name: Internet Protocol Detail
 - Table name: KVA44INTER
 - Warehouse table name: KVA_INTERNET_PROTOCOL_DETAIL or KVA44INTER
- Attribute group name: Internet Protocol Summary
 - Table name: KVA43INTER
 - Warehouse table name: KVA_INTERNET_PROTOCOL_SUMMARY or KVA43INTER
- Attribute group name: Logical Partition
 - Table name: KVA22LOGIC
 - Warehouse table name: KVA_LOGICAL_PARTITION or KVA22LOGIC
- Attribute group name: Logical Volumes
 - Table name: KVA37LOGIC
 - Warehouse table name: KVA_LOGICAL_VOLUMES or KVA37LOGIC
- Attribute group name: MPIO Attributes
 - Table name: KVA52MPIOA
 - Warehouse table name: KVA_MPIO_ATTRIBUTES or KVA52MPIOA
- Attribute group name: MPIO Status
 - Table name: KVA51MPIOS
 - Warehouse table name: KVA_MPIO_STATUS or KVA51MPIOS

- Attribute group name: Network Adapters Rates
 - Table name: KVA42NETWO
 - Warehouse table name: KVA_NETWORK_ADAPTERS_RATES or KVA42NETWO
- Attribute group name: Network Adapters Totals
 - Table name: KVA41NETWO
 - Warehouse table name: KVA_NETWORK_ADAPTERS_TOTALS or KVA41NETWO
- Attribute group name: Network Interfaces
 - Table name: KVA40NETWO
 - Warehouse table name: KVA_NETWORK_INTERFACES or KVA40NETWO
- Attribute group name: Network Mappings
 - Table name: KVA03NETWO
 - Warehouse table name: KVA_NETWORK_MAPPINGS or KVA03NETWO
- Attribute group name: NIM Resources
 - Table name: KVA24NIMRE
 - Warehouse table name: KVA_NIM_RESOURCES or KVA24NIMRE
- Attribute group name: NPIV FCP
 - Table name: KVA56NPIVF
 - Warehouse table name: KVA_NPIV_FCP or KVA56NPIVF
- Attribute group name: NPIV Mappings
 - Table name: KVA55NPIVM
 - Warehouse table name: KVA_NPIV_MAPPINGS or KVA55NPIVM
- Attribute group name: Paging Space
 - Table name: KVA21PAGIN
 - Warehouse table name: KVA_PAGING_SPACE or KVA21PAGIN
- Attribute group name: Performance Object Status
 - Table name: KVAPOBJST
 - Warehouse table name: KVA_PERFORMANCE_OBJECT_STATUS or KVAPOBJST
- Attribute group name: Physical Memory
 - Table name: KVA27PHYSI
 - Warehouse table name: KVA_PHYSICAL_MEMORY or KVA27PHYSI
- Attribute group name: Physical Volumes
 - Table name: KVA35PHYSI
 - Warehouse table name: KVA_PHYSICAL_VOLUMES or KVA35PHYSI
- Attribute group name: Processes Detail
 - Table name: KVA32PROCE
 - Warehouse table name: KVA_PROCESSES_DETAIL or KVA32PROCE
- Attribute group name: Processes Summary
 - Table name: KVA31PROCE
 - Warehouse table name: KVA_PROCESSES_SUMMARY or KVA31PROCE
- Attribute group name: Quality Of Service
 - Table name: KVA54QOS
 - Warehouse table name: KVA_QUALITY_OF_SERVICE or KVA54QOS

- Attribute group name: Security States
 - Table name: KVA05SECUR
 - Warehouse table name: KVA_SECURITY_STATES or KVA05SECUR
- Attribute group name: Shared Ethernet Adapter
 - Table name: KVA53SEA
 - Warehouse table name: KVA_SHARED_ETHERNET_ADAPTER or KVA53SEA
- Attribute group name: Storage Mappings
 - Table name: KVA02STORA
 - Warehouse table name: KVA_STORAGE_MAPPINGS or KVA02STORA
- Attribute group name: System Call
 - Table name: KVA20SYSTE
 - Warehouse table name: KVA_SYSTEM_CALL or KVA20SYSTE
- Attribute group name: System IO
 - Table name: KVA19SYSTE
 - Warehouse table name: KVA_SYSTEM_IO or KVA19SYSTE
- Attribute group name: TADDM
 - Table name: KVA56TADDM
 - Warehouse table name: KVA_TADDM or KVA56TADDM
- Attribute group name: TCP
 - Table name: KVA45TCP
 - Warehouse table name: KVA_TCP or KVA45TCP
- Attribute group name: Top 50 CPU Processes
 - Table name: KVA10TOP50
 - Warehouse table name: KVA_TOP_50_CPU_PROCESSES or KVA10TOP50
- Attribute group name: Top 50 Memory Processes
 - Table name: KVA11TOP50
 - Warehouse table name: KVA_TOP_50_MEMORY_PROCESSES or KVA11TOP50
- Attribute group name: Virtual Memory Management
 - Table name: KVA28VIRTU
 - Warehouse table name: KVA_VIRTUAL_MEMORY_MANAGEMENT or KVA28VIRTU
- Attribute group name: Volume Groups
 - Table name: KVA36VOLUM
 - Warehouse table name: KVA_VOLUME_GROUPS or KVA36VOLUM
- Attribute group name: Workload Manager
 - Table name: KVA23WORKL
 - Warehouse table name: KVA_WORKLOAD_MANAGER or KVA23WORKL

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

Historical group

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

Attribute descriptions

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

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

Active Users attribute group

This attribute group contains information about the users active 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 Active Users attribute group:

Node attribute - This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Warehouse name

NODE

Timestamp attribute

Description

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

Type

String

Warehouse name

TIMESTAMP

User Name attribute - This attribute is a key attribute.

Description

The logon user name.

Type

String

Warehouse name

USER_NAME

tty attribute

Description

The name of the TTY the user is on.

Type

String

Warehouse name	TTY
Login Date Time attribute	
Description	The time of day when the user logged on.
Type	String
Warehouse name	LOGIN_DATE_TIME or LDT
Hostname attribute	
Description	The name of the computer that the user is logged in from.
Type	String
Warehouse name	HOSTNAME
Idle Time attribute	
Description	The number of minutes since a program last attempted to read from the terminal.
Type	String
Warehouse name	IDLE_TIME
JCPU attribute	
Description	The system unit time used by all processes and their children on that terminal.
Type	String
Warehouse name	JCPU
PCPU attribute	
Description	The system unit time used by the currently active process.
Type	String
Warehouse name	PCPU
Current Process attribute	
Description	The name and arguments of the current process.

Type

String

Warehouse name

CURRENT_PROCESS or CP

AMS Pool attribute group

This attribute group contains information about the Active Memory Sharing (AMS) pool.

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 AMS Pool attribute group:

Node attribute - This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Warehouse name

NODE

Timestamp attribute**Description**

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

Type

String

Warehouse name

TIMESTAMP

AMS Mode attribute**Description**

Indicates whether the LPAR is in AMS shared or dedicated mode.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)
- Dedicated (0)
- Shared (1)

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

Warehouse name
AMS_MODE

AMS Pool ID attribute - This attribute is a key attribute.

Description

The pool ID associated with the LPAR. All LPARs in AMS mode will have a pool ID of 0 until multiple pools are supported.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
AMS_POOL_ID or API

AMS Pool Size attribute

Description

AMS Memory pool size in GB.

Type

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

- Not Collected (-100)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
AMS_POOL_SIZE or APS

AMS Physical Mem attribute

Description

Physical memory supporting AMS logical memory for the partition.

Type

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

- Not Collected (-100)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

AMS_PHYSICAL_MEM or APM

AMS Mem Loaned attribute

Description

AMS logical memory loaned to the hypervisor.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

AMS_MEM_LOANED or AML

AMS Memory Entitlement attribute

Description

AMS memory entitlement of the partition (MB).

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

AMS_MEMORY_ENTITLEMENT or AME

AMS Memory Ent Inuse attribute

Description

AMS memory entitlement of the partition in use (MB).

Type

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

- Not Collected (-100)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

AMS_MEMORY_ENT_INUSE or AMEI

Hypervisor Page Ins attribute**Description**

Number of hypervisor page-ins.

Type

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

- Not Collected (-100)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

HYPERVISOR_PAGE_INS or HPI

Hypervisor Page Ins Time attribute**Description**

Time spent waiting for hypervisor page-ins.

Type

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

- Not Collected (-100)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

HYPERVISOR_PAGE_INS_TIME or HPIT

Capabilities attribute group

This attribute group contains information about which system capabilities (IVM) are enabled.

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 Capabilities attribute group:

Node attribute - This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Warehouse name

NODE

Timestamp attribute**Description**

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

Type

String

Warehouse name

TIMESTAMP

Type attribute - This attribute is a key attribute.**Description**

The capability of the VIOS.

Type

String

Warehouse name

TYPE

Status attribute**Description**

The status of the capability: on or off.

Type

String

Warehouse name

STATUS

CPU Detail attribute group

This attribute group contains information for each CPU.

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 CPU Detail attribute group:

Node attribute - This attribute is a key attribute.**Description**

The managed system name of the agent.

Type

String

Warehouse name
NODE

Timestamp attribute

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

Type
String

Warehouse name
TIMESTAMP

CPU Number attribute - This attribute is a key attribute.

Description
The CPU identifier number.

Type
String

Warehouse name
CPU_NUMBER

User CPU Pct attribute

Description
The time this processor spent executing in CPU user mode percentage.

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
USER_CPU_PCT or UCP

System CPU Pct attribute

Description
The time this processor spent executing in CPU kernel mode percentage.

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
SYSTEM_CPU_PCT or SCP

IO Wait CPU Pct attribute

Description
The time this processor spent waiting for IO percentage.

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
IO_WAIT_CPU_PCT or IWCP

Idle CPU Pct attribute

Description
The time this processor spent executing in CPU idle mode percentage.

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
IDLE_CPU_PCT or ICP

Context Switches per Sec attribute

Description
The process context switches on this processor per second.

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
CONTEXT_SWITCHES_PER_SEC or CSPS

Syscalls per Sec attribute

Description

The system calls on this processor per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

SYSCALLS_PER_SEC or SPS

Reads per Sec attribute

Description

The read system calls on this processor per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

READS_PER_SEC or RPS

Writes per Sec attribute

Description

The write system calls on this processor per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

WRITES_PER_SEC or WPS

Forks per Sec attribute

Description

The fork system calls on this processor per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

FORKS_PER_SEC or FPS

Execs per Sec attribute**Description**

The exec system calls on this processor per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

EXECS_PER_SEC or EPS

Read Char per Sec attribute**Description**

The KBs read through the read sys call on this processor per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

READ_CHAR_PER_SEC or RCPS

Write Char per Sec attribute

Description

The KBs written through the write sys call on this processor per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

WRITE_CHAR_PER_SEC or WCPS

Inode Lookup per Sec attribute**Description**

The calls to i-node lookup routines for this processor per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

INODE_LOOKUP_PER_SEC or ILPS

Path Name Lookup per Sec attribute**Description**

The calls to path name lookup routine for this processor per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PATH_NAME_LOOKUP_PER_SEC or PNLPS

Dir Blk Scans per Sec attribute

Description

The directory blocks scanned for this processor per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

DIR_BLK_SCANS_PER_SEC or DBSPS

Minor Page Faults attribute**Description**

The minor page faults per second. (minf)

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

MINOR_PAGE_FAULTS or MPF

Major Page Faults attribute**Description**

The major page faults per second. (majf)

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

MAJOR_PAGE_FAULTS or MPF0

Interrupts attribute**Description**

The hardware device interrupts per second. (intr)

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

INTERRUPTS

Involuntary Context Switches attribute**Description**

The involuntary context switches by process per second. (icsw)

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

INVOLUNTARY_CONTEXT_SWITCHES or ICS

Run Queue attribute**Description**

The average number of processes on the run queue per second. (runq)

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

RUN_QUEUE

Logical Processor Affinity attribute**Description**

The percentage of logical processor re-dispatches within the scheduling affinity domain 3. (lpa)

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

LOGICAL_PROCESSOR_AFFINITY or LPA

Message Ops attribute

Description

The number of IPC message operations per second. (msg)

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

MESSAGE_OPS or MO

Semaphore Ops attribute

Description

The number of IPC semaphore operations per second. (sema)

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

SEMAPHORE_OPS or SO

Blocks Read attribute

Description

The number of system block reads per second. (sysread)

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

BLOCKS_READ or BR

Blocks Write attribute

Description

The number of system block writes per second. (syswrite)

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

BLOCKS_WRITE or BW

Logical Read Requests attribute

Description

The number of logical read requests per second. (lread)

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

LOGICAL_READ_REQUESTS or LRR

Logical Write Requests attribute

Description

The number of logical write requests per second. (lwrite)

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)

- Value Exceeds Maximum (2147483647)

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

Warehouse name

LOGICAL_WRITE_REQUESTS or LWR

Physical Reads attribute

Description

The number of physical read requests per second. (phread)

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PHYSICAL_READS or PR

Physical Writes attribute

Description

The number of physical write requests per second. (phwrite)

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PHYSICAL_WRITES or PW

Logical Context Switches attribute

Description

The number of logical context switches per second. (lcswh)

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

LOGICAL_CONTEXT_SWITCHES or LCS

Physical Consumption attribute

Description

The number of physical CPU units consumed by this logical CPU.
(pc)

Type

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

- Not Collected (-100)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PHYSICAL_CONSUMPTION or PC

CPU Summary attribute group

This attribute group contains system-wide CPU usage 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 CPU Summary attribute group:

Node attribute - This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Warehouse name

NODE

Timestamp attribute

Description

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

Type

String

Warehouse name

TIMESTAMP

System Software Version attribute

Description

The system software version identification.

Type

String

Warehouse name

SYSTEM_SOFTWARE_VERSION or SSV

Number of CPUs attribute

Description

The number of logical CPUs active.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

NUMBER_OF_CPUS or NOC

User CPU Pct attribute

Description

System-wide time executing in CPU user mode percentage.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

USER_CPU_PCT or UCP

System CPU Pct attribute

Description

System-wide time executing in CPU kernel mode percentage.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)

- Value Exceeds Maximum (2147483647)

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

Warehouse name

SYSTEM_CPU_PCT or SCP

IO Wait CPU Pct attribute

Description

System-wide time waiting for CPU I/O percentage.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

IO_WAIT_CPU_PCT or IWCP

Idle CPU Pct attribute

Description

System-wide time spent in CPU idle mode percentage.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

IDLE_CPU_PCT or ICP

Physical Consumption attribute

Description

The number of physical CPU units consumed by this LPAR. (pc)

Type

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

- Not Collected (-100)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PHYSICAL_CONSUMPTION or PC

Donation Enablement attribute

Description

The status of the willingness of this LPAR to allow unused CPU cycles to be used by other LPARs [disabled,capable/disabled,enabled].

Type

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

- Not Collected (-1)
- disable (0)
- capable (1)
- enable (2)

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

Warehouse name

DONATION_ENABLEMENT or DE

Donated Idle Cycles Pct attribute

Description

The percentage of physical processor that is used by explicitly donated idle cycles, for dedicated partitions only.

Type

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

- Not Collected (-100)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

DONATED_IDLE_CYCLES_PCT or DICP

Donated Busy Cycles Pct attribute

Description

The percentage of physical processor that is used by donating busy cycles, for dedicated partitions only.

Type

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

- Not Collected (-100)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

DONATED_BUSY_CYCLES_PCT or DBCP

Stolen Idle Cycles Pct attribute

Description

The percentage of physical processor that is comprised of idle cycles stolen by the hypervisor, for dedicated partitions only.

Type

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

- Not Collected (-100)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

STOLEN_IDLE_CYCLES_PCT or SICP

Stolen Busy Cycles Pct attribute

Description

The percentage of physical processor that is comprised of busy cycles stolen by the hypervisor, for dedicated partitions only.

Type

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

- Not Collected (-100)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

STOLEN_BUSY_CYCLES_PCT or SBCP

Hypervisor Calls attribute

Description

The number of hypervisor calls made in the monitoring period.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

HYPERVISOR_CALLS or HC

Time Spent in Hypervisor Pct attribute

Description

The percentage of time spent in the hypervisor during the monitoring period.

Type

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

- Not Collected (-10)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

TIME_SPENT_IN_HYPERVISOR_PCT or TSIHP

Donating LPARs attribute

Description

The number of LPARs donating CPU cycles.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

DONATING_LPARS or DL

Average Operating Frequency GHz attribute

Description

The average operating frequency for the processor in GHz.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

AVERAGE_OPERATING_FREQUENCY_GHZ or AOFG

Average Operating Frequency Pct attribute

Description

The operating frequency as a percentage of base processor frequency.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

AVERAGE_OPERATING_FREQUENCY_PCT or AOFP

Actual Average Physical CPU User Mode attribute

Description

Average CPU units charged to User mode based on the POWER® User mode PURR register.

Type

Real number (gauge) with 3 decimal places of precision with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

ACTUAL_AVERAGE_PHYSICAL_CPU_USER or AAPCU

Actual Average Physical CPU System Mode attribute

Description

Average CPU units charged to System mode based on the POWER System mode PURR register.

Type

Real number (gauge) with 3 decimal places of precision with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

ACTUAL_AVERAGE_PHYSICAL_CPU_SYSTEM or AAPCS

Actual Average Physical CPU Idle Mode attribute**Description**

Average CPU units charged to Idle mode based on the POWER Idle mode PURR register.

Type

Real number (gauge) with 3 decimal places of precision with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

ACTUAL_AVERAGE_PHYSICAL_CPU_IDLE or AAPCI

Actual Average Physical CPU Wait Mode attribute**Description**

Average CPU units charged to Wait mode based on the POWER Wait mode PURR register.

Type

Real number (gauge) with 3 decimal places of precision with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

ACTUAL_AVERAGE_PHYSICAL_CPU_WAIT or AAPCW

Normalized Average Physical CPU User Mode attribute

Description

Average normalized CPU units charged to User mode based on the POWER User mode SPURR register.

Type

Real number (gauge) with 3 decimal places of precision with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

NORMALIZED_AVERAGE_PHYSICAL_CPU_USER or NAPCU

Normalized Average Physical CPU System Mode attribute**Description**

Average normalized CPU units charged to System mode based on the POWER System mode SPURR register.

Type

Real number (gauge) with 3 decimal places of precision with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

NORMALIZED_AVERAGE_PHYSICAL_CPU_SYSTEM or NAPCS

Normalized Average Physical CPU Idle Mode attribute**Description**

Average normalized CPU units charged to Idle mode based on the POWER Idle mode SPURR register.

Type

Real number (gauge) with 3 decimal places of precision with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

NORMALIZED_AVERAGE_PHYSICAL_CPU_IDLE or NAPCI

Normalized Average Physical CPU Wait Mode attribute**Description**

Average normalized CPU units charged to Wait mode based on the POWER Wait mode SPURR register.

Type

Real number (gauge) with 3 decimal places of precision with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

NORMALIZED_AVERAGE_PHYSICAL_CPU_WAIT or NAPCW

Defined Users attribute group

This attribute group contains information about the users defined 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 Defined Users attribute group:

Node attribute - This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Warehouse name

NODE

Timestamp attribute**Description**

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

Type

String

Warehouse name

TIMESTAMP

User Name attribute - This attribute is a key attribute.

Description
The logon user name.

Type
String

Warehouse name
USER_NAME

Roles attribute

Description
The roles defined for this user ID.

Type
String

Warehouse name
ROLES

Account Locked attribute

Description
Indicates whether or not the user account has been locked.

Type
String

Warehouse name
ACCOUNT_LOCKED or AL

Expires attribute

Description
The expiration date of this user ID.

Type
String

Warehouse name
EXPIRES

Loginretries attribute

Description
The number of incorrect logon attempts before the user ID is locked.

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

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

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

Warehouse name
LOGINRETRIES or L

Devices attribute group

This attribute group contains network and storage device status 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 Devices attribute group:

Node attribute - This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Warehouse name

NODE

Timestamp attribute

Description

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

Type

String

Warehouse name

TIMESTAMP

Name attribute - This attribute is a key attribute.

Description

The name of the device.

Type

String

Warehouse name

NAME

Parent attribute - This attribute is a key attribute.

Description

The parent device name.

Type

String

Warehouse name

PARENT

Type attribute

Description

The device type.

Type

	String
Warehouse name	TYPE
State attribute	
Description	The device status.
Type	String
Warehouse name	STATE
Class attribute	
Description	The class of the device.
Type	String
Warehouse name	CLASS

Disks attribute group

This attribute group contains system disk 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 Disks attribute group:

Node attribute - This attribute is a key attribute.

Description	The managed system name of the agent.
Type	String
Warehouse name	NODE

Timestamp attribute

Description	The local time at the agent when the data was collected.
Type	String
Warehouse name	TIMESTAMP

Name attribute - This attribute is a key attribute.

Description
The device name.

Type
String

Warehouse name
NAME

Parent attribute - This attribute is a key attribute.

Description
The parent device name.

Type
String

Warehouse name
PARENT

Type attribute

Description
The type of device (Adapter, Disk, and so on).

Type
String

Warehouse name
TYPE

Active Disk Pct attribute

Description
The percentage of time the physical disk was active (bandwidth utilization for the drive). This number is valid for Type Disk only.

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

- Not Collected (-10)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
ACTIVE_DISK_PCT or ADP

Transfers Bytes per Sec attribute

Description
The amount of data transferred (read or written) to the drive in bytes per second. This number is valid for the Adapter and Disk types.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

TRANSFERS_BYTES_PER_SEC or TBPS

Transfers KB per Sec attribute

Description

The amount of data transferred (read or written) to the drive in KBs per second. This number is valid for the Adapter type.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

TRANSFERS_KB_PER_SEC or TKPS

Transfers per Sec attribute

Description

The number of transfers per second issued to the physical disk. A transfer is an I/O request to the physical disk that can be a combination of multiple logical requests. A transfer is of indeterminate size. This is valid for all storage device types.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

TRANSFERS_PER_SEC or TPS

Read KB per Sec attribute

Description

The total number of KBs read. This number is valid for all storage device types.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

READ_KB_PER_SEC or RKPS

Written KB per Sec attribute**Description**

The total number of KBs written. This number is valid for all storage device types.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

WRITTEN_KB_PER_SEC or WKPS

Read Transfers per Sec attribute**Description**

The number of read transfers per second. This number is valid for all storage device types, except Adapter.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

READ_TRANSFERS_PER_SEC or RTPS

Avg Read Transfer MS attribute**Description**

The average service time in milliseconds per read transfer. This time is valid for all storage device types, except Adapter.

Type

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

- Not Collected (-10)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

AVG_READ_TRANSFER_MS or ARTM

Min Read Service MS attribute**Description**

The minimum read service time in milliseconds. This time is valid for all storage device types, except Adapter.

Type

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

- Not Collected (-10)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

MIN_READ_SERVICE_MS or MRSM

Max Read Service MS attribute**Description**

The maximum read service time in milliseconds. This time is valid for all storage device types, except Adapter.

Type

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

- Not Collected (-10)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

MAX_READ_SERVICE_MS or MRSM0

Read Timeouts per Sec attribute

Description

The number of read timeouts per second. This number is valid for the Disk type.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

READ_TIMEOUTS_PER_SEC or RTPS0

Failed Read per Sec attribute**Description**

The number of failed read requests per second. This number is valid for the Disk type.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

FAILED_READ_PER_SEC or FRPS

Write Transfers per Sec attribute**Description**

The number of write transfers per second. This number is valid for all storage device types, except Adapter.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

WRITE_TRANSFERS_PER_SEC or WTPS

Avg Write Transfer MS attribute

Description

The average service time in milliseconds per write transfer. This time is valid for all storage device types, except Adapter.

Type

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

- Not Collected (-10)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

AVG_WRITE_TRANSFER_MS or AWTM

Min Write Service MS attribute**Description**

The minimum write service time in milliseconds. This time is valid for all storage device types, except Adapter.

Type

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

- Not Collected (-10)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

MIN_WRITE_SERVICE_MS or MWSM

Max Write Service MS attribute**Description**

The maximum write service time in milliseconds. This time is valid for all storage device types, except Adapter.

Type

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

- Not Collected (-10)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

MAX_WRITE_SERVICE_MS or MWSM0

Write Timeout per Sec attribute**Description**

The number of write timeouts per second. This number is valid for the Disk type.

Type

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

- Not Collected (-10)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

WRITE_TIMEOUT_PER_SEC or WTPS0

Failed Writes per Sec attribute**Description**

The number of failed write requests per second. This number is valid for the Disk type.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

FAILED_WRITES_PER_SEC or FWPS

Avg Request In WaitQ MS attribute**Description**

The average time in milliseconds spent by a transfer request in the wait queue. This time is valid for all storage device types, except Adapter.

Type

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

- Not Collected (-10)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

AVG_REQUEST_IN_WAITQ_MS or ARIWM

Min Request In WaitQ MS attribute

Description

The minimum time in milliseconds spent by a transfer request in the wait queue. This time is valid for all storage device types, except Adapter.

Type

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

- Not Collected (-10)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

MIN_REQUEST_IN_WAITQ_MS or MRIWM

Max Request In WaitQ MS attribute

Description

The maximum time in milliseconds spent by a transfer request in the wait queue. This time is valid for all storage device types, except Adapter.

Type

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

- Not Collected (-10)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

MAX_REQUEST_IN_WAITQ_MS or MRIWM0

Avg WaitQ Size attribute

Description

The average wait queue size. This size is valid for all storage device types, except Adapter.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

AVG_WAITQ_SIZE or AWS

Avg ServiceQ Size attribute

Description

The average service queue size. This size is valid for all storage device types, except Adapter.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

AVG_SERVICEQ_SIZE or ASS

ServiceQ Full per Sec attribute

Description

The number of times the service queue becomes full, or the disk is not accepting any more service requests, per second. This number is valid for all storage device types, except Adapter.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

SERVICEQ_FULL_PER_SEC or SFPS

FC Stats attribute group

This attribute group contains information about the active Fibre Channel adapters.

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 FC Stats attribute group:

Node attribute - This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Warehouse name

NODE

Timestamp attribute

Description

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

Type

String

Warehouse name

TIMESTAMP

Name attribute - This attribute is a key attribute.

Description

The name of the fibre channel adapter.

Type

String

Warehouse name

NAME

Port Speed (supported) attribute

Description

Indicates the maximum media speed setting (adapter Bandwidth in Gbps).

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PORT_SPEED_SUPPORTED or PSS

Port Speed (running) attribute

Description

Indicates the current media speed setting (in Gbps).

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PORT_SPEED_RUNNING or PSR

Seconds Since Last Reset attribute

Description

The number of seconds since the last reset of statistics on the adapter.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-9223372036854775808)
- Value Exceeds Maximum (9223372036854775807)

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

Warehouse name

SECONDS_SINCE_LAST_RESET or SSLR

Transmitted Frames attribute

Description

The number of frames transmitted.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-9223372036854775808)
- Value Exceeds Maximum (9223372036854775807)

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

Warehouse name

TRANSMITTED_FRAMES or TF

Received Frames attribute

Description

The number of frames received.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-9223372036854775808)
- Value Exceeds Maximum (9223372036854775807)

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

Warehouse name

RECEIVED_FRAMES or RF

Error Frames attribute

Description

The number of frames that were in error.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-9223372036854775808)
- Value Exceeds Maximum (9223372036854775807)

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

Warehouse name

ERROR_FRAMES or EF

Dumped Frames attribute

Description

The number of frames that were dumped.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-9223372036854775808)
- Value Exceeds Maximum (9223372036854775807)

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

Warehouse name

DUMPED_FRAMES or DF

Link Failure attribute

Description

The link failure count.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-9223372036854775808)
- Value Exceeds Maximum (9223372036854775807)

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

Warehouse name

LINK_FAILURE_COUNT or LFC

Loss of Sync attribute

Description

The number of times the synchronization was lost.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-9223372036854775808)
- Value Exceeds Maximum (9223372036854775807)

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

Warehouse name

LOSS_OF_SYNC_COUNT or LOSC

Loss of Signal attribute

Description

The number of times the signal was lost.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-9223372036854775808)
- Value Exceeds Maximum (9223372036854775807)

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

Warehouse name

LOSS_OF_SIGNAL or LOS

Primitive Seq Protocol Error attribute

Description

The number of times the primitive sequence was in error.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-9223372036854775808)

- Value Exceeds Maximum (9223372036854775807)

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

Warehouse name

PRIMITIVE_SEQ_PROTOCOL_ERROR_COUNT or PSPEC

Invalid Transmission Word attribute

Description

The number of invalid transmission words received.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-9223372036854775808)
- Value Exceeds Maximum (9223372036854775807)

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

Warehouse name

INVALID_TX_WORD_COUNT or ITWC

Invalid CRC attribute

Description

The number of received frames with an invalid CRC.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-9223372036854775808)
- Value Exceeds Maximum (9223372036854775807)

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

Warehouse name

INVALID_CRC_COUNT or ICC

Input Requests attribute

Description

The number of input requests.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-9223372036854775808)
- Value Exceeds Maximum (9223372036854775807)

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

Warehouse name

INPUT_REQUESTS or IR

Output Requests attribute

Description

The number of output requests.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-9223372036854775808)
- Value Exceeds Maximum (9223372036854775807)

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

Warehouse name

OUTPUT_REQUESTS or OR

Control Requests attribute

Description

The number of control requests.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-9223372036854775808)
- Value Exceeds Maximum (9223372036854775807)

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

Warehouse name

CONTROL_REQUESTS or CR

Input Bytes attribute

Description

The number of input bytes.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-9223372036854775808)
- Value Exceeds Maximum (9223372036854775807)

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

Warehouse name
INPUT_BYTES or IB

Output Bytes attribute

Description
The number of output bytes.

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

- Not Collected (-1)
- Value Exceeds Minimum (-9223372036854775808)
- Value Exceeds Maximum (9223372036854775807)

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

Warehouse name
OUTPUT_BYTES or OB

Input Requests per second attribute

Description
The number of input requests per second.

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
INPUT_REQUESTS_PER_SECOND or IRPS

Output Requests per second attribute

Description
The number of output requests per second.

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

OUTPUT_REQUESTS_PER_SECOND or ORPS

Control Requests per second attribute**Description**

The number of control requests per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

CONTROL_REQUESTS_PER_SECOND or CRPS

Input Bytes per second attribute**Description**

The number of input bytes per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

INPUT_BYTES_PER_SECOND or IBPS

Output Bytes per second attribute**Description**

The number of output bytes per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

OUTPUT_BYTES_PER_SECOND or OBPS

Bandwidth Used per second attribute**Description**

Input plus output bytes divided by port speed per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

BANDWIDTH_USED_PER_SECOND or BUPS

World Wide Node Name attribute**Description**

The worldwide name of the adapter.

Type

String

Warehouse name

WORLD_WIDE_NODE_NAME or WWNN

World Wide Port Name attribute**Description**

The worldwide name of the port.

Type

String

Warehouse name

WORLD_WIDE_PORT_NAME or WWPNN

File Systems attribute group

This attribute group contains file system 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 File Systems attribute group:

Node attribute - This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Warehouse name

NODE

Timestamp attribute**Description**

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

Type

String

Warehouse name

TIMESTAMP

Name attribute - This attribute is a key attribute.**Description**

The file system name.

Type

String

Warehouse name

NAME

Mount Point attribute**Description**

The file system mount point.

Type

String

Warehouse name

MOUNT_POINT or MP

Volume Group Name attribute**Description**

The name of the volume group.

Type

String

Warehouse name

VOLUME_GROUP_NAME or VGN

Size MB attribute**Description**

The file system size in MB.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
SIZE_MB

Free MB attribute

Description
The file system free space in MB.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
FREE_MB

Used MB attribute

Description
The file system used space in MB.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
USED_MB

Free Pct attribute

Description
The file system free space percentage.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
FREE_PCT

Used Pct attribute

Description
The file system used space percentage.

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
USED_PCT

Firewall attribute group

This attribute group contains VIOS firewall configuration 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 Firewall attribute group:

Node attribute - This attribute is a key attribute.

Description
The managed system name of the agent.

Type
String

Warehouse name
NODE

Timestamp attribute

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

Type
String

Warehouse name
TIMESTAMP

Interface attribute - This attribute is a key attribute.

Description
The network interface name.

Type

String

Warehouse name

INTERFACE

Local Port attribute - This attribute is a key attribute.

Description

The local port.

Type

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

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

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

Warehouse name

LOCAL_PORT

Remote Port attribute - This attribute is a key attribute.

Description

The remote or destination port.

Type

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

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

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

Warehouse name

REMOTE_PORT or RP

Service attribute - This attribute is a key attribute.

Description

The name of the service. For example, telnet and ftp.

Type

String

Warehouse name

SERVICE

IP Address attribute - This attribute is a key attribute.

Description

The IP address of the destination.

Type

String

Warehouse name

IP_ADDRESS

Expiration Time attribute - This attribute is a key attribute.

Description

The time when this rule is valid.

Type

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

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

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

Warehouse name

EXPIRATION_TIME or ET

Internet Protocol Detail attribute group

This attribute group contains IP interface details.

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 Internet Protocol Detail attribute group:

Node attribute - This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Warehouse name

NODE

Timestamp attribute

Description

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

Type

String

Warehouse name

TIMESTAMP

Name attribute - This attribute is a key attribute.

Description

The network interface name.

Type

String

Warehouse name

NAME

Packets Received per Sec attribute**Description**

The IP packets received per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PACKETS_RECEIVED_PER_SEC or PRPS

Ioctet Received KB per Sec attribute**Description**

The KBs received per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

IOCTET_RECEIVED_KB_PER_SEC or IRKPS

Input Errors per Sec attribute**Description**

The input errors per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

INPUT_ERRORS_PER_SEC or IEPS

Multicast Pkt Received per Sec attribute

Description

The multicast packets received per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

MULTICAST_PKT_RECEIVED_PER_SEC or MPRPS

Input Packets Dropped per Sec attribute

Description

The input packets dropped per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

INPUT_PACKETS_DROPPED_PER_SEC or IPDPS

Packets Transmitted per Sec attribute

Description

The packets transmitted per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PACKETS_TRANSMITTED_PER_SEC or PTPS

Ioctet Transmitted KB per Sec attribute**Description**

The KBs transmitted per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

IOCTET_TRANSMITTED_KB_PER_SEC or ITKPS

Output Errors per Sec attribute**Description**

The output errors per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

OUTPUT_ERRORS_PER_SEC or OEPS

Multicast Pkt Transmitted per Sec attribute**Description**

The multicast packets transmitted per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

MULTICAST_PKT_TRANSMITTED_PER_SEC or MPTPS

Internet Protocol Summary attribute group

This attribute group contains system-wide IP networking 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 Internet Protocol Summary attribute group:

Node attribute - This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Warehouse name

NODE

Timestamp attribute

Description

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

Type

String

Warehouse name

TIMESTAMP

Packets Received per Sec attribute

Description

The IP packets received per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PACKETS_RECEIVED_PER_SEC or PRPS

Frag Received per Sec attribute

Description

The IP fragments received per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

FRAG_RECEIVED_PER_SEC or FRPS

Packets Forwarded per Sec attribute

Description

The IP packets forwarded per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PACKETS_FORWARDED_PER_SEC or PFPS

Received Datagrams per Sec attribute

Description

The IP datagrams successfully received per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

RECEIVED_DATAGRAMS_PER_SEC or RDPS

Transmitted Datagrams per Sec attribute

Description

The IP datagrams transmitted per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

TRANSMITTED_DATAGRAMS_PER_SEC or TDPS

Total Packets Reassembled per Sec attribute

Description

The IP packets successfully reassembled per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

TOTAL_PACKETS_REASSEMBLED_PER_SEC or TPRPS

Frag Output Packets per Sec attribute

Description

The output packets successfully fragmented per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

FRAG_OUTPUT_PACKETS_PER_SEC or FOPPS

Logical Partition attribute group

This attribute group contains information about the logical partition.

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 Partition attribute group:

Node attribute - This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Warehouse name

NODE

Timestamp attribute

Description

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

Type

String

Warehouse name

TIMESTAMP

User CPU Pct attribute

Description

The percentage of LPAR system time spent in CPU User mode.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

USER_CPU_PCT or UCP

System CPU Pct attribute

Description

The percentage of LPAR system time spent in CPU System mode.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
SYSTEM_CPU_PCT or SCP

IO Wait CPU Pct attribute

Description
The percentage of LPAR system time spent in CPU I/O Wait mode.

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
IO_WAIT_CPU_PCT or IWCP

Idle CPU Pct attribute

Description
The percentage of LPAR system time spent in CPU idle mode.

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
IDLE_CPU_PCT or ICP

Entitlement attribute

Description
The number of entitlement units assigned to this LPAR.

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

- Not Collected (-10)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
ENTITLEMENT or E

Total Used Pct attribute

Description

The percentage of the total system CPU in use by this LPAR.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

TOTAL_USED_PCT or TUP

Entitlement Used Pct attribute

Description

The percentage of the given CPU entitlement in use by this LPAR.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

ENTITLEMENT_USED_PCT or EUP

LPAR Number attribute

Description

The LPAR identification number assigned to this LPAR.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

LPAR_NUMBER or LN

Shared Mode attribute

Description

The shared logical partition mode (dedicated or shared).

Type

String

Warehouse name

SHARED_MODE or SM

Capped Mode attribute**Description**

The capped logical partition mode (uncapped or capped).

Type

String

Warehouse name

CAPPED_MODE or CM

SMT Mode attribute**Description**

The simultaneous multi-threading mode (off or on).

Type

String

Warehouse name

SMT_MODE

Number of Physical CPUs attribute**Description**

The number of active licensed physical CPUs.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

NUMBER_OF_PHYSICAL_CPUS or NOPC

Number of Virtual CPUs attribute**Description**

The number of current online virtual CPUs.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)

- Value Exceeds Maximum (2147483647)

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

Warehouse name

NUMBER_OF_VIRTUAL_CPUS or NOVC

Number of Logical CPUs attribute

Description

The number of current online logical CPUs.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

NUMBER_OF_LOGICAL_CPUS or NOLC

Available CPUs in Pool attribute

Description

The number of CPUs that are available for allocation.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

AVAILABLE_CPUS_IN_POOL or ACIP

Number of Physical CPUs in Shared Pool attribute

Description

The number of physical CPUs in the shared pool.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

NUMBER_OF_PHYSICAL_CPUS_IN_SHARED_POOL or NOPCISP

Busy Pct attribute

Description

The logical busy time percentage.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

BUSY_PCT

Phys Busy Pct attribute

Description

The physical busy time percentage.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PHYS_BUSY_PCT or PBP

Virt Context CPU Switches per Sec attribute

Description

The virtual CPU context switches per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

VIRT_CONTEXT_CPU_SWITCHES_PER_SEC or VCCSPS

Max Memory attribute**Description**

The maximum amount of memory, in MB, this LPAR can support.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

MAX_MEMORY

Min Memory attribute**Description**

The minimum amount of memory, in MB, this LPAR can support.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

MIN_MEMORY

Max Phys CPUs attribute**Description**

The maximum number of physical CPUs in the system.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

MAX_PHYS_CPUS or MPC

Min Virt CPUs attribute

Description

The minimum number of virtual CPUs in this LPAR.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

MIN_VIRT_CPUS or MVC

Max Virt CPUs attribute

Description

The maximum number of virtual CPUs in this LPAR.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

MAX_VIRT_CPUS or MVC0

Min CPU Capacity attribute

Description

The minimum processor capacity (CPU units: 100 per processor).

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

MIN_CPU_CAPACITY or MCC

Max CPU Capacity attribute

Description

The maximum processor capacity (CPU units: 100 per processor).

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

MAX_CPU_CAPACITY or MCC0

CPU Capacity Increment attribute**Description**

The processor capacity change granule (CPU units: 100 per processor).

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

CPU_CAPACITY_INCREMENT or CCI

Online Mem attribute**Description**

The amount of currently online memory in MB.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

ONLINE_MEM

Max Dispatch Latency attribute**Description**

The maximum latency between dispatches in nanoseconds.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

MAX_DISPATCH_LATENCY or MDL

Unallocated CPU In Pool attribute**Description**

The unallocated capacity available in the shared pool.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

UNALLOCATED_CPU_IN_POOL or UCIP

CPU Entitlement attribute**Description**

The entitled processor capacity for partition.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

CPU_ENTITLEMENT or CE

Capacity Weight attribute**Description**

The relative weight between 0 and 255 that is used to determine how much extra CPU capacity this LPAR is to receive.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

CAPACITY_WEIGHT or CW

Min Req Virt CPU attribute

Description

The minimum required virtual processor capacity.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

MIN_REQ_VIRT_CPU or MRVC

Phantom Interrupts attribute

Description

The number of phantom interrupts.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PHANTOM_INTERRUPTS or PI

Entitlement Pct attribute

Description

The entitlement as a percentage.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

ENTITLEMENT_PCT or EP

Num Hypervisor Calls per Sec attribute

Description

The number of hypervisor calls per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

NUM_HYPERVISOR_CALLS_PER_SEC or NHCP

Time In Hypervisor Pct attribute

Description

The amount of time spent in the hypervisor percentage.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

TIME_IN_HYPERVISOR_PCT or TIHP

Machine ID attribute

Description

The frame hardware ID to which this LPAR belongs.

Type

String

Warehouse name

MACHINE_ID

Uptime attribute

Description

The period of time that this LPAR has been operational.

Type

String

Warehouse name

UPTIME

Hostname attribute**Description**

The host name of the LPAR.

Type

String

Warehouse name

HOSTNAME

Physical CPU Units Used attribute**Description**

The number of physical CPU units consumed by this LPAR.
(physB)

Type

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

- Not Collected (-100)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PHYSICAL_CPU_UNITS_USED or PCUU

Available CPU Units in Pool attribute**Description**

The number of physical CPU units that are available for allocation from the shared pool. (app)

Type

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

- Not Collected (-100)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

AVAILABLE_CPU_UNITS_IN_POOL or ACUIP

Physical CPU Size of Shared Pool attribute**Description**

The number of physical CPU units in the shared pool. (psize)

Type

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

- Not Collected (-100)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PHYSICAL_CPU_SIZE_OF_SHARED_POOL or PCSOSP

Last Machine ID attribute**Description**

The frame hardware ID that this LPAR belongs to as of the previous sampling.

Type

String

Warehouse name

LAST_MACHINE_ID or LMI

Max CPU Cap Used Pct attribute**Description**

The percentage of maximum physical CPU available to this LPAR that is used. For capped LPARs, this is the same as CPU_Phys_Ent_Pct.

Type

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

- Not Collected (-100)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

MAX_CPU_CAP_USED_PCT or MCCUP

CPU Pool ID attribute**Description**

The ID of the Shared Processor Pool.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

POOLID

Pool Entitlement attribute**Description**

The number of physical CPU units reserved for usage by this pool.

Type

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

- Not Collected (-100)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

POOL_ENTITLEMENT or PE

Maximum Pool Capacity attribute**Description**

The maximum number of physical CPU units this pool can use.

Type

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

- Not Collected (-100)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

MAXIMUM_POOL_CAPACITY or MPC0

SMT Threads attribute**Description**

The number of threads per CPU.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

SMT_THREADS or ST

Entitlement attribute

Description

The number of entitlement units assigned to this LPAR. (ent)

Type

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

- Not Collected (-100)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

ENTITLEMENT_2 or E2

Old Machine ID attribute

Description

The nonunique frame hardware ID to which this LPAR belongs from xutsname.nid.

Type

String

Warehouse name

OLD_MACHINE_ID or OMI

Logical Volumes attribute group

This attribute group contains logical volume 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 Logical Volumes attribute group:

Node attribute - This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Warehouse name

NODE

Timestamp attribute**Description**

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

Type

String

Warehouse name

TIMESTAMP

Name attribute - This attribute is a key attribute.**Description**

The name of the logical volume.

Type

String

Warehouse name

NAME

State attribute**Description**

The state of the logical volume.

Type

String

Warehouse name

STATE

Volume Group Name attribute**Description**

The name of the volume group.

Type

String

Warehouse name

VOLUME_GROUP_NAME or VGN

Type attribute**Description**

The logical volume type.

Type

String

Warehouse name

TYPE

Mount Point attribute

Description

The file system mount point for the logical volume.

Type

String

Warehouse name

MOUNT_POINT or MP

Size MB attribute

Description

The size of the logical volume in MB.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

SIZE_MB

MPIO Attributes attribute group

This attribute group contains Multi Path I/O attribute 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 MPIO Attributes attribute group:

Node attribute - This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Warehouse name

NODE

Timestamp attribute

Description

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

Type

String

Warehouse name
TIMESTAMP

Device Name attribute - This attribute is a key attribute.

Description
The name of the storage device.

Type
String

Warehouse name
DEVICE_NAME or DN

Attribute attribute - This attribute is a key attribute.

Description
The name of the attribute.

Type
String

Warehouse name
ATTRIBUTE

Value attribute

Description
The value of the attribute.

Type
String

Warehouse name
VALUE

Description attribute

Description
The description of the attribute.

Type
String

Warehouse name
DESCRIPTION or D

User Settable attribute

Description
Indicates whether or not the attribute can be set by the user.

Type
String

Warehouse name
USER_SETTABLE or US

MPIO Status attribute group

This attribute group contains Multi-Path I/O status 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 MPIO Status attribute group:

Node attribute - This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Warehouse name

NODE

Timestamp attribute

Description

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

Type

String

Warehouse name

TIMESTAMP

Device Name attribute - This attribute is a key attribute.

Description

The name of the storage device.

Type

String

Warehouse name

DEVICE_NAME or DN

Parent attribute - This attribute is a key attribute.

Description

The parent device of the current device.

Type

String

Warehouse name

PARENT

Path Status attribute

Description

The current status of the path.

Type

String

Warehouse name

PATH_STATUS or PS

Status attribute

Description

The operational status of the device.

Type

String

Warehouse name

STATUS

Connection attribute - This attribute is a key attribute.

Description

The connection ID of the SCSI device.

Type

String

Warehouse name

CONNECTION

Network Adapters Rates attribute group

This attribute group contains network adapter rate 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 Network Adapters Rates attribute group:

Node attribute - This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Warehouse name

NODE

Timestamp attribute

Description

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

Type

String

Warehouse name

TIMESTAMP

Name attribute - This attribute is a key attribute.

Description

Name of the adapter.

Type

String

Warehouse name
NAME

Parent attribute - This attribute is a key attribute.

Description
Parent adapter name.

Type
String

Warehouse name
PARENT

Type attribute

Description
Type of adapter.

Type
String

Warehouse name
TYPE

Bytes Sent per Sec attribute

Description
The number of bytes per second transmitted successfully by this device.

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
BYTES_SENT_PER_SEC or BSPS

Pkts Sent per Sec attribute

Description
The number of packets per second transmitted successfully by the device.

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PKTS_SENT_PER_SEC or PSPS

Pkts Sent Errors per Sec attribute**Description**

The number of output errors per second encountered on this device.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PKTS_SENT_ERRORS_PER_SEC or PSEPS

Sent Pkts Dropped per Sec attribute**Description**

The number of packets per second accepted by the device driver for transmissions that were not given to the device for any reason.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

SENT_PKTS_DROPPED_PER_SEC or SPDPS

Broadcast Pkts Sent per Sec attribute**Description**

The number of broadcast packets per second transmitted without any error.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

BROADCAST_PKTS_SENT_PER_SEC or BPSPS

Multicast Pkts Sent per Sec attribute**Description**

The number of multicast packets per second transmitted without any error.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

MULTICAST_PKTS_SENT_PER_SEC or MPSPS

Sent Interrupts per Sec attribute**Description**

The number of transmit interrupts per second received by the driver from the adapter.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

SENT_INTERRUPTS_PER_SEC or SIPS

Bytes Recvd per Sec attribute**Description**

The number of bytes per second received successfully by the device.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

BYTES_RECVD_PER_SEC or BRPS

Pkts Recvd per Sec attribute**Description**

The number of packets per second received successfully by the device.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PKTS_RECVD_PER_SEC or PRPS

Pkts Recv Errors per Sec attribute**Description**

The number of input errors per second encountered on this device.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PKTS_RECV_ERRORS_PER_SEC or PREPS

Bad Pkts Recvd per Sec attribute**Description**

The number of bad packets per second received by the device driver.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

BAD_PKTS_RECVD_PER_SEC or BPRPS

Recv Pkts Dropped per Sec attribute**Description**

The number of packets per second received by the device driver from this device that were not given to a network driver for any reason.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

RECV_PKTS_DROPPED_PER_SEC or RPDPS

Broadcast Pkts Recvd per Sec attribute**Description**

The number of broadcast packets per second received without any error.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

BROADCAST_PKTS_RECVD_PER_SEC or BPRPS0

Multicast Pkts Recvd per Sec attribute**Description**

The number of multicast packets per second received without any error.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

MULTICAST_PKTS_RECVD_PER_SEC or MPRPS

Recv Interrupts per Sec attribute

Description

The number of interrupts per second received by the driver from the adapter.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

RECV_INTERRUPTS_PER_SEC or RIPS

TransmitsQ per Sec attribute

Description

The number of pending outgoing packets per second in the software transmit queue or the hardware transmit queue.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

TRANSMITSQ_PER_SEC or TPS

Max TransmitsQ per Sec attribute

Description

The maximum number of outgoing packets per second ever queued to the software transmit queue.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

MAX_TRANSMITSQ_PER_SEC or MTPS

Qoverflow per Sec attribute

Description

The number of outgoing packets per second that have overflowed the software transmit queue.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

QOVERFLOW_PER_SEC or QPS

Real Pkts Recvd per Sec attribute

Description

The number of packets per second received on the physical network.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

REAL_PKTS_RECVD_PER_SEC or RPRPS

Real Pkts Bridged per Sec attribute

Description

The number of packets per second received on the physical network that were bridged to the virtual network.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

REAL_PKTS_BRIDGED_PER_SEC or RPBPS

Real Pkts Consumed per Sec attribute

Description

The number of packets per second received on the physical network that were addressed to the interface configured over the SEA.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

REAL_PKTS_CONSUMED_PER_SEC or RPCPS

Real Pkts Fragmented per Sec attribute

Description

The number of packets per second received on the physical network that were fragmented before being bridged to the virtual network because they were bigger than the Maximum Transmission Unit (MTU) for the outgoing adapter.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

REAL_PKTS_FRAGMENTED_PER_SEC or RPFPS

Real Pkts Sent per Sec attribute

Description

The number of packets per second sent on the physical network. Includes packets sent from the interface configured over the SEA and each packet bridged from the virtual network to the physical network (including fragments).

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

REAL_PKTS_SENT_PER_SEC or RPSPS

Real Pkts Dropped per Sec attribute

Description

The number of packets per second received on the physical network that were dropped.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

REAL_PKTS_DROPPED_PER_SEC or RPDPS0

Virtual Pkts Recvd per Sec attribute

Description

The number of packets per second received on the virtual network on all of the virtual adapters.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

VIRTUAL_PKTS_RECVD_PER_SEC or VPRPS

Virtual Pkts Bridged per Sec attribute

Description

The number of packets per second received on the virtual network that were bridged to the physical network.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

VIRTUAL_PKTS_BRIDGED_PER_SEC or VPBPS

Virtual Pkts Consumed per Sec attribute

Description

The number of packets per second received on the virtual network that were addressed to the interface configured over the SEA.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

VIRTUAL_PKTS_CONSUMED_PER_SEC or VPCPS

Virtual Pkts Fragmented per Sec attribute

Description

The number of packets per second received on the virtual network that were fragmented before being bridged to the physical network because they were bigger than the Maximum Transmission Unit (MTU) for the outgoing adapter.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

VIRTUAL_PKTS_FRAGMENTED_PER_SEC or VPFPS

Virtual Pkts Sent per Sec attribute

Description

The number of packets per second sent on the virtual network.

Includes packets sent from the interface configured over the SEA and each packet bridged from the physical network to the virtual network (including fragments).

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

VIRTUAL_PKTS_SENT_PER_SEC or VPSPS

Virtual Pkts Dropped per Sec attribute

Description

The number of packets per second received on the virtual network that were dropped.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

VIRTUAL_PKTS_DROPPED_PER_SEC or VPDPS

Output Pkts Generated per Sec attribute

Description

The number of packets per second with a valid VLAN tag or no VLAN tag sent out of the interface configured over the SEA.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

OUTPUT_PKTS_GENERATED_PER_SEC or OPGPS

Output Pkts Dropped per Sec attribute

Description

The number of packets per second sent out of the interface configured over the SEA that are dropped because of an incorrect VLAN tag.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

OUTPUT_PKTS_DROPPED_PER_SEC or OPDPS

Output Pkts Failures per Sec attribute**Description**

The number of packets per second that cannot be sent because of underlying device errors. Includes errors sending on the physical network and virtual network including fragments and ICMP error packets generated by the SEA.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

OUTPUT_PKTS_FAILURES_PER_SEC or OPFPS

Mem Alloc Failures per Sec attribute**Description**

The number of packets per second that cannot be sent because of insufficient network memory to complete an operation.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

MEM_ALLOC_FAILURES_PER_SEC or MAFPS

ICMP Error Pkts Sent per Sec attribute**Description**

The number of ICMP error packets per second sent when a big packet cannot be fragmented because the Don't Fragment bit was set.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

ICMP_ERROR_PKTS_SENT_PER_SEC or IEPSPS

Non IP Pkts Larger Than MTU per Sec attribute**Description**

The number of packets per second that cannot be sent because they were bigger than the Maximum Transmission Unit (MTU) for the outgoing adapter and cannot be fragmented because they were not IP packets.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

NON_IP_PKTS_LARGER_THAN_MTU_PER_SEC or NIPLTMPs

ThreadQ Overflow Pkts per Sec attribute**Description**

The number of packets per second that were dropped from the thread queues because there was no space to accommodate a newly-received packet.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)

- Value Exceeds Maximum (2147483647)

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

Warehouse name

THREADQ_OVERFLOW_PKTS_PER_SEC or TOPPS

HA Keep Alive Pkts per Sec attribute

Description

The number of high availability keepalive packets per second received on the control channel. Keepalive packets are received on the backup SEA while the primary SEA is active.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

HA_KEEP_ALIVE_PKTS_PER_SEC or HKAPPS

HA Recovery Pkts per Sec attribute

Description

The number of high availability recovery packets per second received on the control channel. Recovery packets are sent by the primary SEA when it recovers from a failure and is ready to be active again.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

HA_RECOVERY_PKTS_PER_SEC or HRPPS

HA Notify Pkts per Sec attribute

Description

The number of high availability notify packets per second received on the control channel. Notify packets are sent by the backup SEA when it detects that the primary SEA has recovered.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

HA_NOTIFY_PKTS_PER_SEC or HNPPS

HA Limbo Pkts per Sec attribute

Description

The number of high availability limbo packets per second received on the control channel.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

HA_LIMBO_PKTS_PER_SEC or HLPPS

HA State attribute

Description

The current high availability state of the shared ethernet adapter.

Type

String

Warehouse name

HA_STATE

HA Bridge Mode attribute

Description

Describes to what level, if any, the shared ethernet adapter is currently bridging traffic.

Type

String

Warehouse name

HA_BRIDGE_MODE or HBM

Times Primary per Sec attribute

Description

The number of times per second that the shared ethernet adapter was idle and became active because the primary SEA had a failure.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

TIMES_PRIMARY_PER_SEC or TPPS

Time Backup per Sec attribute**Description**

The number of times per second that the shared ethernet adapter was active and became idle because of a failure.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

TIME_BACKUP_PER_SEC or TBPS

HA Mode attribute**Description**

The high availability mode of the shared ethernet adapter (Auto, Backup, or Disabled).

Type

String

Warehouse name

HA_MODE

Priority attribute**Description**

The trunk priority of the virtual ethernet for the shared ethernet adapter. Used by the SEA protocol to determine which SEA acts as primary and which one acts as backup. Values range from 1-12, where a lower number is favored to act as a primary.

Type

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

- Not Collected (-1)

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

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

Warehouse name
PRIORITY

Adapter Protocol attribute

Description

Indicates the selected network adapter transmission protocol: Auto Negotiation, Full or Half Duplex.

Type

String

Warehouse name
ADAPTER_PROTOCOL or AP

Media Speed Running attribute

Description

Indicates the maximum media speed setting (adapter Bandwidth in Mbps).

Type

String

Warehouse name
MEDIA_SPEED_RUNNING or MSR

Bandwidth Util Pct attribute

Description

Percentage of physical network adapter bandwidth utilized.

Type

Real number (gauge) with 3 decimal places of precision with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Not Collected (-1000)

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

Warehouse name
BANDWIDTH_UTIL_PCT or BUP

Network Adapters Totals attribute group

This attribute group contains network adapter totals.

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 Adapters Totals attribute group:

Node attribute - This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Warehouse name

NODE

Timestamp attribute

Description

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

Type

String

Warehouse name

TIMESTAMP

Name attribute - This attribute is a key attribute.

Description

The name of the adapter.

Type

String

Warehouse name

NAME

Parent attribute - This attribute is a key attribute.

Description

The parent adapter name.

Type

String

Warehouse name

PARENT

Type attribute

Description

The type of adapter.

Type

String

Warehouse name

TYPE

Bytes Sent attribute

Description

The number of bytes transmitted successfully by the device.

Type	String
Warehouse name	BYTES_SENT
Pkts Sent attribute	
Description	The number of packets transmitted successfully by the device.
Type	String
Warehouse name	PKTS_SENT
Pkts Sent Error attribute	
Description	The number of output errors encountered on this device.
Type	String
Warehouse name	PKTS_SENT_ERROR or PSE
Sent Pkts Dropped attribute	
Description	The number of packets accepted by the device driver for transmission that were not given to the device for any reason.
Type	String
Warehouse name	SENT_PKTS_DROPPED or SPD
Broadcast Pkts Sent attribute	
Description	The number of broadcast packets transmitted without any error.
Type	String
Warehouse name	BROADCAST_PKTS_SENT or BPS
Multicast Pkts Sent attribute	
Description	The number of multicast packets transmitted without any error.
Type	String
Warehouse name	MULTICAST_PKTS_SENT or MPS
Sent Interrupts attribute	

Description

The number of transmit interrupts received by the driver from the adapter.

Type

String

Warehouse name

SENT_INTERRUPTS or SI

Bytes Recvd attribute**Description**

The number of bytes received successfully by the device.

Type

String

Warehouse name

BYTES_RECVD or BR

Pkts Recvd attribute**Description**

The number of packets received successfully by the device.

Type

String

Warehouse name

PKTS_RECVD

Pkts Recv Error attribute**Description**

The number of input errors encountered on this device.

Type

String

Warehouse name

PKTS_RECV_ERROR or PRE

Bad Pkts Recvd attribute**Description**

The number of bad packets received by the device driver.

Type

String

Warehouse name

BAD_PKTS_RECVD or BPR

Recv Pkts Dropped attribute**Description**

The number of packets received by the device driver from this device that were not for any reason given to a network driver.

Type

String

Warehouse name
RECV_PKTS_DROPPED or RPD

Broadcast Pkts Recvd attribute

Description
The number of broadcast packets received without any error.

Type
String

Warehouse name
BROADCAST_PKTS_RECVD or BPR0

Multicast Pkts Recvd attribute

Description
The number of multicast packets received without any error.

Type
String

Warehouse name
MULTICAST_PKTS_RECVD or MPR

Recv Interrupts attribute

Description
The number of interrupts received by the driver from the adapter.

Type
String

Warehouse name
RECV_INTERRUPTS or RI

TransmitsQ attribute

Description
The number of pending outgoing packets on either the software transmit queue or the hardware transmit queue.

Type
String

Warehouse name
TRANSMITSQ

Max TransmitsQ attribute

Description
The maximum number of outgoing packets ever queued to the software transmit queue.

Type
String

Warehouse name
MAX_TRANSMITSQ or MT

Qoverflow attribute

Description

The number of outgoing packets that have overflowed the software transmit queue.

Type

String

Warehouse name

QOVERFLOW

Real Pkts Recvd attribute**Description**

The number of packets received on the physical network.

Type

String

Warehouse name

REAL_PKTS_RECVD or RPR

Real Pkts Bridged attribute**Description**

The number of packets received on the physical network that were bridged to the virtual network.

Type

String

Warehouse name

REAL_PKTS_BRIDGED or RPB

Real Pkts Consumed attribute**Description**

The number of packets received on the physical network that were addressed to the interface configured over the shared ethernet adapter.

Type

String

Warehouse name

REAL_PKTS_CONSUMED or RPC

Real Pkts Fragmented attribute**Description**

The number of packets received on the physical network that were fragmented before being bridged to the virtual network because they were bigger than the Maximum Transmission Unit (MTU) for the outgoing adapter.

Type

String

Warehouse name

REAL_PKTS_FRAGMENTED or RPF

Real Pkts Sent attribute

Description

The number of packets sent on the physical network. Includes packets sent from the interface configured over the shared ethernet adapter and each packet bridged from the virtual network to the physical network including fragments.

Type

String

Warehouse name

REAL_PKTS_SENT or RPS

Real Pkts Dropped attribute**Description**

The number of packets received on the physical network that were dropped.

Type

String

Warehouse name

REAL_PKTS_DROPPED or RPD0

Virtual Pkts Recvd attribute**Description**

The number of packets received on the virtual network on all of the virtual adapters.

Type

String

Warehouse name

VIRTUAL_PKTS_RECVD or VPR

Virtual Pkts Bridged attribute**Description**

The number of packets received on the virtual network that were bridged to the physical network.

Type

String

Warehouse name

VIRTUAL_PKTS_BRIDGED or VPB

Virtual Pkts Consumed attribute**Description**

The number of packets received on the virtual network that were addressed to the interface configured over the shared ethernet adapter.

Type

String

Warehouse name

VIRTUAL_PKTS_CONSUMED or VPC

Virtual Pkts Fragmented attribute

Description

The number of packets received on the virtual network that were fragmented before being bridged to the physical network because they were bigger than the Maximum Transmission Unit (MTU) for the outgoing adapter.

Type

String

Warehouse name

VIRTUAL_PKTS_FRAGMENTED or VPF

Virtual Pkts Sent attribute**Description**

The number of packets sent on the virtual network. This includes packets sent from the interface configured over the shared ethernet adapter and each packet bridged from the physical network to the virtual network including fragments.

Type

String

Warehouse name

VIRTUAL_PKTS_SENT or VPS

Virtual Pkts Dropped attribute**Description**

The number of packets received on the virtual network that were dropped.

Type

String

Warehouse name

VIRTUAL_PKTS_DROPPED or VPD

Output Pkts Generated attribute**Description**

The number of packets with a valid VLAN tag or no VLAN tag sent out of the interface configured over the shared ethernet adapter.

Type

String

Warehouse name

OUTPUT_PKTS_GENERATED or OPG

Output Pkts Dropped attribute**Description**

The number of packets sent out of the interface configured over the shared ethernet adapter that are dropped because of an incorrect VLAN tag.

Type

String

Warehouse name

OUTPUT_PKTS_DROPPED or OPD

Output Pkts Failures attribute**Description**

The number of packets that cannot be sent because of underlying device errors. Includes errors sending on the physical network and virtual network including fragments and ICMP error packets generated by the shared ethernet adapter.

Type

String

Warehouse name

OUTPUT_PKTS_FAILURES or OPF

Mem Alloc Failures attribute**Description**

The number of packets that cannot be sent because of insufficient network memory to complete an operation.

Type

String

Warehouse name

MEM_ALLOC_FAILURES or MAF

ICMP Error Pkts Sent attribute**Description**

The number of ICMP error packets successfully sent when a big packet cannot be fragmented because the Don't Fragment bit was set.

Type

String

Warehouse name

ICMP_ERROR_PKTS_SENT or IEPS

Non IP Pkts Larger Than MTU attribute**Description**

The number of packets that cannot be sent because they were bigger than the Maximum Transmission Unit (MTU) for the outgoing adapter and cannot be fragmented because they were not IP packets.

Type

String

Warehouse name

NON_IP_PKTS_LARGER_THAN_MTU or NIPLTM

ThreadQ Overflow Pkts attribute**Description**

The number of packets that were dropped from the thread queues because there was no space to accomodate a newly-received packet.

Type

String

Warehouse name

THREADQ_OVERFLOW_PKTS or TOP

HA Keep Alive Pkts attribute**Description**

The number of high availability keepalive packets received on the control channel. Keepalive packets are received on the backup shared ethernet adapter while the primary SEA is active.

Type

String

Warehouse name

HA_KEEP_ALIVE_PKTS or HKAP

HA Recovery Pkts attribute**Description**

The number of high availability recovery packets received on the control channel. Recovery packets are sent by the primary shared ethernet adapter when it recovers from a failure and is ready to be active again.

Type

String

Warehouse name

HA_RECOVERY_PKTS or HRP

HA Notify Pkts attribute**Description**

The number of high availability notify packets received on the control channel. Notify packets are sent by the backup shared ethernet adapter when it detects that the primary SEA has recovered.

Type

String

Warehouse name

HA_NOTIFY_PKTS or HNP

HA Limbo Pkts attribute**Description**

The number of high availability limbo packets received on the control channel.

Type

String

Warehouse name

HA_LIMBO_PKTS or HLP

HA State attribute**Description**

The current high availability state of the shared ethernet adapter.

Type

String

Warehouse name

HA_STATE

HA Bridge Mode attribute**Description**

Describes to what level, if any, the shared ethernet adapter is currently bridging traffic.

Type

String

Warehouse name

HA_BRIDGE_MODE or HBM

Times Primary attribute**Description**

The number of times the shared ethernet adapter was idle and became active because the primary SEA had a failure.

Type

String

Warehouse name

TIMES_PRIMARY or TP

Times Backup attribute**Description**

The number of times the shared ethernet adapter was active and became idle because of a failure.

Type

String

Warehouse name

TIMES_BACKUP or TB

HA Mode attribute**Description**

The high availability mode of the shared ethernet adapter (Auto, Backup, or Disabled).

Type

String

Warehouse name

HA_MODE

Priority attribute**Description**

Trunk priority of the virtual ethernetets on the shared ethernet adapter. Used by the SEA protocol to determine which SEA acts as primary and which one acts as backup. Values are from 1 - 12, where a lower number is favored to act as a primary.

Type

String
Warehouse name
PRIORITY

Network Interfaces attribute group

This attribute group contains network interface 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 Network Interfaces attribute group:

Node attribute - This attribute is a key attribute.

Description
The managed system name of the agent.

Type
String

Warehouse name
NODE

Timestamp attribute

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

Type
String

Warehouse name
TIMESTAMP

Name attribute - This attribute is a key attribute.

Description
The name of the network interface.

Type
String

Warehouse name
NAME

State attribute

Description
The status of the network interface adapter.

Type
String

Warehouse name
STATE

IP Address attribute

Description

The IP or network address of the network interface.

Type

String

Warehouse name

IP_ADDRESS

MTU attribute**Description**

The maximum transmission unit size in bytes.

Type

String

Warehouse name

MTU

Mask attribute**Description**

The internet network mask.

Type

String

Warehouse name

MASK

Domain attribute**Description**

The internet domain name.

Type

String

Warehouse name

DOMAIN

Gateway attribute**Description**

The IP address of the gateway server.

Type

String

Warehouse name

GATEWAY

Nameserver attribute**Description**

The IP address of the domain name server.

Type

String

Warehouse name

NAMESERVER

Network Mappings attribute group

This attribute group contains VIOS Network device to VIOS client mapping 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 Network Mappings attribute group:

Node attribute - This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Warehouse name

NODE

Timestamp attribute

Description

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

Type

String

Warehouse name

TIMESTAMP

VLAN ID attribute - This attribute is a key attribute.

Description

The VLAN ID of the virtual ethernet adapter.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

VLAN_ID

Partition Name attribute

Description

The partition name of the partitions that are on the same VLAN ID from the HMC profile.

Type

String

Warehouse name

PARTITION_NAME or PN

Partition State attribute

Description

The activation state of the partition.

Type

String

Warehouse name

PARTITION_STATE or PS

Hostname attribute

Description

The host name for the partition.

Type

String

Warehouse name

HOSTNAME

IP Address attribute

Description

The IP address of the partition.

Type

String

Warehouse name

IP_ADDRESS

Partition ID attribute

Description

The partition ID of partitions that are on the same VLAN ID from the HMC profile.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PARTITION_ID or PI

VEA Slot attribute

Description

The virtual ethernet adapter slot from the HMC profile.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
VEA_SLOT

VEA MAC attribute - This attribute is a key attribute.

Description
The MAC address for the virtual ethernet adapter from the HMC profile.

Type
String

Warehouse name
VEA_MAC

VEA IP address attribute

Description
The virtual ethernet adapter IP address if configured.

Type
String

Warehouse name
VEA_IP_ADDRESS or VIA

Trunk attribute

Description
Indicates whether the virtual ethernet adapter is configured as a trunk adapter.

Type
String

Warehouse name
TRUNK

Shared Ethernet Adapter attribute

Description
The shared ethernet adapter name. For example, ent5 if the virtual ethernet adapter was used to create one.

Type
String

Warehouse name
SHARED_ETHERNET_ADAPTER or SEA

SEA IP Address attribute

Description

The IP address of the interface on the shared ethernet adapter if one was created.

Type

String

Warehouse name

SEA_IP_ADDRESS or SIA

SEA MAC attribute**Description**

The MAC address for the shared ethernet adapter.

Type

String

Warehouse name

SEA_MAC

Physical Ethernet Adapters attribute**Description**

The name of the physical ethernet or etherchannel adapter under a shared ethernet adapter.

Type

String

Warehouse name

PHYSICAL_ETHERNET_ADAPTERS or PEA

Virtual Ethernet Adapters attribute**Description**

The name of the virtual ethernet adapter.

Type

String

Warehouse name

VIRTUAL_ETHERNET_ADAPTERS or VEA

Failover attribute**Description**

Indicates whether the shared ethernet adapter has been set up for failover.

Type

String

Warehouse name

FAILOVER

Priority attribute**Description**

The priority of the trunk adapter used in failover. This value is for deciding which shared ethernet adapter is primary.

Type

String

Warehouse name
PRIORITY

Bridging attribute

Description
Indicates whether bridging is active or inactive.

Type
String

Warehouse name
BRIDGING

Control Channel attribute

Description
The VLAN ID of the control channel. This value is used for shared ethernet adapter failover.

Type
String

Warehouse name
CONTROL_CHANNEL or CC

Server Bytes Sent Per Sec attribute

Description
Bytes sent per second on the SEA.

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
SERVER_BYTES_SENT_PER_SEC or SBSPS

Server Bytes Received Per Sec attribute

Description
Bytes received per second on the SEA.

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

SERVER_BYTES_RECEIVED_PER_SEC or SBRPS

Server Packets Sent Per Sec attribute

Description

Packets sent per second on the SEA.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

SERVER_PACKETS_SENT_PER_SEC or SPSPS

Server Packets Received Per Sec attribute

Description

Packets received per second on the SEA.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

SERVER_PACKETS_RECEIVED_PER_SEC or SPRPS

Client Device Name attribute

Description

The client device name or names connected through this virtual device.

Type

String

Warehouse name

CLIENT_DEVICE_NAME or CDN

NIM Resources attribute group

This attribute group contains information on the NIM resources available.

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 NIM Resources attribute group:

Node attribute - This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Warehouse name

NODE

Timestamp attribute

Description

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

Type

String

Warehouse name

TIMESTAMP

Name attribute - This attribute is a key attribute.

Description

The name of the NIM objects as defined in the NIM Environment.

Type

String

Warehouse name

NAME

Type attribute

Description

The type of object for the specific NIM object.

Type

String

Warehouse name

TYPE

Class attribute

Description

The class type of the NIM object.

Type

String

Warehouse name

CLASS

State attribute

Description
The state of the NIM object.

Type
String

Warehouse name
STATE

Server attribute

Description
The NIM object name of the server for the NIM resource.

Type
String

Warehouse name
SERVER

Location attribute

Description
The path name of the NIM resource.

Type
String

Warehouse name
LOCATION

Information attribute

Description
The additional miscellaneous information about a NIM object.

Type
String

Warehouse name
INFORMATION or I

NPIV FCP attribute group

This attribute group contains information about NPIV Fibre Channel Ports.

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 NPIV FCP attribute group:

Node attribute - This attribute is a key attribute.

Description
The managed system name of the agent.

Type
String

Warehouse name
NODE

Timestamp attribute

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

Type
String

Warehouse name
TIMESTAMP

Physical Fibre Channel Port attribute - This attribute is a key attribute.

Description
The name of the physical Fibre Channel port on the VIOS.

Type
String

Warehouse name
PHYSICAL_FIBRE_CHANNEL_PORT or PFCP

Physical FCP Location Code attribute

Description
The physical location code for the Fibre Channel.

Type
String

Warehouse name
PHYSICAL_FCP_LOCATION_CODE or PFLC

Total Ports attribute

Description
The total number of ports for the Fibre Channel.

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

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

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

Warehouse name
TOTAL_PORTS or TP

Available Ports attribute

Description
The number of ports available to be mapped for the Fibre Channel.

Type

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

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

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

Warehouse name

AVAILABLE_PORTS or AP

NPIV Mappings attribute group

This attribute group contains information about NPIV Mappings.

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 NPIV Mappings attribute group:

Node attribute - This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Warehouse name

NODE

Timestamp attribute

Description

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

Type

String

Warehouse name

TIMESTAMP

Partition Name attribute

Description

The name of the VIOS partition.

Type

String

Warehouse name

PARTITION_NAME or PN

Partition ID attribute

Description

The partition ID of the VIOS Partition.

Type

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

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

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

Warehouse name

PARTITION_ID or PI

NPIV Server Adapter Name attribute - This attribute is a key attribute.**Description**

The name of the adapter that serves the FC to the client.

Type

String

Warehouse name

NPIV_SERVER_ADAPTER_NAME or NSAN

Server Physical Location Code attribute**Description**

The physical location code for the Server virtual adapter.

Type

String

Warehouse name

SERVER_PHYSICAL_LOCATION_CODE or SPLC

Client Partition Name attribute**Description**

The name of the client partition that connects to this FC port.

Type

String

Warehouse name

CLIENT_PARTITION_NAME or CPN

Client Partition ID attribute**Description**

The Partition ID of the client.

Type

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

- Value Exceeds Maximum (2147483647)

- Value Exceeds Minimum (-2147483648)

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

Warehouse name

CLIENT_PARTITION_ID or CPI

NPIV Client Adapter Name attribute

Description

The name of the adapter on the client that is connected to this mapping.

Type

String

Warehouse name

NPIV_CLIENT_ADAPTER_NAME or NCAN

Client Slot Number attribute

Description

The virtual I/O slot number of the client.

Type

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

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

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

Warehouse name

CLIENT_SLOT_NUMBER or CSN

Server Slot Number attribute

Description

The virtual I/O slot number of the server.

Type

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

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

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

Warehouse name

SERVER_SLOT_NUMBER or SSN

Client Partition OS attribute

Description

The operating system running on the client.

Type

String

Warehouse name

CLIENT_PARTITION_OS or CPO

Client Physical Location Code attribute**Description**

The physical location code for the Fibre Channel on the client.

Type

String

Warehouse name

CLIENT_PHYSICAL_LOCATION_CODE or CPLC

Physical Fibre Channel Port attribute**Description**

The name of the physical Fibre Channel port on the VIOS.

Type

String

Warehouse name

PHYSICAL_FIBRE_CHANNEL_PORT or PFCP

Physical FCP Location Code attribute**Description**

The physical location code for the Fibre Channel.

Type

String

Warehouse name

PHYSICAL_FCP_LOCATION_CODE or PFLC

Status attribute**Description**

The status of the client.

Type

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

- Not Collected (-1)
- Not Logged In (0)
- Logged In (1)

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

Warehouse name

STATUS

WWPN Primary attribute**Description**

The Primary Worldwide Port name used by the mapping.

Type

String

Warehouse name

WWPN_PRIMARY or WP

WWPN Secondary attribute**Description**

The Secondary Worldwide Port name used by the mapping.

Type

String

Warehouse name

WWPN_SECONDARY or WS

Paging Space attribute group

This attribute group contains paging space 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 Paging Space attribute group:

Node attribute - This attribute is a key attribute.**Description**

The managed system name of the agent.

Type

String

Warehouse name

NODE

Timestamp attribute**Description**

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

Type

String

Warehouse name

TIMESTAMP

Total Size MB attribute**Description**

The total size of the active paging space in MB.

Type

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

- Not Collected (-1)

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

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

Warehouse name

TOTAL_SIZE_MB or TSM

Free MB attribute

Description

The system paging space that is free in MB.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

FREE_MB

Used MB attribute

Description

The system paging space that is used in MB.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

USED_MB

Free Pct attribute

Description

The percentage of system paging space that is free.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
FREE_PCT

Used Pct attribute

Description
The percentage of system paging space that is used.

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
USED_PCT

Pages Read per Sec attribute

Description
The number of 4K pages per second read from paging space by the VMM.

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
PAGES_READ_PER_SEC or PRPS

Pages Written per Sec attribute

Description
The number of 4K pages per second written to paging space by the VMM.

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PAGES_WRITTEN_PER_SEC or PWPS

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.

Type

String

Warehouse name

NODE

Timestamp attribute

Description

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

Type

String

Warehouse name

TIMESTAMP

Query Name attribute - This attribute is a key attribute.

Description

The name of the attribute group.

Type

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 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 values will display the actual value 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 shown in parentheses. The following values are defined:

- ACTIVE (0)
- INACTIVE (1)

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

Warehouse name

OBJECT_STATUS or OBJSTTS

Error Code attribute

Description

The error code 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 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)

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

Warehouse name

ERROR_CODE or ERRCODE

Physical Memory attribute group

This attribute group contains information 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

Warehouse name

NODE

Timestamp attribute

Description

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

Type

String

Warehouse name

TIMESTAMP

Memory Size MB attribute

Description

The total amount of physical memory available to this system in MB.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

MEMORY_SIZE_MB or MSM

Free Memory MB attribute

Description

The amount of free (unallocated) system memory in MB.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)

- Value Exceeds Maximum (2147483647)

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

Warehouse name

FREE_MEMORY_MB or FMM

Used Memory MB attribute

Description

The amount of used (allocated) system memory in MB.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

USED_MEMORY_MB or UMM

Free Memory Pct attribute

Description

The percentage of system memory that is free (unallocated).

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

FREE_MEMORY_PCT or FMP

Used Memory Pct attribute

Description

The percentage of system memory that is used (allocated).

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

USED_MEMORY_PCT or UMP

Non Comp Memory attribute

Description

The number of non-computational 4K pages resident in memory.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

NON_COMP_MEMORY or NCM

Comp Memory attribute

Description

The number of computational 4K pages resident in memory.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

COMP_MEMORY or CM

Decay Rate attribute

Description

The decay rate for repaging values per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
DECAY_RATE

Repaging Rate attribute

Description
The global repaging rate per second.

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
REPAGING_RATE or RR

Physical Volumes attribute group

This attribute group contains physical volume 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 Physical Volumes attribute group:

Node attribute - This attribute is a key attribute.

Description
The managed system name of the agent.

Type
String

Warehouse name
NODE

Timestamp attribute

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

Type
String

Warehouse name
TIMESTAMP

Name attribute - This attribute is a key attribute.

Description
The name of the physical volume.

Type

String

Warehouse name

NAME

State attribute**Description**

The state of the physical volume.

Type

String

Warehouse name

STATE

Volume Group Name attribute**Description**

The name of the volume group.

Type

String

Warehouse name

VOLUME_GROUP_NAME or VGN

Number of Logical Volumes attribute**Description**

The number of logical volumes using the physical volume.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

NUMBER_OF_LOGICAL_VOLUMES or NOLV

Number of Stale Partitions attribute**Description**

The number of partitions not updated in a mirrored LVM environment.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

NUMBER_OF_STALE_PARTITIONS or NOSP

Size MB attribute

Description

The size of the physical volume in MB.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

SIZE_MB

Free MB attribute

Description

The amount of available space in the physical volume in MB.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

FREE_MB

Used MB attribute

Description

The amount of used space in the physical volume in MB.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
USED_MB

Free Pct attribute

Description
The percentage of space free in the physical volume.

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
FREE_PCT

Used Pct attribute

Description
The percentage of space used in the physical volume.

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
USED_PCT

Unique ID attribute

Description
The unique identifier for the disk (UDID).

Type
String

Warehouse name
UNIQUE_ID

Processes Detail attribute group

This attribute group contains detailed process 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 Processes Detail attribute group:

Node attribute - This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Warehouse name

NODE

Timestamp attribute

Description

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

Type

String

Warehouse name

TIMESTAMP

Process Name attribute

Description

Process Name.

Type

String

Warehouse name

PROCESS_NAME or PN

Process ID attribute - This attribute is a key attribute.

Description

The process ID.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PROCESS_ID

Parent Process ID attribute

Description

The parent process ID.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PARENT_PROCESS_ID or PPI

Nice attribute

Description

The process nice value.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

NICE

User Name attribute

Description

The user name.

Type

String

Warehouse name

USER_NAME

Repage Count per Sec attribute

Description

The process repage count per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

REPAGE_COUNT_PER_SEC or RCPS

IO Page Fault per Sec attribute**Description**

The process page faults involving IO per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

IO_PAGE_FAULT_PER_SEC or IPFPS

Non IO Page Fault per Sec attribute**Description**

The process page faults not involving IO per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

NON_IO_PAGE_FAULT_PER_SEC or NIPFPS

Text Size attribute**Description**

The code size in bytes.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

TEXT_SIZE

Resident Text Size attribute

Description

The amount of resident physical memory used by process code (4K pages).

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

RESIDENT_TEXT_SIZE or RTS

Resident Data Size attribute

Description

The amount of resident physical memory used by process private data (4K pages).

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

RESIDENT_DATA_SIZE or RDS

Page Space Used attribute

Description

The amount of page space used by process private data (4K pages).

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PAGE_SPACE_USED or PSU

Signals In per Sec attribute

Description

The number of signals received by the process per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

SIGNALS_IN_PER_SEC or SIPS

Voluntary Context Switches per Sec attribute**Description**

The number of voluntary context switches performed by the process per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

VOLUNTARY_CONTEXT_SWITCHES_PER_SEC or VCSPS

Process Group ID attribute**Description**

The process group ID.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PROCESS_GROUP_ID or PGI

Priority attribute**Description**

The process priority.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PRIORITY

State attribute**Description**

The process state: None, Created, Dying, Stopped, Active, Swapped.

Type

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

- None (0)
- Created (4)
- Dying (5)
- Stopped (6)
- Active (7)
- Swapped (8)

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

Warehouse name

STATE

Process UID attribute**Description**

The real user ID for the process.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PROCESS_UID or PU

Thread Count attribute

Description

The number of threads associated with this process.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

THREAD_COUNT or TC

Process Core Size attribute**Description**

The process core image size.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PROCESS_CORE_SIZE or PCS

Involuntary Context Switches Per Sec attribute**Description**

The involuntary context switches by process per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

INVOLUNTARY_CONTEXT_SWITCHES_PER_SEC or ICSPS

Total CPU Time attribute**Description**

The total CPU used by this process.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

TOTAL_CPU_TIME or TCT

CPU Pct attribute**Description**

The percentage of CPU used by this process.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

CPU_PCT

WPAR Name attribute**Description**

The name of the WPAR.

Type

String

Warehouse name

WPAR_NAME

WLM Name attribute**Description**

The WLM class name to which the process belongs.

Type

String

Warehouse name

WLM_NAME

Full Path attribute**Description**

The full path of a command with options.

Type

String
Warehouse name
FULL_PATH

Processes Summary attribute group

This attribute group contains system-wide process 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 Processes Summary attribute group:

Node attribute - This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Warehouse name

NODE

Timestamp attribute

Description

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

Type

String

Warehouse name

TIMESTAMP

Process Context Switches per Sec attribute

Description

The process context switches per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PROCESS_CONTEXT_SWITCHES_PER_SEC or PCSPS

Run Queue Avg attribute

Description

The average count of processes that are waiting for the CPU.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

RUN_QUEUE_AVG or RQA

Swap Queue Avg attribute**Description**

The average count of processes waiting to be paged in.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

SWAP_QUEUE_AVG or SQA

Kern Procs Created per Sec attribute**Description**

The number of kernel process creations per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

KERN_PROCS_CREATED_PER_SEC or KPCPS

Kern Procs Exit per Sec attribute**Description**

The number of kernel process exits per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

KERN_PROCS_EXIT_PER_SEC or KPEPS

Load Avg attribute**Description**

The partition load average.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

LOAD_AVG

Utilization Avg attribute**Description**

The partition utilization average.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

UTILIZATION_AVG or UA

Total Num Processes attribute**Description**

The number of processes.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

TOTAL_NUM_PROCESSES or TNP

Quality Of Service attribute group

This attribute group contains networking quality of service 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 Quality Of Service attribute group:

Node attribute - This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Warehouse name

NODE

Timestamp attribute

Description

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

Type

String

Warehouse name

TIMESTAMP

Policy Rule Priority attribute

Description

The Policy Rule Priority number.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

POLICY_RULE_PRIORITY or PRP

Protocol attribute - This attribute is a key attribute.

Description

The protocol to which this rule applies (TCP or UDP).

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)
- ICMP (1)
- IGMP (2)
- TCP (6)
- UDP (17)

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

Warehouse name

PROTOCOL

Source IP Addr start attribute - This attribute is a key attribute.

Description

The start of the Source IP Address range for this rule.

Type

String

Warehouse name

SOURCE_IP_ADDR_START or SIAS

Source IP Addr end attribute - This attribute is a key attribute.

Description

The end of the Source IP Address range for this rule.

Type

String

Warehouse name

SOURCE_IP_ADDR_END or SIAE

Dest IP Addr start attribute - This attribute is a key attribute.

Description

The start of the Destination IP Address range for this rule.

Type

String

Warehouse name

DEST_IP_ADDR_START or DIAS

Dest IP Addr end attribute - This attribute is a key attribute.

Description

The end of the Destination IP Address range for this rule.

Type

String

Warehouse name

DEST_IP_ADDR_END or DIAE

Source Port start attribute

Description

The start of the source port range for this rule.

Type

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

- ANY PORT (-2)
- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

SOURCE_PORT_START or SPS

Source Port end attribute

Description

The end of the source port range for this rule.

Type

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

- ANY PORT (-2)
- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

SOURCE_PORT_END or SPE

Dest Port start attribute

Description

The start of the destination port range for this rule

Type

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

- ANY PORT (-2)
- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

DEST_PORT_START or DPS

Dest Port end attribute

Description

The end of the destination port range for this rule.

Type

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

- ANY PORT (-2)
- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

DEST_PORT_END or DPE

Service Class attribute

Description

The service class (Integrated Services Controlled Load, Integrated Services Guaranteed Rate, or Differentiated Services).

Type

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

- Not Collected (-1)
- Integrated Services Controlled Load (5)
- Integrated Services Guaranteed Rate (2)
- Differentiated Services (1)

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

Warehouse name

SERVICE_CLASS or SC

Peak Rate attribute

Description

The highest allowed rate (bytes/second).

Type

String

Warehouse name
PEAK_RATE

Average Rate attribute

Description
The average allowed rate (bytes/second).

Type
String

Warehouse name
AVERAGE_RATE or AR

Bucket Depth attribute

Description
The bucket depth for the profile.

Type
String

Warehouse name
BUCKET_DEPTH or BD

Guaranteed Rate attribute

Description
The guaranteed rate for the policy (only applicable if Service_Class is 'Integrated Services Guaranteed Rate').

Type
String

Warehouse name
GUARANTEED_RATE or GR

Slack Term attribute

Description
The Slack_Term for the policy (only applicable if Service_Class is 'Integrated Services Guaranteed Rate').

Type
String

Warehouse name
SLACK_TERM

TOS In attribute

Description
The outgoing TOS (compliant) (Differentiated Services Only).

Type
String

Warehouse name
TOS_IN

TOS Out attribute

Description
The outgoing TOS (non-compliant) (Differentiated Services Only).

Type

String

Warehouse name

TOS_OUT

Max Packet Size attribute**Description**

Do not apply this rule to packets larger than this size.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

MAX_PACKET_SIZE or MPS

Min Packet Size attribute**Description**

Do not apply this rule to packets smaller than this size.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

MIN_PACKET_SIZE or MPS0

Num Connections attribute**Description**

The total number of connections for this profile.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
NUM_CONNECTIONS or NC

Bytes Xmitted attribute

Description
The total number of bytes transmitted.

Type
String

Warehouse name
BYTES_XMITTED or BX

Packets Xmitted attribute

Description
The total number of packets transmitted.

Type
String

Warehouse name
PACKETS_XMITTED or PX

In Profile Bytes Xmitted attribute

Description
The total number of in-profile bytes transmitted.

Type
String

Warehouse name
IN_PROFILE_BYTES_XMITTED or IPBX

In Profile Packets Xmitted attribute

Description
The total number of in-profile packets transmitted.

Type
String

Warehouse name
IN_PROFILE_PACKETS_XMITTED or IPPX

Security States attribute group

This attribute group contains general VIOS security 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 Security States attribute group:

Node attribute - This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Warehouse name

NODE

Timestamp attribute**Description**

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

Type

String

Warehouse name

TIMESTAMP

Security Level attribute**Description**

The security level settings.

Type

String

Warehouse name

SECURITY_LEVEL or SL

User Authentication attribute**Description**

The user authentication method.

Type

String

Warehouse name

USER_AUTHENTICATION or UA

Firewall attribute**Description**

Indicates firewall status: on or off.

Type

String

Warehouse name

FIREWALL

Shared Ethernet Adapter attribute group

This attribute group provides shared ethernet adapter 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 Shared Ethernet Adapter attribute group:

Node attribute - This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Warehouse name

NODE

Timestamp attribute

Description

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

Type

String

Warehouse name

TIMESTAMP

Device Name attribute - This attribute is a key attribute.

Description

The device name for the shared ethernet adapter

Type

String

Warehouse name

DEVICE_NAME or DN

MAC Address attribute - This attribute is a key attribute.

Description

The MAC address of the adapter.

Type

String

Warehouse name

MAC_ADDRESS or MA

VLAN attribute

Description

The Virtual LAN ID.

Type

String

Warehouse name

VLAN

VLAN Priority attribute

Description

the Virtual LAN priority if VLAN is configured.

Type	String
Warehouse name	VLAN_PRIORITY or VP
Hostname attribute	
Description	The host name that uses the adapter.
Type	String
Warehouse name	HOSTNAME
IP Address attribute	
Description	The IP address of the adapter.
Type	String
Warehouse name	IP_ADDRESS
Packets Sent attribute	
Description	The number of packets sent on the adapter.
Type	String
Warehouse name	PACKETS_SENT or PS
Bytes Sent attribute	
Description	The number of bytes sent on the adapter.
Type	String
Warehouse name	BYTES_SENT
Packets Received attribute	
Description	The number of packets received on the adapter.
Type	String
Warehouse name	PACKETS_RECEIVED or PR
Bytes Received attribute	

Description	The number of bytes received on the adapter.
Type	String
Warehouse name	BYTES_RECEIVED or BR

Storage Mappings attribute group

This attribute group contains the VIOS storage device to VIOS client mapping 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 Storage Mappings attribute group:

Node attribute - This attribute is a key attribute.

Description	The managed system name of the agent.
Type	String
Warehouse name	NODE

Timestamp attribute

Description	The local time at the agent when the data was collected.
Type	String
Warehouse name	TIMESTAMP

VIOS Name attribute

Description	The partition name of the VIOS from the HMC profile.
Type	String
Warehouse name	VIOS_NAME

Hostname attribute

Description	The VIOS host name.
Type	

String

Warehouse name

HOSTNAME

IP Address attribute

Description

The VIOS IP address.

Type

String

Warehouse name

IP_ADDRESS

Partition ID attribute

Description

The partition ID of the VIOS.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PARTITION_ID or PI

VSSA Slot attribute - This attribute is a key attribute.

Description

The Virtual SCSI Server Adapter slot number.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

VSSA_SLOT

VSSA Name attribute

Description

The Virtual SCSI Server Adapter name on the VIOS (for example, vhost0).

Type

String

Warehouse name
VSSA_NAME

VTD Name attribute

Description
The Virtual Target Device name.

Type
String

Warehouse name
VTD_NAME

VIOS Physical Adapter attribute

Description
The VIOS physical adapter that is being used to access disks.

Type
String

Warehouse name
VIOS_PHYSICAL_ADAPTER or VPA

Disk attribute

Description
The SCSI disk or SAN disk that is attached to the server physical adapter.

Type
String

Warehouse name
DISK

LV Name attribute

Description
The name of the Logical Volume that has been created on disk for assigning as a virtual disk to the client partition.

Type
String

Warehouse name
LV_NAME

LUN ID attribute - This attribute is a key attribute.

Description
The LUN ID of the virtual disk that is assigned to the client partition.

Type
String

Warehouse name
LUN_ID

Client Partition Name attribute

Description

The client partition name from the HMC profile.

Type

String

Warehouse name

CLIENT_PARTITION_NAME or CPN

Client Hostname attribute**Description**

The client partition host name.

Type

String

Warehouse name

CLIENT_HOSTNAME or CH

Client IP Address attribute**Description**

The client partition IP address.

Type

String

Warehouse name

CLIENT_IP_ADDRESS or CIA

Client Partition ID attribute**Description**

The client partition ID from the HMC profile.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

CLIENT_PARTITION_ID or CPI

Client Partition State attribute**Description**

The activation state of the client partition.

Type

String

Warehouse name

CLIENT_PARTITION_STATE or CPS

VSCA Slot attribute - This attribute is a key attribute.

Description

The Virtual SCSI Client Adapter slot number from the HMC profile.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

VSCA_SLOT

VTD Transfers per Sec attribute**Description**

The number of transfers per second that are issued to the Virtual Target Device. A transfer is of indeterminate size.

Type

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

- Not Collected (-10)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

VTD_TRANSFERS_PER_SEC or VTPS

VTD Reads per Sec attribute**Description**

The total number of reads per second from the Virtual Target Device.

Type

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

- Not Collected (-10)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

VTD_READS_PER_SEC or VRPS

VTD Writes per Sec attribute

Description

The total number of writes per second to the Virtual Target Device.

Type

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

- Not Collected (-10)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

VTD_WRITES_PER_SEC or VWPS

VTD Spans Multiple Disks attribute

Description

Value is true if the VTD is mapped to multiple Disks. Value is false if the logical volume associated with the VTD is mapped to one disk.

Type

String

Warehouse name

VTD_SPANS_MULTIPLE_DISKS or VSMD

Disk Transfers per Sec attribute

Description

The number of transfers per second that are issued to the disk. A transfer is of indeterminate size.

Type

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

- Not Collected (-10)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

DISK_TRANSFERS_PER_SEC or DTPS

Disk Reads per Sec attribute

Description

The total number of reads per second from the disk.

Type

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

- Not Collected (-10)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

DISK_READS_PER_SEC or DRPS

Disk Writes per Sec attribute

Description

The total number of writes per second to the disk.

Type

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

- Not Collected (-10)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

DISK_WRITES_PER_SEC or DWPS

Disk Transfers Sec Pct attribute

Description

The percentage of transfers per second contributed by the Virtual Target Device to the total amount of transfers per second issued to the disk.

Type

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

- Not Collected (-10)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

DISK_TRANSFERS_SEC_PCT or DTSP

Disk Reads per Sec Pct attribute

Description

The percentage of KBs read per second from the disk contributed by the Virtual Target Device.

Type

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

- Not Collected (-10)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

DISK_READS_PER_SEC_PCT or DRPSP

Disk Writes per Sec Pct attribute**Description**

The percentage of KBs written per second to the disk contributed by the Virtual Target Device.

Type

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

- Not Collected (-10)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

DISK_WRITES_PER_SEC_PCT or DWPSP

Client Device Name attribute**Description**

the client device name or names connected through this virtual device. This metric is unavailable for IVM systems.

Type

String

Warehouse name

CLIENT_DEVICE_NAME or CDN

System Call attribute group

This attribute group contains system call rate 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 System Call attribute group:

Node attribute - This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Warehouse name

NODE

Timestamp attribute

Description

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

Type

String

Warehouse name

TIMESTAMP

Num Syscalls per Sec attribute

Description

The total system calls per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

NUM_SYSCALLS_PER_SEC or NSPS

Reads per Sec attribute

Description

The read system calls per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

READS_PER_SEC or RPS

Writes per Sec attribute**Description**

The write system calls per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

WRITES_PER_SEC or WPS

Forks per Sec attribute**Description**

The fork system calls per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

FORKS_PER_SEC or FPS

Execs per Sec attribute**Description**

The exec system calls per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

EXECES_PER_SEC or EPS

System IO attribute group

This attribute group contains information related to System IO.

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 IO attribute group:

Node attribute - This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Warehouse name

NODE

Timestamp attribute

Description

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

Type

String

Warehouse name

TIMESTAMP

Syscall Read Chars per Sec attribute

Description

KBs read through the read sys call per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

SYSCALL_READ_CHARS_PER_SEC or SRCPS

Syscall Write Chars per Sec attribute

Description

The KBs written through the write sys call per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

SYSCALL_WRITE_CHARS_PER_SEC or SWCPS

Logical Blk Buffer Cache Reads per Sec attribute

Description

The logical reads from a block device through the buffer cache per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

LOGICAL_BLK_BUFFER_CACHE_READS_PER_SEC or LBBCRPS

Logical Blk Buffer Cache Writes per Sec attribute

Description

The logical writes to a block device through the buffer cache per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

LOGICAL_BLK_BUFFER_CACHE_WRITES_PER_SEC or LBBCWPS

Phys Blk Buffer Cache Reads per Sec attribute

Description

The physical 4K reads from a block device to the buffer cache per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PHYS_BLK_BUFFER_CACHE_READS_PER_SEC or PBBCRPS

Phys Blk Buffer Cache Writes per Sec attribute**Description**

The physical 4K writes to a block device from the buffer cache per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PHYS_BLK_BUFFER_CACHE_WRITES_PER_SEC or PBBCWPS

Phys Raw Reads per Sec attribute**Description**

The physical reads directly from a raw device per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PHYS_RAW_READS_PER_SEC or PRRPS

Phys Raw Writes per Sec attribute**Description**

The physical writes directly to a raw device per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PHYS_RAW_WRITES_PER_SEC or PRWPS

TADDM attribute group

This attribute group contains the CEC Identification information needed by the TADDM 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 TADDM attribute group:

Node attribute - This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Warehouse name

NODE

Timestamp attribute

Description

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

Type

String

Warehouse name

TIMESTAMP

CEC Mfg attribute

Description

The name of the CEC manufacturer (IBM).

Type

String

Warehouse name

CEC_MFG

CEC Model attribute

Description

The CEC system model number.

Type

String

Warehouse name

CEC_MODEL

CEC SN attribute**Description**

The CEC system serial number.

Type

String

Warehouse name

CEC_SN

LPAR Num attribute**Description**

The LPAR identification number.

Type

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

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

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

Warehouse name

LPAR_NUM

TCP attribute group

This attribute group contains system-wide TCP networking 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 TCP attribute group:

Node attribute - This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Warehouse name
NODE

Timestamp attribute

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

Type
String

Warehouse name
TIMESTAMP

Connections Initiated per Sec attribute

Description
The TCP connections initiated per second.

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
CONNECTIONS_INITIATED_PER_SEC or CIPS

Connections Established per Sec attribute

Description
The TCP connections established per second.

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
CONNECTIONS_ESTABLISHED_PER_SEC or CEPS

Connections Closed per Sec attribute

Description
The TCP connections closed per second.

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

CONNECTIONS_CLOSED_PER_SEC or CCPS

Total Packets Sent per Sec attribute

Description

The TCP packets sent per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

TOTAL_PACKETS_SENT_PER_SEC or TPSPS

Data Packets Sent per Sec attribute

Description

The TCP data packets sent per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

DATA_PACKETS_SENT_PER_SEC or DPSPS

Data Sent KB per Sec attribute

Description

The TCP data KBs sent per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)

- Value Exceeds Maximum (2147483647)

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

Warehouse name

DATA_SENT_KB_PER_SEC or DSKPS

Data Pkt Retransmitted per Sec attribute

Description

The TCP data packets retransmitted per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

DATA_PKT_RETRANSMITTED_PER_SEC or DPRPS

Ack Only Pkt Sent per Sec attribute

Description

The TCP ack-only packets sent per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

ACK_ONLY_PKT_SENT_PER_SEC or AOPSPS

Total Packets Received per Sec attribute

Description

The TCP total packets received per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

TOTAL_PACKETS_RECEIVED_PER_SEC or TPRPS

Ack Pkt Received per Sec attribute

Description

The TCP ack packets received per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

ACK_PKT_RECEIVED_PER_SEC or APRPS

Top 50 CPU Processes attribute group

This attribute group contains the processes that are the top 50 CPU users.

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 Top 50 CPU Processes attribute group:

Node attribute - This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Warehouse name

NODE

Timestamp attribute

Description

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

Type

String

Warehouse name

TIMESTAMP

Name attribute

Description

The process name.

Type

String

Warehouse name

NAME

ID attribute - This attribute is a key attribute.

Description

The process identification number.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

ID

CPU Pct attribute

Description

The percentage of CPU utilized by the process.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

CPU_PCT

Memory KB attribute

Description

The amount of memory utilized by the process in KB.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
MEMORY_KB

Owner attribute

Description
The system user name that owns the process.

Type
String

Warehouse name
OWNER

Full Path attribute

Description
The full path of a command with options.

Type
String

Warehouse name
FULL_PATH

Top 50 Memory Processes attribute group

This attribute group contains the processes that are the top 50 memory users.

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 Top 50 Memory Processes attribute group:

Node attribute - This attribute is a key attribute.

Description
The managed system name of the agent.

Type
String

Warehouse name
NODE

Timestamp attribute

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

Type
String

Warehouse name
TIMESTAMP

Name attribute**Description**

The process name.

Type

String

Warehouse name

NAME

ID attribute - This attribute is a key attribute.**Description**

The process identification number.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

ID

CPU Pct attribute**Description**

The percentage of CPU utilized by the process.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

CPU_PCT

Memory KB attribute**Description**

The amount of memory utilized by the process in KB.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)

- Value Exceeds Maximum (2147483647)

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

Warehouse name
MEMORY_KB

Owner attribute

Description
The system user name that owns the process.

Type
String

Warehouse name
OWNER

Full Path attribute

Description
The full path of a command with options.

Type
String

Warehouse name
FULL_PATH

Virtual Memory Management attribute group

This attribute group contains information about virtual memory management 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 Virtual Memory Management attribute group:

Node attribute - This attribute is a key attribute.

Description
The managed system name of the agent.

Type
String

Warehouse name
NODE

Timestamp attribute

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

Type
String

Warehouse name
TIMESTAMP

Pages Read per Sec attribute

Description
The number of 4K pages read by VMM per second.

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
PAGES_READ_PER_SEC or PRPS

Pages Written per Sec attribute

Description
The number of 4K pages written by VMM per second.

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
PAGES_WRITTEN_PER_SEC or PWPS

Paging Space Read per Sec attribute

Description
The number of 4K pages read from paging space by VMM per second.

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
PAGING_SPACE_READ_PER_SEC or PSRPS

Paging Space Written per Sec attribute

Description

The number of 4K pages written to paging space by VMM per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PAGING_SPACE_WRITTEN_PER_SEC or PSWPS

Zero Fill per Sec attribute

Description

The page faults satisfied by zero-filling memory frames per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

ZERO_FILL_PER_SEC or ZFPS

Pagein Wait per Sec attribute

Description

The process waits because of page-ins per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PAGEIN_WAIT_PER_SEC or PWPS0

Page Fault per Sec attribute

Description

The total page faults per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PAGE_FAULT_PER_SEC or PFPS

Page Reclaim per Sec attribute**Description**

The page faults satisfied by page reclaims per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PAGE_RECLAIM_PER_SEC or PRPS0

Steals per Sec attribute**Description**

The physical memory 4K frames stolen by VMM per second.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

STEALS_PER_SEC or SPS

Memory Not Pinned attribute**Description**

The number of 4K memory pages that are not pinned.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

MEMORY_NOT_PINNED or MNP

Comp Repage Pct attribute**Description**

The percentage of repage requests coming from computational segments.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

COMP_REPAGE_PCT or CRP

Noncomp Repage Pct attribute**Description**

The percentage of repage requests coming from non-computational segments.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

NONCOMP_REPAGE_PCT or NRP

Pending Client Pageout attribute**Description**

Total number of client (remote file) page replacement page-outs pending.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

PENDING_CLIENT_PAGEOUT or PCP

Volume Groups attribute group

This attribute group contains volume group 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 Volume Groups attribute group:

Node attribute - This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Warehouse name

NODE

Timestamp attribute**Description**

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

Type

String

Warehouse name

TIMESTAMP

Name attribute - This attribute is a key attribute.

Description

The name of the volume group.

Type

String

Warehouse name

NAME

State attribute

Description

The state of the volume group.

Type

String

Warehouse name

STATE

Number of Logical Volumes attribute**Description**

The number of logical volumes currently in the volume group.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

NUMBER_OF_LOGICAL_VOLUMES or NOLV

Number of Physical Volumes attribute**Description**

The total number of physical volumes within the volume group.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

NUMBER_OF_PHYSICAL_VOLUMES or NOPV

Number of Active Physical Volumes attribute**Description**

The number of physical volumes that are currently active.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

NUMBER_OF_ACTIVE_PHYSICAL_VOLUMES or NOAPV

Number of Stale Physical Volumes attribute

Description

The number of physical volumes that are not current.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

NUMBER_OF_STALE_PHYSICAL_VOLUMES or NOSPV

Size MB attribute

Description

The size of the volume group in MB.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name

SIZE_MB

Free MB attribute

Description

The amount of available space in the volume group in MB.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
FREE_MB

Used MB attribute

Description
The amount of used space in the volume group in MB.

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
USED_MB

Free Pct attribute

Description
The percentage of space free in the volume group.

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
FREE_PCT

Used Pct attribute

Description
The percentage of space used in the volume group.

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
USED_PCT

Workload Manager attribute group

This attribute group contains workload manager (WLM) class 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 Workload Manager attribute group:

Node attribute - This attribute is a key attribute.

Description

The managed system name of the agent.

Type

String

Warehouse name

NODE

Timestamp attribute

Description

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

Type

String

Warehouse name

TIMESTAMP

Class Name attribute - This attribute is a key attribute.

Description

The name of the WLM class. A class is a collection of processes (jobs) with a single set of resource limits applied to it.

Type

String

Warehouse name

CLASS_NAME

Tier Num attribute

Description

The tier number (0 - 9) to which the WLM class belongs. This number defines the relative priority of a class (0 is high, 9 is low).

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
TIER_NUM

CPU Consumed Pct attribute

Description

The percentage of the total CPU consumed within an interval by all threads in the class (total CPU for class/total CPU available).

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
CPU_CONSUMED_PCT or CCP

CPU Desired Pct attribute

Description

The desired percentage of CPU resources to allocate to the class.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

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

Warehouse name
CPU_DESIRED_PCT or CDP

CPU total attribute

Description

The sum of all CPU cycles consumed by all threads in the class.

Type

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

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
CPU_TOTAL

CPU shares attribute

Description

The number of CPU shares to be allocated to the class (1 - 65535).

Type

Integer (gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
CPU_SHARES

CPU min attribute

Description

The minimum percentage of CPU that must be made available when requested.

Type

Integer (gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
CPU_MIN

CPU Soft Max attribute

Description

The maximum percentage of CPU that can be made available to the class when there is CPU contention.

Type

Integer (gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
CPU_SOFT_MAX or CSM

CPU Hard Max attribute

Description
The maximum percentage of CPU that can be available to the class when there is no CPU contention.

Type
Integer (gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
CPU_HARD_MAX or CHM

Mem Consumed Pct attribute

Description
The percentage of total memory consumed within an interval by all threads in the class.

Type
Integer (gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
MEM_CONSUMED_PCT or MCP

Mem Desired Pct attribute

Description
The desired percentage of memory resources to allocate to the class.

Type
Integer (gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

MEM_DESIRED_PCT or MDP

Mem total attribute**Description**

The sum of all memory consumed by all threads in the class.

Type

Integer (gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

MEM_TOTAL

Mem shares attribute**Description**

The number of memory shares to be allocated to the class (1 - 65535).

Type

Integer (gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

MEM_SHARES

Mem min attribute**Description**

The minimum percentage of memory that must be made available when requested.

Type

Integer (gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
MEM_MIN

Mem Soft Max attribute

Description

The maximum percentage of memory that can be made available to the class when there is memory contention.

Type

Integer (gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
MEM_SOFT_MAX or MSM

Mem Hard Max attribute

Description

The maximum percentage of memory that can be available to the class when there is no memory contention.

Type

Integer (gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name
MEM_HARD_MAX or MHM

Disk Consumed Pct attribute

Description

The percentage of total disk resources consumed within an interval by all threads in the class.

Type

Integer (gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

DISK_CONSUMED_PCT or DCP

Disk Desired Pct attribute**Description**

The desired percentage of disk resources to allocate to the class.

Type

Integer (gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

DISK_DESIRED_PCT or DDP

Disk total attribute**Description**

The sum of all disk resources consumed by all threads in the class.

Type

Integer (gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

DISK_TOTAL

Disk shares attribute**Description**

The number of disk shares to be allocated to the class (1 - 65535).

Type

Integer (gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

DISK_SHARES or DS

Disk min attribute

Description

The minimum percentage of disk resource that must be made available when requested.

Type

Integer (gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

DISK_MIN

Disk Soft Max attribute

Description

The maximum percentage of disk resource that can be made available to the class when there is disk contention.

Type

Integer (gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

DISK_SOFT_MAX or DSM

Disk Hard Max attribute

Description

The maximum percentage of disk resource that can be made available to the class when there is no disk contention.

Type

Integer (gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- Not Collected (-1)
- Value Exceeds Minimum (-2147483648)
- Value Exceeds Maximum (2147483647)

Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Warehouse name

DISK_HARD_MAX or DHM

Disk capacity planning for historical data

Disk capacity planning for a monitoring agent is a prediction of the amount of disk space to be consumed for each attribute group with historical data that is being collected. Required disk storage is an important factor when you are defining data collection rules and your strategy for historical data collection.

The table in this chapter provides the following information required to calculate disk space for this monitoring agent:

- *Table* is the 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 and attributes for the VIOS Premium agent” on page 23
- *Attribute group* is the name of the attribute group used to create the table in the warehouse database if it is short enough to fit in the table naming constraints of the database being used for the warehouse. The attribute group name listed here corresponds to the Warehouse table name in “Attribute groups and attributes for the VIOS Premium agent” on page 23.
- *Bytes per row (agent)* is an estimate of the record length for each row or instance written to the agent disk for historical data collection. This estimate can be used for agent disk space planning purposes.
- *Database bytes per row (warehouse)* is an estimate of the record length for detailed records written to the warehouse database, if the attribute group is configured to be written to the warehouse. Detailed records are records that have been uploaded from the agent for long-term historical data collection. This estimate can be used for warehouse disk space planning purposes.
- *Aggregate bytes per row (warehouse)* is an estimate of the record length for aggregate records written to the warehouse database, if the attribute group is configured to be written to the warehouse. Aggregate records are created by the Summarization agent for attribute groups that have been configured for summarization. This estimate can be used for warehouse disk space planning purposes.

In addition to the information in the tables, you must know the number of rows of data that you plan to collect. An attribute group can have single or multiple rows of data depending on the application environment that is being monitored. For example, if your attribute group is monitoring each processor in your computer and you have a dual processor computer, the number of rows is two.

The following table contains capacity planning information for the data logged by IBM Tivoli Monitoring for Virtual Servers Agent for VMware VI.

Table 1. Capacity planning for historical data logged by the VIOS Premium agent

Table	Attribute group	Bytes per row (agent)	Database bytes per row (warehouse)	Aggregate bytes per row (warehouse)
KVA50ACTIV	KVA_ACTIVE_USERS	1708	1720	1757
KVA53MPOOL	KVA_AMS_POOL	112	177	547
KVA08CAPAB	KVA_CAPABILITIES	268	266	303
KVA17CPUDE	KVA_CPU_DETAIL	248	288	1546
KVA16CPUSU	KVA_CPU_SUMMARY	268	469	1622
KVA49DEFIN	KVA_DEFINED_USERS	1664	1673	1749

Table 1. Capacity planning for historical data logged by the VIOS Premium agent (continued)

Table	Attribute group	Bytes per row (agent)	Database bytes per row (warehouse)	Aggregate bytes per row (warehouse)
KVA51DEVIC	KVA_DEVICES	556	557	594
KVA34DISKS	KVA_DISKS	460	615	1720
KVAFC_STAT	KVA_FC_STATS	364	459	1568
KVA38FILES	KVA_FILE_SYSTEMS	1056	1064	1296
KVA06FIREW	KVA_FIREWALL	400	402	439
KVA44INTER	KVA_INTERNET_PROTOCOL_DETAIL	208	214	602
KVA43INTER	KVA_INTERNET_PROTOCOL_SUMMARY	104	107	417
KVA22LOGIC	KVA_LOGICAL_PARTITION	1104	1251	3061
KVA37LOGIC	KVA_LOGICAL_VOLUMES	1232	1238	1314
KVA52MPIOA	KVA_MPIO_ATTRIBUTES	556	557	594
KVA51MPIOA	KVA_MPIO_STATUS	556	557	594
KVA42NETWO	KVA_NETWORK_ADAPTERS_RATES	1024	1085	2889
KVA41NETWO	KVA_NETWORK_ADAPTERS_TOTALS	4036	4086	4123
KVA40NETWO	KVA_NETWORK_INTERFACES	1555	1563	1600
KVA03NETWO	KVA_NETWORK_MAPPINGS	2316	2340	2611
KVA24NIMRE	KVA_NIM_RESOURCES	2284	2295	2332
KVA56NPIVF	KVA_NPIV_FCP	180	180	295
KVA55NPIVM	KVA_NPIV_MAPPINGS	672	684	916
KVA21PAGIN	KVA_PAGING_SPACE	104	107	417
KVAPOBJST	KVA_PERFORMANCE_OBJECT_STATUS	288	289	326
KVA27PHYSI	KVA_PHYSICAL_MEMORY	112	117	505
KVA35PHYSI	KVA_PHYSICAL_VOLUMES	424	431	741
KVA32PROCE	KVA_PROCESSES_DETAIL	2760	2790	3568
KVA31PROCE	KVA_PROCESSES_SUMMARY	108	112	461
KVA54QOS	KVA_QUALITY_OF_SERVICE	836	857	1206
KVA05SECUR	KVA_SECURITY_STATES	316	315	352
KVA53SEA	KVA_SHARED_ETHERNET_ADAPTER	636	642	679
KVA02STORA	KVA_STORAGE_MAPPINGS	2964	3104	3678
KVA20SYSTE	KVA_SYSTEM_CALL	96	97	329
KVA19SYSTE	KVA_SYSTEM_IO	108	112	461
KVA56TADDM	KVA_TADDM	180	180	256
KVA45TCP	KVA_TCP	116	122	549
KVA10TOP50	KVA_TOP_50_CPU_PROCESSES	2488	2498	2613
KVA11TOP50	KVA_TOP_50_MEMORY_PROCESSES	2488	2498	2613
KVA28VIRTU	KVA_VIRTUAL_MEMORY_MANAGEMENT	128	137	681
KVA36VOLUM	KVA_VOLUME_GROUPS	304	311	699
KVA23WORKL	KVA_WORKLOAD_MANAGER	932	955	1850

For more information about historical data collection, see the *IBM Tivoli Monitoring Administrator's Guide*.

Chapter 5. Situations reference

This chapter contains an overview of situations, references for detailed information about situations, and descriptions of the predefined situations included in this monitoring agent.

About situations

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 enterprise situations from the Tivoli Enterprise Portal by using the Situation Editor or from the command-line interface using the `tacmds` for situations. You can manage private situations in the private configuration XML file.

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 VIOS Premium agent. You can change the conditions or values being monitored by a predefined situation to the conditions or values best suited to your enterprise.

You can display predefined situations and create your own situations using the Situation Editor. The left frame of the Situation editor initially lists the situations associated with the Navigator item that you selected. When you click a situation name or create a situation, the right frame opens with the following tabs:

Formula

Formula describing condition being tested.

Distribution

List of managed systems (operating systems, subsystems, or applications) to which the situation can be distributed. All the VIOS Premium agent managed systems are assigned by default.

Expert advice

Comments and instructions to be read in the event workspace.

Action

Command to be sent to the system.

EIF

Customize forwarding of the event to an Event Integration Facility receiver. (Available when the Tivoli Enterprise Monitoring Server has been configured to forward events.)

Until

Options to close the event after a period of time, or when another situation becomes true.

More 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 for this monitoring agent and a description of each situation, see the Predefined situations section in this chapter and the information in that section for each individual situation.

Predefined situations

This monitoring agent contains the following predefined situations, which are organized by Navigator item.

- VIOS Premium
 - Not applicable
- Memory
 - KVA_memrepage_Info
 - KVA_vmm_pginwait_Info
 - KVA_vmm_pgfault_Info
 - KVA_vmm_pgreclm_Info
 - KVA_vmm_unpin_low_Warn
 - KVA_vmm_pgout_pend_Info
- Networking
 - KVA_Pkts_Sent_Errors_Info
 - KVA_Sent_Pkts_Dropped_Info
 - KVA_Pkts_Recv_Errors_Info
 - KVA_Bad_Pkts_Recv_Info
 - KVA_Recv_pkts_dropped_Info
 - KVA_Qoverflow_Info
 - KVA_Real_Pkts_Dropped_Info
 - KVA_Virtual_Pkts_Dropped_Info
 - KVA_Output_Pkts_Dropped_Info
 - KVA_Output_Pkts_Failures_Info
 - KVA_Mem_Alloc_Failures_Warn
 - KVA_ThreadQ_Overflow_Pkts_Info
 - KVA_HA_State_Info
 - KVA_Times_Primary_Per_Sec_Info
 - KVA_Qoverflow_Info
 - KVA_Netwk_Bandwidth_High_Info
 - KVA_Media_Spd_Half_Duplex_Warn
 - KVA_perip_InputErrs_Info
 - KVA_perip_InputPkts_Drop_Info
 - KVA_perip_OutputErrs_Info
 - KVA_TCP_ConnInit_Info
 - KVA_TCP_ConnEst_Info
- Process
 - KVA_totproc_cs_Info
 - KVA_totproc_runq_avg_Info
 - KVA_totproc_load_avg_Info
 - KVA_totnum_procs_Info
 - KVA_perproc_IO_pgf_Info

- KVA_perproc_nonIO_pgf_Info
- KVA_perproc_memres_datasz_Info
- KVA_perproc_memres_textsz_Info
- KVA_perproc_mem_textsz_Info
- KVA_perproc_vol_cs_Info
- Security
 - KVA_Firewall_Info
- Status
 - KVA_Device_Stopped_Warn
- Storage
 - KVA_Active_Disk_Pct_Info
 - KVA_Avg_Read_Transfer_MS_Info
 - KVA_Read_Timeouts_Per_Sec_Info
 - KVA_Failed_Read_Per_Sec_Info
 - KVA_Avg_Write_Transfer_MS_Info
 - KVA_Write_Timeout_Per_Sec_Info
 - KVA_Failed_Writes_Per_Sec_Info
 - KVA_Avg_Req_In_WaitQ_MS_Info
 - KVA_ServiceQ_Full_Per_Sec_Info
- System
 - KVA_PHY_Pct_High_Info
 - KVA_Reduced_Proc_Freq_Info
 - KVA_perCPU_syscalls_Info
 - KVA_perCPU_forks_Info
 - KVA_perCPU_execs_Info
 - KVA_perCPU_cs_Info
 - KVA_Tot_syscalls_Info
 - KVA_Tot_forks_Info
 - KVA_Tot_execs_Info
 - KVA_LPARBusy_pct_Warn
 - KVA_LPARPhyBusy_pct_Warn
 - KVA_LPARvcs_Info
 - KVA_LPARfreepool_Warn
 - KVA_LPARPhanIntrs_Info
 - KVA_LPARentused_Info
 - KVA_LPARphyp_used_Info
 - KVA_LPAR_MaxCPUCapUsed_Info
- Top Resources
 - Not applicable
- User
 - KVA_user_acct_locked_Info
 - KVA_user_login_retries_Info
 - KVA_user_idletime_Info
- Virtual IO Mappings
 - KVA_VTD_Maps_Multi_Disks_Warn

- KVA_NPIV_Status_Warn
- KVA_NPIV_Avail_Ports_Low_Info

The remaining sections of this chapter contain descriptions of each of these situations. The situations are organized by Navigator item. The following information is provided about each situation:

Description

Information about the conditions that the situation tests.

Formula

Syntax that contains one or more logical expressions describing 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 elapses 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 of time, when another situation is true, or whichever occurs first if both are selected.

VIOS Premium Navigator item

No predefined situations are included for this Navigator item.

Memory Navigator item

KVA_memrepage_Info situation

Description

Physical Memory Repaging rate is high.

The situation will be evaluated for the table.

Formula

*IF *VALUE KVA_PHYSICAL_MEMORY.Repaging_Rate *GT 10

See "Attribute groups and attributes for the VIOS Premium agent" on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_vmm_pginwait_Info situation**Description**

Virtual Memory Manager Page-In wait is higher than expected.

The situation will be evaluated for the table.

Formula

*IF *VALUE KVA_VIRTUAL_MEMORY_MANAGEMENT.Pagein_Wait_per_Sec *GT 1000

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_vmm_pgfault_Info situation**Description**

Virtual Memory Manager Page fault rate is higher than expected.

The situation will be evaluated for the table.

Formula

*IF *VALUE KVA_VIRTUAL_MEMORY_MANAGEMENT.Page_Fault_per_Sec *GT 1000

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_vmm_pgrecIm_Info situation**Description**

Virtual Memory Manager Page Reclaim is higher than expected.

The situation will be evaluated for the table.

Formula

*IF *VALUE KVA_VIRTUAL_MEMORY_MANAGEMENT.Page_Reclaim_per_Sec *GT 1000

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_vmm_unpin_low_Warn situation

Description

Amount of pinned memory is higher than expected.

The situation will be evaluated for the table.

Formula

*IF *VALUE KVA_VIRTUAL_MEMORY_MANAGEMENT.Memory_Not_Pinned *LT 100

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Warning

Clearing conditions

The situation clears when the condition becomes false.

KVA_vmm_pgout_pend_Info situation

Description

Virtual Memory Manager page-outs pending higher than expected.

The situation will be evaluated for the table.

Formula

*IF *VALUE KVA_VIRTUAL_MEMORY_MANAGEMENT.Pending_Client_Pageout *GT 100

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

Networking Navigator item**KVA_Pkts_Sent_Errors_Info situation****Description**

The packets sent error rate is higher than normal.

The situation is evaluated for each distinct value of the NAME attribute.

Formula

*IF *VALUE KVA_NETWORK_ADAPTERS_RATES.Pkts_Sent_Errors_per_Sec *GT 10

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_Sent_Pkts_Dropped_Info situation**Description**

The rate of dropped packets is higher than normal.

The situation is evaluated for each distinct value of the NAME attribute.

Formula

*IF *VALUE KVA_NETWORK_ADAPTERS_RATES.Sent_Pkts_Dropped_per_Sec *GT 10

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_Pkts_Recv_Errors_Info situation**Description**

The packets received error rate is higher than normal.

The situation is evaluated for each distinct value of the NAME attribute.

Formula

*IF *VALUE KVA_NETWORK_ADAPTERS_RATES.Pkts_Recv_Errors_per_Sec *GT 10

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_Bad_Pkts_Recvd_Info situation

Description

Rate at which bad packets are received is higher than normal.

The situation is evaluated for each distinct value of the NAME attribute.

Formula

*IF *VALUE KVA_NETWORK_ADAPTERS_RATES.Bad_Pkts_Recvd_per_Sec *GT 10

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_Recv_pkts_dropped_Info situation

Description

The rate received packets are dropped is higher than normal.

The situation is evaluated for each distinct value of the NAME attribute.

Formula

*IF *VALUE KVA_NETWORK_ADAPTERS_RATES.Recv_Pkts_Dropped_per_Sec *GT 10

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_Qoverflow_Info situation**Description**

The transmit queue overflow rate is higher than normal.

The situation is evaluated for each distinct value of the NAME attribute.

Formula

*IF *VALUE KVA_NETWORK_ADAPTERS_RATES.Qoverflow_per_Sec *GT 10

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_Real_Pkts_Dropped_Info situation**Description**

A shared ethernet adapter is dropping too many packets.

The situation is evaluated for each distinct value of the NAME attribute.

Formula

*IF *VALUE KVA_NETWORK_ADAPTERS_RATES.Real_Pkts_Dropped_per_Sec *GT 100
*AND *SCAN KVA_NETWORK_ADAPTERS_RATES.Type *EQ 'Shared Ethernet Adapter'

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_Virtual_Pkts_Dropped_Info situation**Description**

The virtual ethernet adapter is dropping too many packets.

The situation is evaluated for each distinct value of the NAME attribute.

Formula

```
*IF *VALUE KVA_NETWORK_ADAPTERS_RATES.Virtual_Pkts_Dropped_per_Sec *GT 100  
*AND *SCAN KVA_NETWORK_ADAPTERS_RATES.Type *EQ 'Shared Ethernet Adapter'
```

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_Output_Pkts_Dropped_Info situation

Description

Shared ethernet adapter drops packets because of bad VLAN tags.

The situation is evaluated for each distinct value of the NAME attribute.

Formula

```
*IF *VALUE KVA_NETWORK_ADAPTERS_RATES.Output_Pkts_Dropped_per_Sec *GT 100  
*AND *SCAN KVA_NETWORK_ADAPTERS_RATES.Type *EQ 'Shared Ethernet Adapter'
```

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_Output_Pkts_Failures_Info situation

Description

Packets are being dropped because of underlying device errors.

The situation is evaluated for each distinct value of the NAME attribute.

Formula

```
*IF *VALUE KVA_NETWORK_ADAPTERS_RATES.Output_Pkts_Failures_per_Sec *GT 100  
*AND *SCAN KVA_NETWORK_ADAPTERS_RATES.Type *EQ 'Shared Ethernet Adapter'
```

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_Mem_Alloc_Failures_Warn situation**Description**

Memory allocation failure caused by insufficient network memory.

The situation is evaluated for each distinct value of the NAME attribute.

Formula

```
*IF *VALUE KVA_NETWORK_ADAPTERS_RATES.Mem_Alloc_Failures_per_Sec *GT 10  
*AND *SCAN KVA_NETWORK_ADAPTERS_RATES.Type *EQ 'Shared Ethernet Adapter'
```

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Warning

Clearing conditions

The situation clears when the condition becomes false.

KVA_ThreadQ_Overflow_Pkts_Info situation**Description**

The rate packets are dropped from the thread queues is too high.

The situation is evaluated for each distinct value of the NAME attribute.

Formula

```
*IF *VALUE KVA_NETWORK_ADAPTERS_RATES.ThreadQ_Overflow_Pkts_per_Sec *GT 20  
*AND *SCAN KVA_NETWORK_ADAPTERS_RATES.Type *EQ 'Shared Ethernet Adapter'
```

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_HA_State_Info situation**Description**

The shared ethernet adapter entered LIMBO state.

The situation is evaluated for each distinct value of the NAME attribute.

Formula

```
*IF *SCAN KVA_NETWORK_ADAPTERS_RATES.HA_State *EQ 'LIMBO' *AND *SCAN  
KVA_NETWORK_ADAPTERS_RATES.Type *EQ 'Shared Ethernet Adapter'
```

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_Times_Primary_Per_Sec_Info situation

Description

The rate the SEA was active and became idle is too high.

The situation is evaluated for each distinct value of the NAME attribute.

Formula

```
*IF *VALUE KVA_NETWORK_ADAPTERS_RATES.Times_Primary_per_Sec *GT 5 *AND  
*SCAN KVA_NETWORK_ADAPTERS_RATES.Type *EQ 'Shared Ethernet Adapter'
```

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_Qoverflow_Info situation

Description

The transmit queue overflow rate is higher than normal.

The situation is evaluated for each distinct value of the NAME attribute.

Formula

```
*IF *VALUE KVA_NETWORK_ADAPTERS_RATES.Qoverflow_per_Sec *GT 10
```

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_Netwk_Bandwidth_High_Info situation**Description**

Bandwidth utilization for the interface is higher than expected.

The situation is evaluated for each distinct value of the NAME attribute.

Formula

*IF *VALUE KVA_NETWORK_ADAPTERS_RATES.Bandwidth_Util_Pct *GT 60

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 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

10 minutes

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 3.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_Media_Spd_Half_Duplex_Warn situation**Description**

Media speed selected is set to half duplex.

The situation will be evaluated for each distinct value of Parent.

Formula

*IF *VALUE KVA_NETWORK_ADAPTERS_RATES.Media_Speed_Running *EQ 'Half Duplex'

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 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

30 seconds

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 1.

Severity

Warning

Clearing conditions

The situation clears when the condition becomes false.

KVA_perip_InputErrs_Info situation**Description**

Internet Protocol input error rate is higher than expected.

The situation is evaluated for each distinct value of the NAME attribute.

Formula

*IF *VALUE KVA_INTERNET_PROTOCOL_DETAIL.Input_Errors_per_Sec *GT 100

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_perip_InputPkts_Drop_Info situation

Description

IP input packets dropped rate is higher than expected.

The situation is evaluated for each distinct value of the NAME attribute.

Formula

`*IF *VALUE KVA_INTERNET_PROTOCOL_DETAIL.Input_Packets_Dropped_per_Sec *GT 100`

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_perip_OutputErrs_Info situation

Description

IP output error rate is higher than expected.

The situation is evaluated for each distinct value of the NAME attribute.

Formula

`*IF *VALUE KVA_INTERNET_PROTOCOL_DETAIL.Output_Errors_per_Sec *GT 100`

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_TCP_ConnInit_Info situation**Description**

Number of TCP connections initiated is high.

The situation is evaluated for each distinct value of the NAME attribute.

Formula

*IF *VALUE KVA_TCP.Connections_Initiated_per_Sec *GT 1000

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_TCP_ConnEst_Info situation**Description**

Number of TCP connections established is high.

The situation is evaluated for each distinct value of the NAME attribute.

Formula

*IF *VALUE KVA_TCP.Connections_Established_per_Sec *GT 1000

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

Process Navigator item**KVA_totproc_cs_Info situation****Description**

Number of Process Context Switches is higher than expected.

The situation will be evaluated for the table.

Formula

*IF *VALUE KVA_PROCESSES_SUMMARY.Process_Context_Switches_per_Sec *GT 1000

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_totproc_runq_avg_Info situation

Description

Process Run Queue is higher than expected.

The situation will be evaluated for the table.

Formula

*IF *VALUE KVA_PROCESSES_SUMMARY.Run_Queue_Avg *GT 10

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_totproc_load_avg_Info situation

Description

Process Load Average is higher than expected.

The situation will be evaluated for the table.

Formula

*IF *VALUE KVA_PROCESSES_SUMMARY.Load_Avg *GT 10

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_totnum_procs_Info situation**Description**

Total number of processes is higher than expected.

The situation will be evaluated for the table.

Formula

*IF *VALUE KVA_PROCESSES_SUMMARY.Total_Num_Processes *GT 1000

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_perproc_IO_pgf_Info situation**Description**

Process I/O page fault rate is higher than expected.

The situation is evaluated for each distinct value of the PN attribute.

Formula

*IF *VALUE KVA_PROCESSES_DETAIL.IO_Page_Fault_per_Sec *GT 10

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_perproc_nonIO_pgf_Info situation**Description**

Process Non I/O page fault rate is higher than expected.

The situation is evaluated for each distinct value of the PN attribute.

Formula

*IF *VALUE KVA_PROCESSES_DETAIL.Non_IO_Page_Fault_per_Sec *GT 100

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_perproc_memres_datsz_Info situation

Description

Process resident data size is larger than expected.

The situation is evaluated for each distinct value of the PN attribute.

Formula

*IF *VALUE KVA_PROCESSES_DETAIL.Resident_Data_Size *GT 100

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_perproc_memres_textsz_Info situation

Description

Process resident text size is larger than expected.

The situation is evaluated for each distinct value of the PN attribute.

Formula

*IF *VALUE KVA_PROCESSES_DETAIL.Resident_Text_Size *GT 100

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_perproc_mem_textsz_Info situation**Description**

Process text size is larger than expected.

The situation is evaluated for each distinct value of the PN attribute.

Formula

*IF *VALUE KVA_PROCESSES_DETAIL.Text_Size *GT 100

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_perproc_vol_cs_Info situation**Description**

Process voluntary context switches rate is higher than expected.

The situation is evaluated for each distinct value of the PN attribute.

Formula

*IF *VALUE KVA_PROCESSES_DETAIL.Voluntary_Context_Switches_per_Sec *GT 100

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

Security Navigator item**KVA_Firewall_Info situation****Description**

The firewall on VIOS was turned off.

The situation will be evaluated for the table.

Formula

```
*IF *SCAN KVA_SECURITY_STATES.Firewall *NE 'ON'
```

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

Status Navigator item

KVA_Device_Stopped_Warn situation

Description

Triggers when status of a device is not normal.

The situation is evaluated for each distinct value of the NAME attribute.

Formula

```
*IF *VALUE KVA_DEVICES.State *EQ 'Stopped'
```

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Warning

Clearing conditions

The situation clears when the condition becomes false.

Storage Navigator item

KVA_Active_Disk_Pct_Info situation

Description

The percentage of time the disks are busy is higher than normal.

The situation is evaluated for each distinct value of the NAME attribute.

Formula

```
*IF *VALUE KVA_DISKS.Active_Disk_Pct *GT 80
```

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_Avg_Read_Transfer_MS_Info situation**Description**

The average time it takes to complete a disk read is high.

The situation is evaluated for each distinct value of the NAME attribute.

Formula

*IF *VALUE KVA_DISKS.Avg_Read_Transfer_MS *GT 5

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_Read_Timeouts_Per_Sec_Info situation**Description**

The number of disk read timeouts per sec is higher than normal.

The situation is evaluated for each distinct value of the NAME attribute.

Formula

*IF *VALUE KVA_DISKS.Read_Timeouts_per_Sec *GT 10

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_Failed_Read_Per_Sec_Info situation**Description**

The number of failed disk read requests per sec is high.

The situation is evaluated for each distinct value of the NAME attribute.

Formula

*IF *VALUE KVA_DISKS.Failed_Read_per_Sec *GT 10

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_Avg_Write_Transfer_MS_Info situation

Description

The average time it takes to complete a disk write is high.

The situation is evaluated for each distinct value of the NAME attribute.

Formula

*IF *VALUE KVA_DISKS.Avg_Write_Transfer_MS *GT 5

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_Write_Timeout_Per_Sec_Info situation

Description

The number of disk write timeouts per sec is higher than normal.

The situation is evaluated for each distinct value of the NAME attribute.

Formula

*IF *VALUE KVA_DISKS.Write_Timeout_per_Sec *GT 10

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_Failed_Writes_Per_Sec_Info situation**Description**

The number of failed disk write requests per sec is high.

The situation is evaluated for each distinct value of the NAME attribute.

Formula

*IF *VALUE KVA_DISKS.Failed_Writes_per_Sec *GT 10

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_Avg_Req_In_WaitQ_MS_Info situation**Description**

The time a disk transfer request is in the wait queue is high.

The situation is evaluated for each distinct value of the NAME attribute.

Formula

*IF *VALUE KVA_DISKS.Avg_Request_In_WaitQ_MS *GT 20

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_ServiceQ_Full_Per_Sec_Info situation**Description**

The rate that the disk service queue becomes full is high.

The situation is evaluated for each distinct value of the NAME attribute.

Formula

*IF *VALUE KVA_DISKS.ServiceQ_Full_per_Sec *GT 5

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

System Navigator item

KVA_PHYP_Pct_High_Info situation

Description

The percentage of time spent in the hypervisor is high.

The situation will be evaluated for the table.

Formula

*IF *VALUE KVA_CPU_SUMMARY.Time_Spent_in_Hypervisor_Pct *GT 3

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

30 seconds

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 2.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_Reduced_Proc_Freq_Info situation

Description

The processor is operating at reduced frequency.

The situation will be evaluated for the table.

Formula

*IF *VALUE KPX_CPU_SUMMARY.Average_Operating_Frequency_Pct *LE 99 *AND
*VALUE KPX_CPU_SUMMARY.Average_Operating_Frequency_Pct *GE 0

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

5 minutes

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 3.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_perCPU_syscalls_Info situation**Description**

Number of syscalls per CPU is high.

The situation is evaluated for each distinct value of the CPU_NUMBER attribute.

Formula

*IF *VALUE KVA_CPU_DETAIL.Syscalls_per_Sec *GT 10000

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_perCPU_forks_Info situation**Description**

Number of forks per CPU is high.

The situation is evaluated for each distinct value of the CPU_NUMBER attribute.

Formula

*IF *VALUE KVA_CPU_DETAIL.Forks_per_Sec *GT 1000

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_perCPU_execs_Info situation**Description**

Number of execs per CPU is high.

The situation is evaluated for each distinct value of the CPU_NUMBER attribute.

Formula

*IF *VALUE KVA_CPU_DETAIL.Execs_per_Sec *GT 1000

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_perCPU_cs_Info situation

Description

Number of context switches per CPU is high.

The situation is evaluated for each distinct value of the CPU_NUMBER attribute.

Formula

*IF *VALUE KVA_CPU_DETAIL.Context_Switches_per_Sec *GT 1000

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_Tot_syscalls_Info situation

Description

Total number of syscalls is high.

The situation is evaluated for each distinct value of the CPU_NUMBER attribute.

Formula

*IF *VALUE KVA_SYSTEM_CALL.Num_Syscalls_per_Sec *GT 10000

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_Tot_forks_Info situation**Description**

Total number of forks is high.

The situation is evaluated for each distinct value of the CPU_NUMBER attribute.

Formula

*IF *VALUE KVA_SYSTEM_CALL.Forks_per_Sec *GT 1000

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_Tot_execs_Info situation**Description**

Total number of execs is high.

The situation is evaluated for each distinct value of the CPU_NUMBER attribute.

Formula

*IF *VALUE KVA_SYSTEM_CALL.Execs_per_Sec *GT 1000

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_LPARBusy_pct_Warn situation**Description**

LPAR Logical Busy percentage is high.

The situation is evaluated for each distinct value of the CPU_NUMBER attribute.

Formula

*IF *VALUE KVA_LOGICAL_PARTITION.Busy_Pct *GT 95

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Warning

Clearing conditions

The situation clears when the condition becomes false.

KVA_LPARPhyBusy_pct_Warn situation

Description

LPAR Physical Busy percentage is high.

The situation is evaluated for each distinct value of the CPU_NUMBER attribute.

Formula

*IF *VALUE KVA_LOGICAL_PARTITION.Phys_Busy_Pct *GT 95

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Warning

Clearing conditions

The situation clears when the condition becomes false.

KVA_LPARvcs_Info situation

Description

LPAR Virtual Context Switching rate is high.

The situation is evaluated for each distinct value of the CPU_NUMBER attribute.

Formula

*IF *VALUE KVA_LOGICAL_PARTITION.Virt_Context_CPU_Switches_per_Sec *GT 1000

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_LPARfreepool_Warn situation**Description**

LPAR CPU free pool space is getting low.

The situation is evaluated for each distinct value of the CPU_NUMBER attribute.

Formula

*IF *VALUE KVA_LOGICAL_PARTITION.Unallocated_CPU_In_Pool *LT 100

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Warning

Clearing conditions

The situation clears when the condition becomes false.

KVA_LPARPhanIntrs_Info situation**Description**

Number of LPAR Phantom interrupts (not for this LPAR) is high.

The situation is evaluated for each distinct value of the CPU_NUMBER attribute.

Formula

*IF *VALUE KVA_LOGICAL_PARTITION.Phantom_Interrupts *GT 100

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_LPARentused_Info situation**Description**

LPAR CPU utilization is more than its entitlement.

The situation is evaluated for each distinct value of the CPU_NUMBER attribute.

Formula

`*IF *VALUE KVA_LOGICAL_PARTITION.Entitlement_Pct *GT 100`

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_LPARphyp_used_Info situation

Description

PHYP (hypervisor) is using more CPU than expected.

The situation is evaluated for each distinct value of the CPU_NUMBER attribute.

Formula

*IF *VALUE KVA_LOGICAL_PARTITION.Time_In_Hypervisor_Pct *GT 1

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_LPAR_MaxCPUCapUsed_Info situation

Description

Triggers when Max_CPU_Cap_Used Pct GT 80%.

The situation is evaluated for each distinct value of the CPU_NUMBER attribute.

Formula

*IF *VALUE KVA_LOGICAL_PARTITION.Max_CPU_Cap_Used_Pct *GT 80

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 minute

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

Top Resources Navigator item

No predefined situations are included for this Navigator item.

User Navigator item**KVA_user_acct_locked_Info situation****Description**

User account is locked.

The situation is evaluated for each distinct value of the USER_NAME attribute.

Formula

*IF *SCAN KVA_DEFINED_USERS.Account_Locked *EQ 'true'

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 hour

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_user_login_retries_Info situation**Description**

User login retries is high.

The situation is evaluated for each distinct value of the USER_NAME attribute.

Formula

*IF *VALUE KVA_DEFINED_USERS.Loginretries *GT 4

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 hour

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 5.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

KVA_user_idletime_Info situation**Description**

User Idle time is longer than expected.

The situation is evaluated for each distinct value of the USER_NAME attribute.

Formula

*IF *VALUE KVA_ACTIVE_USERS.Idle_Time *GT 86400

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

1 hour

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 24.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

Virtual IO Mappings Navigator item

KVA_VTD_Maps_Multi_Disks_Warn situation

Description

The Client Virtual Disk maps to multiple physical disks.

The situation is evaluated for each distinct value of the VSSA_SLOT attribute.

Formula

*IF *SCAN KVA_STORAGE_MAPPINGS.VTD_Spans_Multiple_Disks *EQ 'true'

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 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

12 hours

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 1.

Severity

Warning

Clearing conditions

The situation clears when the condition becomes false.

KVA_NPIV_Status_Warn situation

Description

The NPIV mapping status is Not_Logged_In.

The situation is evaluated for each distinct value of the PN attribute.

Formula

*IF *VALUE KVA_NPIV_MAPPINGS.Status *EQ 0

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

30 seconds

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 2.

Severity

Warning

Clearing conditions

The situation clears when the condition becomes false.

KVA_NPIV_Avail_Ports_Low_Info situation**Description**

Available ports to be mapped for the Fibre Channel is low.

The situation is evaluated for each distinct value of the PFCP attribute.

Formula

*IF *VALUE KVA_NPIV_FCP.Available_Ports *LT 2

See “Attribute groups and attributes for the VIOS Premium agent” on page 23 for descriptions of the attributes in this formula.

Distribution

This situation is available for distribution.

Run at startup

No

Sampling interval

30 seconds

Situation persistence

The number of times the conditions of the situation must occur for the situation to be true is 2.

Severity

Informational

Clearing conditions

The situation clears when the condition becomes false.

Chapter 6. Take Action commands reference

This chapter contains an overview of Take Action commands, references for detailed information about Take Action commands, and descriptions of the Take Action commands included in this monitoring agent, if any.

About Take Action commands

Take Action commands can be run from the portal client or included in a situation or a policy.

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.

Advanced automation uses policies to perform 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.

More information about Take Action commands

For more information about working with Take Action commands, see the *Tivoli Enterprise Portal User's Guide*.

Predefined Take Action commands

The VIOS Premium agent does not provide predefined Take Action commands.

Chapter 7. Policies reference

This chapter contains an overview of policies, references for detailed information about policies, and descriptions of the predefined policies included in this monitoring agent, if any.

About policies

Policies are an advanced automation technique for implementing more complex workflow strategies than you can create through simple automation.

A *policy* is a set of automated system processes that can perform 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.

More information about policies

This monitoring agent does not provide predefined policies. For more information about working with policies, see 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

The VIOS Premium agent does not provide predefined policies.

Chapter 8. Tivoli Common Reporting for the System p monitoring agents

Review this chapter for agent-specific information about IBM Tivoli Common Reporting for the System p monitoring agents. Use this chapter in conjunction with the Tivoli Common Reporting chapter in the *IBM Tivoli Monitoring Administrator's Guide, V6.2.2 Fix Pack 2* for complete information about prerequisites, importing reports, and running reports.

Complete documentation for the Tivoli Common Reporting tool is located at http://publib.boulder.ibm.com/infocenter/tivihelp/v3r1/topic/com.ibm.tivoli.tcr.doc/tcr_welcome.html.

The Tivoli Common Reporting website contains articles and how-to videos on subjects such as how to create an IBM Tivoli Monitoring reports using drag-and-drop methods, how to import Tivoli Common Reporting and Cognos® reports, and how to set up Cognos and Tivoli Common Reporting data connections. You can find a report catalog and information on reporting across Tivoli products at <https://www.ibm.com/developerworks/mydeveloperworks/groups/service/html/communityview?communityUuid=9caf63c9-15a1-4a03-96b3-8fc700f3a364>.

Report package

IBM Tivoli Monitoring V6.2.2 Fix Pack 2 introduces the Cognos data model and reports to be used in Tivoli Common Reporting.

The reports in this package are historical reports, reporting against summarized data collected in Tivoli Data Warehouse V6.2.2. These reports are built to run only against the IBM Tivoli Monitoring VIOS Premium, CEC Base, and AIX Premium agents.

The DB2®, Oracle, and SQL Server databases are supported for running all reports.

The Cognos reports can be administered, run, and edited by IBM Tivoli Common Reporting Version 2.1 software included with IBM Tivoli Monitoring 6.2.2 Fix Pack 2 or later. For more information about Tivoli Common Reporting, see www.ibm.com/developerworks/spaces/tcr.

This version of Tivoli Common Reporting includes Cognos Business Intelligence and Reporting V8.4.

Prerequisites

The Cognos reports require the following prerequisite steps:

1. "Install Tivoli Common Reporting V2.1" on page 280
2. "Obtain the reports from the product media" on page 280
3. "Configure historical collection for CEC Base, VIOS Premium, and AIX Premium agents and the Summarization and Pruning agent" on page 280

IMPORTANT: All prerequisites described here must be met or the reports cannot run.

Install Tivoli Common Reporting V2.1

Tivoli Common Reporting V2.1 must be installed and running. To install and configure Tivoli Common Reporting, see the documentation in the IBM Tivoli Common Reporting information center at http://publib.boulder.ibm.com/infocenter/tivihelp/v3r1/index.jsp?topic=/com.ibm.tivoli.tcr_cog.doc/tcr_welcome.html.

To ensure that Tivoli Common Reporting is running, go to https://machine_name:16311/ibm/console/.

Obtain the reports from the product media

The Cognos reports are available in the following directory: *Product Media root/REPORTS*.

Copy these files in any location on the same computer where the Tivoli Common Reporting server is installed.

Configure historical collection for CEC Base, VIOS Premium, and AIX Premium agents and the Summarization and Pruning agent

After IBM Tivoli Monitoring V6.2.2 Fix Pack 2 is installed and the CEC, VIOS, and AIX Premium agents are installed and configured, configure historical collection. Also, configure the Warehouse Summarization and Pruning agent with or without shifts enabled.

For more information on how to enable historical collection and configure the Warehouse Summarization and Pruning agent in IBM Tivoli Monitoring, see http://publib.boulder.ibm.com/infocenter/tivihelp/v15r1/topic/com.ibm.itm.doc_6.2.2fp1/history_manage_intro.htm.

Note: Daily and hourly summarization must be enabled for the following tables:

- **AIX Premium Agent**
 - KPX_AMS_POOL
 - KPX_CPU_DETAIL
 - KPX_CPU_SUMMARY
 - KPX_ACTIVE_MEMORY_EXPANSION
 - KPX_DISKS
 - KPX_FILE_SYSTEMS
 - KPX_LOGICAL_PARTITION
 - KPX_LOGICAL_VOLUMES
 - KPX_NETWORK_ADAPTERS_RATES
 - KPX_NETWORK_INTERFACES
 - KPX_PAGING_SPACE
 - KPX_PHYSICAL_VOLUMES
 - KPX_VOLUME_GROUPS
 - KPX_PHYSICAL_MEMORY
 - KPX_SYSTEM_CALL
 - KPX_SYSTEM_IO
 - KPX_PROCESSES_SUMMARY
 - KPX_WPAR_INFORMATION
 - KPX_WPAR_NETWORK
 - KPX_VIRTUAL_MEMORY_MANAGEMENT
- **CEC Base Agent**
 - KPX_AMS_POOLS
 - KPX_CPU_POOLS
 - KPX_GLOBAL_CEC

- KPK_MON_LPARS
- KPK_MON_UNMON_ALLOC
- KPK_PER_LPAR
- **HMC Base Agent**
 - No reports
- **VIOS Premium Agent**
 - KVA_AMS_POOL
 - KVA_CPU_DETAIL
 - KVA_CPU_SUMMARY
 - KVA_DISKS KVA_FILE_SYSTEMS
 - KVA_INTERNET_PROTOCOL_DETAIL
 - KVA_INTERNET_PROTOCOL_SUMMARY
 - KVA_LOGICAL_PARTITION
 - KVA_LOGICAL_VOLUMES
 - KVA_NETWORK_ADAPTERS_RATES
 - KVA_NETWORK_MAPPINGS
 - KVA_PAGING_SPACE
 - KVA_VOLUME_GROUPS
 - KVA_PHYSICAL_MEMORY
 - KVA_SYSTEM_CALL
 - KVA_SYSTEM_IO
 - KVA_STORAGE_MAPPINGS
 - KVA_PROCESSES_SUMMARY
 - KVA_PROCESSES_DETAIL KVA_TCP

To ensure that the required views are present, run the following query against the Tivoli Data Warehouse:

- DB2: select distinct "VIEWNAME" from SYSCAT.VIEWS where "VIEWNAME" like '%V'
- Oracle: select distinct "VIEW_NAME" from USER_VIEWS where "VIEW_NAME" like '%V'
- MS SQL Server: select distinct "NAME" from SYS.VIEWS where "NAME" like '%V'

The result set contains the following views:

- **AIX Premium Agent**
 - KPX_AMS_POOL_HV, KPK_PER_LPAR_DV
 - KPX_CPU_DETAIL_HV, KPX_CPU_DETAIL_DV
 - KPX_CPU_SUMMARY_HV, KPX_CPU_SUMMARY_DV
 - KPX_ACTIVE_MEMORY_EXPANSION_HV, KPX_ACTIVE_MEMORY_EXPANSION_DV
 - KPX_DISKS_HV, KPX_DISKS_DV
 - KPX_FILE_SYSTEMS_HV, KPX_FILE_SYSTEMS_DV
 - KPX_LOGICAL_PARTITION_HV, KPX_LOGICAL_PARTITION_DV
 - KPX_LOGICAL_VOLUMES_HV, KPX_LOGICAL_VOLUMES_DV
 - KPX_NETWORK_ADAPTERS_RATES_HV, KPX_NETWORK_ADAPTERS_RATES_DV
 - KPX_NETWORK_INTERFACES_HV, KPX_NETWORK_INTERFACES_DV
 - KPX_PAGING_SPACE_HV, KPX_PAGING_SPACE_DV
 - KPX_PHYSICAL_VOLUMES_HV, KPX_PHYSICAL_VOLUMES_DV
 - KPX_VOLUME_GROUPS_HV, KPX_VOLUME_GROUPS_DV
 - KPX_PHYSICAL_MEMORY_HV, KPX_PHYSICAL_MEMORY_DV
 - KPX_SYSTEM_CALL_HV, KPX_SYSTEM_CALL_DV

- KPX_SYSTEM_IO_HV, KPX_SYSTEM_IO_DV
- KPX_PROCESSES_SUMMARY_HV, KPX_PROCESSES_SUMMARY_DV
- KPX_WPAR_INFORMATION_HV, KPX_WPAR_INFORMATION_DV
- KPX_WPAR_NETWORK_HV, KPX_WPAR_NETWORK_DV
- KPX_VIRTUAL_MEMORY_MANAGEMENT_HV,
KPX_VIRTUAL_MEMORY_MANAGEMENT_DV
- **CEC Base Agent**
 - KPK_AMS_POOLS_HV, KPK_AMS_POOLS_DV
 - KPK_CPU_POOLS_HV, KPK_CPU_POOLS_DV
 - KPK_GLOBAL_CEC_HV, KPK_GLOBAL_CEC_DV
 - KPK_MON_LPARS_HV, KPK_MON_LPARS_DV
 - KPK_MON_UNMON_ALLOC_HV, KPK_MON_UNMON_ALLOC_DV
 - KPK_PER_LPAR_HV, KPK_PER_LPAR_DV
- **HMC Base Agent**
 - No reports
- **VIOS Premium Agent**
 - KVA_AMS_POOL_HV, KVA_AMS_POOL_DV
 - KVA_CPU_DETAIL_HV, KVA_CPU_DETAIL_DV
 - KVA_CPU_SUMMARY_HV, KVA_CPU_SUMMARY_DV
 - KVA_DISKS_HV, KVA_DISKS_DV
 - KVA_FILE_SYSTEMS_HV, KVA_FILE_SYSTEMS_DV
 - KVA_INTERNET_PROTOCOL_DETAIL_HV,
KVA_INTERNET_PROTOCOL_DETAIL_DV
 - KVA_INTERNET_PROTOCOL_SUMMARY_HV,
KVA_INTERNET_PROTOCOL_SUMMARY_DV
 - KVA_LOGICAL_PARTITION_HV, KVA_LOGICAL_PARTITION_DV
 - KVA_LOGICAL_VOLUMES_HV, KVA_LOGICAL_VOLUMES_DV
 - KVA_NETWORK_ADAPTERS_RATES_HV,
KVA_NETWORK_ADAPTERS_RATES_DV
 - KVA_NETWORK_MAPPINGS_HV, KVA_NETWORK_MAPPINGS_DV
 - KVA_PAGING_SPACE_HV, KVA_PAGING_SPACE_DV
 - KVA_VOLUME_GROUPS_HV, KVA_VOLUME_GROUPS_DV
 - KVA_PHYSICAL_MEMORY_HV, KVA_PHYSICAL_MEMORY_DV
 - KVA_SYSTEM_CALL_HV, KVA_SYSTEM_CALL_DV
 - KVA_SYSTEM_IO_HV, KVA_SYSTEM_IO_DV
 - KVA_STORAGE_MAPPINGS_HV, KVA_STORAGE_MAPPINGS_DV
 - KVA_PROCESSES_SUMMARY_HV, KVA_PROCESSES_SUMMARY_DV
 - KVA_PROCESSES_DETAIL_HV, KVA_PROCESSES_DETAIL_DV
 - KVA_TCP_HV, KVA_TCP_DV
 - KVA_VIRTUAL_MEMORY_MANAGEMENT_HV,
KVA_VIRTUAL_MEMORY_MANAGEMENT_DV
 - KVA_PHYSICAL_VOLUMES_HV, KVA_PHYSICAL_VOLUMES_DV

Connect to the Tivoli Data Warehouse by using the database client over ODBC

Cognos uses ODBC to connect to the database. Therefore, it is important to first install a database client on the Tivoli Common Reporting server and connect the database client to the Tivoli Data Warehouse.

DB2

Make sure you have deployed a DB2 database client on the computer where the Cognos-based Tivoli Common Reporting engine is installed. The client must be the same version as the database that Tivoli Data Warehouse is using. Connect the DB2 database client to the database server by running the Configuration Assistant, configuring the local net service name configuration, and restarting your system.

Oracle

Make sure you have deployed the Oracle database client on the computer where the Cognos-based Tivoli Common Reporting engine is installed. Connect the Oracle database client to the database server by running the Oracle Net Configuration Assistant, configuring the local net service name configuration, and restarting your system.

MS SQL Server

Make sure you have deployed the MS SQL database client on the computer where the Cognos-based Tivoli Common Reporting engine is installed. Connect the MS SQL client to the database server by running the MS SQL Management Studio Express®, configuring the local net service name configuration, and restarting your system

Important:: Note the name of the connection you have created as it is used in Tivoli Common Reporting by the report installer as described in “Importing and running IBM Tivoli Monitoring for System p Cognos reports.”

See "Connecting to the Tivoli Data Warehouse using the database client over ODBC" in the *IBM Tivoli Monitoring Administrator's Guide, V6.2.2 Fix Pack 2* "Tivoli Common Reporting" chapter at http://publib.boulder.ibm.com/infocenter/tivihelp/v15r1/topic/com.ibm.itm.doc_6.2.2fp2/tcr_tdwconnect.htm.

Importing and running IBM Tivoli Monitoring for System p Cognos reports

IMPORTANT: All prerequisites must be met before importing and running the reports, or the reports cannot run.

The IBM Tivoli Monitoring for System p Reports package contains an installer that performs the following tasks:

- Importing the reports and data model into Tivoli Common Reporting
- Configuring a data source to connect to Tivoli Data Warehouse
- Running scripts to create and populate the common dimensions in the Tivoli Data Warehouse

Prerequisites

IMPORTANT: You must have completed all of the steps described under “Prerequisites” on page 279 before you can import and run reports.

After completing these steps, you can run any report from the IBM Tivoli Monitoring for System p Reports package.

Procedure

Note: On non-Windows operating systems, you might need to point to Java 1.6+ through your system PATH. Make sure that your system PATH contains a valid path to a Java Virtual Machine, for example:

```
# PATH=$PATH:/ibmjre60/ibm-java-i386-60/jre/bin
```

1. From the directory where you extracted the reports package, run the following file depending on your operating system:

AIX

setup_aix.bin

Linux

setup_linux.bin

Solaris

setup_solaris.bin

Windows

setup_windows.exe

2. Select the desired language.
3. Accept the license agreement.
4. Select the location where the Tivoli Common Reporting server is installed (*not* the location where the reports will be installed). The path must end with /tcr folder. By default, the path is C:\IBM\tivoli\tipv2Components\TCRComponent or /IBM/tivoli/tipv2Components/TCRComponent.

Note: If Tivoli Common Reporting installation is distributed, reports must be installed on the dispatcher site only.

5. Choose the report sets for installation by selecting the **IBM Tivoli Monitoring for System P Cognos Reports** check box.
6. Provide Tivoli Common Reporting credentials: user name and password.
7. Configure COGNOS data sources to connect to the Tivoli Data Warehouse.

Note: If you have a Tivoli Data Warehouse connection already defined in Tivoli Common Reporting (from a previous installation of reports), skip this step. To test whether you have Tivoli Data Warehouse defined, go to **TCR > Launch Administration > Configuration > Data Source Connections** and see if there is an entry called **TDW**. If yes, then skip this step in the installation. You must manually configure the data source in Tivoli Common Reporting through this administration panel as described at http://publib.boulder.ibm.com/infocenter/tivihelp/v3r1/topic/com.ibm.tivoli.tcr.doc_21/ttcr_config_db.html. If you have not defined a data source in Tivoli Common Reporting, do not skip this option. You must enter the database alias name or the ODBC name for the database name input field.

8. In the next panel, you enter the JDBC credentials. the JDBC connection is used to run the Common Dimensions scripts against the Tivoli Data Warehouse. Provide the database admin (such as db2admin, system, and so on) user name and password in the Configure data script window for JDBC User Credentials. Admin privileges are required in this step to create the IBM_TRAM schema and required tables. If you are using an Oracle database and you do not have the USERS and TEMP tablespaces in your database, you must create them in your Tivoli Data Warehouse before you can run these scripts.

Note: If you already have these common dimensions (Time Dimension, Weekday Lookup, Month Lookup, and Computer System under IBM_TRAM schema) in your Tivoli Data Warehouse from a previous installation and you want to modify those dimensions to define time granularity that is different from what is in the Tivoli Data Warehouse, you can skip this step and run the scripts manually as described in "Creating shared dimension tables and populating the time dimensions table" in the *IBM Tivoli Monitoring Administrator's Guide, V6.2.2 Fix Pack 2* "Tivoli Common Reporting" chapter (http://publib.boulder.ibm.com/infocenter/tivihelp/v15r1/topic/com.ibm.itm.doc_6.2.2fp2/tcr_reports_dimensionsshared.htm).

9. Select the **JDBC Database Credentials** tab, and select **database type**. Edit the JDBC URL, JDBC driver file names, and JDBC driver class for the selected database type. For DB2, the required driver file names are: *db2jcc.jar* and *db2jcc_license_cu.jar*. JDBC credentials must have db2admin privileges. For Oracle, the required driver file is *oraclethin.jar*. For SQL Server, the required driver is *sqljdbc.jar*.
10. On the pre-installation summary panel, all reports selected for installation are displayed.
11. Click **Install**, and wait for the installer to finish.
12. The Installation results panel shows the status of all installation actions for every item or report.

One log file and one trace file are included. Both files are in the user home directory, with the following names:

- Report_Installer_for_Tivoli_Common_Reporting_InstallLog.log (Log)
- Report_Installer_For_TCR_Output.txt (Trace)

On Windows systems in the Run window, type %USERPROFILE% to open the file explorer to the directory where the log and trace files are created. If you skipped running the database scripts or a script failed, you can run the script manually by using the instructions in "Creating shared dimension tables and populating the time dimensions table" in the *IBM Tivoli Monitoring Administrator's Guide, V6.2.2 Fix Pack 2* "Tivoli Common Reporting" chapter (http://publib.boulder.ibm.com/infocenter/tivihelp/v15r1/topic/com.ibm.itm.doc_6.2.2fp2/tcr_reports_dimensionsshared.htm).

At the end of the installation you see 3 messages. One for the status of importing reports; one for the status of defining the data source; and one for the status of running database scripts. If any of these messages indicate a failure, look at the Report_Installer_For_TCR_Output.txt and Report_Installer_InstallLog.log file. On Windows systems, this file is located at C:\Documents and Settings\Administrator.

Use the following steps to make sure your installation was successful:

1. Go to Tivoli Common Reporting and see if IBM Tivoli Monitoring for System P Reports v6.2.2 IF2 is displayed in the Public Folders.
2. Go to **TCR > Launch Administration > Configuration > Data Source Connections** and see if Tivoli Data Warehouse has been defined. Click **Tivoli Data Warehouse**. On the next page, Tivoli Data Warehouse has a **Test Connection** icon next to it. Click the **Test connection** icon to make sure you are connected to the database.
3. Go to **TCR > Launch Query Studio**. Select **IBM Tivoli Monitoring for System P Reports v6.2.2 IF2**. In the left hand navigation, all the data is displayed. Browse to **IBM Tivoli Monitoring for System P Reports v6.2.2 IF2 > ITM for System P Agents (Query) > TCR Shared Dimensions (Query) > Time**. Drag **Date** into the space on the left. If you get no data, Time Dimension has not been defined correctly.

Cognos report descriptions

The following Cognos reports are described in this chapter:

- "What if analysis for workload placement" on page 286
 - "Number of LPARs for CEC report" on page 286
 - "Resources Needed for Additional LPARS on CEC report" on page 288

- “Performance trends and resource forecasts” on page 289
 - “CPU Pools Utilization report” on page 289
 - “Frame Workload Trend and Forecast report” on page 290
 - “LPAR Physical CPU Utilization Details report” on page 291
 - “LPAR Physical Memory Utilization Details report” on page 292
 - “LPAR Workload Trend and Forecast report” on page 293
 - “VIO Disk Capacity Details report” on page 294
 - “VIO Shared Ethernet Adapter Utilization report” on page 295
- “Workload right-sizing and balancing” on page 295
 - “Top or Bottom *n* CECs by Physical CPU Utilization report” on page 295
 - “Top or Bottom LPARs by Physical CPU Utilization report” on page 297
 - “Top or Bottom CECs by Physical Memory Utilization report” on page 298
 - “Top or Bottom LPARs in a CEC by Physical Memory Utilization report” on page 299
 - “Top or Bottom VIOs by Disk Capacity report” on page 300

The Cognos reports use the following attribute groups:

- KPK_CPU_POOLS_HV
- KPK_CPU_POOLS_DV
- KPK_GLOBAL_CEC_HV
- KPK_GLOBAL_CEC_DV
- KPK_MON_UNMON_ALLOC_DV
- KPK_MON_UNMON_ALLOC_HV
- KPK_MON_LPARS_HV
- KPK_MON_LPARS_DV
- KVA_PHYSICAL_VOLUMES_HV
- KVA_PHYSICAL_VOLUMES_DV
- KVA_STORAGE_MAPPINGS_DV
- KVA_NETWORK_ADAPTERS_RATES_DV

What if analysis for workload placement

Number of LPARs for CEC report:

Name	System P: Number of LPARs for CEC
Description	This report provides an estimate of how many more LPARs can be placed on a CEC or /Frame based on the historical usage and allocation of the LPARs on that CEC or Frame.

Parameters	<p>Date Range</p> <p>Report Period You can choose from a predefined date range such as Last Week, Current Month, Last 30 Days, and so on; or, you can enter a start and end date and time for the reporting period.</p> <p>Start Date You can choose a start date from a calendar and start time from the time widget. Both date and time must be selected.</p> <p>End Date You can choose a start date from a calendar and start time from the time widget. Both date and time must be selected.</p> <p>Display Options</p> <p>CEC Select the desired CEC from the environment.</p> <p>Profile Select the desired profile to run the report against. The options are Average (default), Peak, and User-defined.</p> <p>Resource criteria Reports can be seen based on two different criteria: Resource Usage (default) or Resource Allocation.</p> <p>Buffer The buffer is to indicate the resources that the user does not want to allocate.</p> <p>User-defined Resource Usage Enter user-defined values to be used alongside the User-defined profile.</p> <p>Shift and Vacation Periods</p> <p>Shift Period If shifts are enabled, the hourly tables have a value for SHIFTPERIOD of 1 or 2, based on peak and off-peak hours configured in the data warehouse. The daily tables have values of 1 and 2, corresponding to the peak and off peak-hours, respectively, and a value of -1 corresponding to the summarized value for that day. If shifts are not enabled, the default value is -1.</p> <p>Vacation Period If the Vacation Period option is not enabled, the default value is -1. Otherwise, enter 1 or 2, corresponding to the peak and off peak-hours, respectively.</p>
Tables or views used	<p>KPK_MON UNMON_ALLOC_DV</p> <p>KPK_GLOBAL_CEC_DV</p>
Output	<p>This report contains a table showing the number of LPARs that can be added to a CEC, based on the resource usage or allocation (defined by the user) of the monitored LPARs and the available resource capacity on the CEC after allowing for used-define buffers. The table shows information related to different resources (CPU and memory) on the selected CEC and how these resources affect the total number of LPARs that can be added. The average resources allocated or used is the historical average of all the deployed LPARs on the CEC. The available resource capacity is the current unallocated resources. The number of LPARs that can be deployed is the Available Resource Capacity / Average Resource Usage per LPAR.</p>

Resources Needed for Additional LPARS on CEC report:

Name	System P: Resources Needed For Additional LPARS on CEC
Description	This report provides an estimate of how much more resources (CPU and memory) will be needed to add additional LPARs to the CEC or Frame.
Parameters	<p>Date Range</p> <p>Report Period You can choose from a predefined date range such as Last Week, Current Month, Last 30 Days, and so on; or, you can enter a start and end date and time for the reporting period.</p> <p>Start Date You can choose a start date from a calendar and start time from the time widget. Both date and time must be selected.</p> <p>End Date You can choose a start date from a calendar and start time from the time widget. Both date and time must be selected.</p> <p>Display Options</p> <p>CEC Select the desired CEC from the environment.</p> <p>Profile Select the desired profile to run the report against. The options are Average (default), Peak, and User-defined.</p> <p>Number of LPARs to add The numbers of LPARs you want to add to the selected CEC.</p> <p>Buffer The buffer is to indicate the resources that the user does not want to allocate.</p> <p>User-defined Resource Usage Enter user-defined values to be used alongside the User-defined profile.</p> <p>Shift and Vacation Periods</p> <p>Shift Period If shifts are enabled, the hourly tables have a value for SHIFTPERIOD of 1 or 2, based on peak and off-peak hours configured in the data warehouse. The daily tables have values of 1 and 2, corresponding to the peak and off peak-hours, respectively, and a value of -1 corresponding to the summarized value for that day. If shifts are not enabled, the default value is -1.</p> <p>Vacation Period If the Vacation Period option is not enabled, the default value is -1. Otherwise, enter 1 or 2, corresponding to the peak and off peak-hours, respectively.</p>
Tables or views used	<p>KPK_MON UNMON_ALLOC_DV</p> <p>KPK_GLOBAL_CEC_DV</p>
Output	<p>This report contains a table showing the resources required to successfully add the additional LPARs to the selected CEC, based on the current resource usage of the monitored partitions. The table shows information related to different resources (CPU and memory) on the selected CEC and how much of these resources is required to add the desired number of LPARs. A value of 0 for a particular resource means no additional capacity is required for this resource to accommodate the new LPARs. The average resources usage per LPAR is the historical average of all the deployed LPARs on the CEC. Resources required by additional LPARs to be added to the CEC is the Average Resource Usage per LPAR * Number of LPARs to be added. The available resource capacity is the current unallocated resources. Additional capacity required for new LPARs is the Available Resource Capacity – Resources Required by Additional LPARs. If additional resources are required, the row is highlighted in red.</p>

Performance trends and resource forecasts

CPU Pools Utilization report:

Name	System P: CPU Pools Utilization
Description	This report shows the CPU usage of all pools stacked up in a CEC or Frame over time.
Parameters	<p>Date Range</p> <p>Report Period You can choose from a predefined date range such as Last Week, Current Month, Last 30 Days, and so on; or you can enter a start and end date and time for the reporting period.</p> <p>Start Date You can choose a start date from a calendar and start time from the time widget. Both date and time must be selected.</p> <p>End Date You can choose a start date from a calendar and start time from the time widget. Both date and time must be selected.</p> <p>Resource Selection</p> <p>CEC Select the desired CEC from the environment.</p> <p>Display Options</p> <p>Summarization Type Choose the summarization type from the drop-down list. The options are Hourly and Daily (the default value).</p> <p>Shift Period If shifts are enabled, the hourly tables have a value for SHIFTPERIOD of 1 or 2, based on peak and off-peak hours configured in the data warehouse. The daily tables have values of 1 and 2, corresponding to the peak and off peak-hours, respectively, and a value of -1 corresponding to the summarized value for that day. If shifts are not enabled, the default value is -1.</p> <p>Vacation Period If the Vacation Period is option not enabled, the default value is -1. Otherwise, enter 1 or 2, corresponding to the peak and off peak-hours, respectively.</p>
Tables or views used	KPK_CPU_POOLS_DV KPK_GLOBAL_CEC_DV
Output	This report contains an area chart showing the total CPU units used by CPU Pools over a selected period of time. The table shows various CPU attributes such as Average CPU Pool Units Consumed, the Average Maximum CPU Pool Capacity, Allocated CEC CPU Units, and Total CEC CPU Units.

Frame Workload Trend and Forecast report:

Name	System P: Frame Workload Trend and Forecast
Description	This report shows a linear forecast of CPU and memory utilization for the frame.
Parameters	<p>Resource CEC Select the desired CEC from the environment.</p> <p>Date Range Report Period You can choose from a predefined date range such as Last Week, Current Month, Last 30 Days, and so on; or you can enter a start and end date and time for the reporting period. Forecast Period (Days) The number of days to forecast.</p> <p>Display Options Shift Period If shifts are enabled, the hourly tables have a value for SHIFTPERIOD of 1 or 2, based on peak and off-peak hours configured in the data warehouse. The daily tables have values of 1 and 2, corresponding to the peak and off peak-hours, respectively, and a value of -1 corresponding to the summarized value for that day. If shifts are not enabled, the default value is -1. Vacation Period If the Vacation Period option is not enabled, the default value is -1. Otherwise, enter 1 or 2, corresponding to the peak and off peak-hours, respectively. Thresholds (%) CPU and memory thresholds to compare against the forecasted values.</p>
Tables or views used	KPK_MON_UNMON_ALLOC_DV
Output	This report contains line charts for CEC CPU and memory usage and the forecasted usage values.

LPAR Physical CPU Utilization Details report:

Name	System p: LPAR Physical CPU Utilization Details
Description	This report shows the CPU usage for all LPARs in all the CPU pools in a CEC or Frame over time compared to the maximum capacity of the pools.
Parameters	<p>Date Range</p> <p>Report Period You can choose from a predefined date range such as Last Week, Current Month, Last 30 Days, and so on; or, you can enter a start and end date and time for the reporting period.</p> <p>Start Date You can choose a start date from a calendar and start time from the time widget. Both date and time must be selected.</p> <p>End Date You can choose a start date from a calendar and start time from the time widget. Both date and time must be selected.</p> <p>Display Options</p> <p>CEC Select the desired CEC from the environment.</p> <p>LPAR Select the desired LPAR (one or many) from the specified CEC.</p> <p>Summarization Type Choose the summarization type from the drop-down list. The options are Hourly and Daily (the default value).</p> <p>Shift and Vacation Periods</p> <p>Shift Period If shifts are enabled, the hourly tables have a value for SHIFTPERIOD of 1 or 2, based on peak and off-peak hours configured in the data warehouse. The daily tables have values of 1 and 2, corresponding to the peak and off peak-hours, respectively, and a value of -1 corresponding to the summarized value for that day. If shifts are not enabled, the default value is -1.</p> <p>Vacation Period If the Vacation Period option is not enabled, the default value is -1. Otherwise, enter 1 or 2, corresponding to the peak and off peak-hours, respectively.</p>
Tables or views used	KPK_MON_LPARS_HV KPK_GLOBAL_CEC_HV
Output	This report shows an area chart displaying the total CPU units used over a selected period of time for the selected LPARs or for all the LPARs in a CEC. A table view below chart shows various CPU attributes such as Total and Maximum Physical CPU Units Used, Average and Maximum CPU Entitlement Used (%), Average, Maximum and Total CPU Allocated, and Maximum CPU Cap Used (%).

LPAR Physical Memory Utilization Details report:

Name	System p: LPAR Physical Memory Utilization Details
Description	This report shows current, average, and maximum memory utilization for one or more LPARs.
Parameters	<p>Date Range</p> <p>Report Period You can choose from a predefined date range such as Last Week, Current Month, Last 30 Days, and so on; or, you can enter a start and end date and time for the reporting period.</p> <p>Start Date You can choose a start date from a calendar and start time from the time widget. Both date and time must be selected.</p> <p>End Date You can choose a start date from a calendar and start time from the time widget. Both date and time must be selected.</p> <p>Display Options</p> <p>CEC Select the desired CEC from the environment.</p> <p>LPAR Select the desired LPAR (one or many) from the specified CEC.</p> <p>Summarization Type Choose the summarization type from the drop-down list. The options are Hourly and Daily (the default value).</p> <p>Shift and Vacation Periods</p> <p>Shift Period If shifts are enabled, the hourly tables have a value for SHIFTPERIOD of 1 or 2, based on peak and off-peak hours configured in the data warehouse. The daily tables have values of 1 and 2, corresponding to the peak and off peak-hours, respectively, and a value of -1 corresponding to the summarized value for that day. If shifts are not enabled, the default value is -1.</p> <p>Vacation Period If vacation period is not enabled, the default value is -1. Otherwise, enter 1 or 2, corresponding to the peak and off peak-hours, respectively.</p>
Tables or views used	KPK_MON_LPARS_HV
Output	This report is an overlaid line chart showing the average and maximum memory utilization for one or more LPARs over a selected period of time. A table shows detailed values such as average and maximum physical memory in both percentage and megabytes.

LPAR Workload Trend and Forecast report:

Name	System P: LPAR Workload Trend and Forecast
Description	This report shows a linear forecast of CPU and memory for one or more LPARs.
Parameters	<p>Date Range</p> <p>Report Period You can choose from a predefined date range such as Last Week, Current Month, Last 30 Days, and so on; or, you can enter a start and end date and time for the reporting period.</p> <p>Forecast Period (Days) The number of days to forecast.</p> <p>Display Options</p> <p>Shift Period If shifts are enabled, the hourly tables have a value for SHIFTPERIOD of 1 or 2, based on peak and off-peak hours configured in the data warehouse. The daily tables have values of 1 and 2, corresponding to the peak and off peak-hours, respectively, and a value of -1 corresponding to the summarized value for that day. If shifts are not enabled, the default value is -1.</p> <p>Vacation Period If vacation period is not enabled, the default value is -1. Otherwise, enter 1 or 2, corresponding to the peak and off peak-hours, respectively.</p> <p>Thresholds (%) CPU and memory thresholds to compare against the forecasted values.</p>
Tables or views used	KPK_MON_LPARS_HV
Output	This report contains line charts for CPU and memory usage and the forecasted usage values for the selected LPARs.

VIOS Disk Capacity Details report:

Name	System p: VIOS Disk Capacity Details
Description	This report shows average megabytes used and free on the disk over a selected period of time.
Parameters	<p>Date Range</p> <p>Report Period You can choose from a predefined date range such as Last Week, Current Month, Last 30 Days, and so on, or, you can enter a start and end date and time for the reporting period.</p> <p>Start Date You can choose a start date from a calendar and start time from the time widget. Both date and time must be selected.</p> <p>End Date You can choose a start date from a calendar and start time from the time widget. Both date and time must be selected.</p> <p>Display Options</p> <p>VIOS Select the desired VIOS in the environment.</p> <p>Summarization Type Choose the summarization type from the drop-down list. The options are Hourly and Daily (the default value).</p> <p>Shift and Vacation Periods</p> <p>Shift Period If shifts are enabled, the hourly tables have a value for SHIFTPERIOD of 1 or 2, based on peak and off-peak hours configured in the data warehouse. The daily tables have values of 1 and 2, corresponding to the peak and off peak-hours, respectively, and a value of -1 corresponding to the summarized value for that day. If shifts are not enabled, the default value is -1.</p> <p>Vacation Period If vacation period is not enabled, the default value is -1. Otherwise, enter 1 or 2, corresponding to the peak and off peak-hours, respectively.</p>
Tables or views used	<p>KVA_PHYSICAL_VOLUMES_DV</p> <p>KVA_STORAGE_MAPPINGS_DV</p>
Output	This report shows a stacked area chart for each disk in the VIOS. The lower area of the chart shows the average megabytes used on the disk over a selected period of time. The upper area shows average free megabytes on the disk over the selected period of time. A table shows detailed values for all disks.

VIOS Shared Ethernet Adapter Utilization report:

Name	System P: VIOS Disk Capacity Details
Description	This report displays
Parameters	<p>Date Range</p> <p>Report Period You can choose from a predefined date range such as Last Week, Current Month, Last 30 Days, and so on; or, you can enter a start and end date and time for the reporting period.</p> <p>Start Date You can choose a start date from a calendar and start time from the time widget. Both date and time must be selected.</p> <p>End Date You can choose a start date from a calendar and start time from the time widget. Both date and time must be selected.</p> <p>Display Options</p> <p>VIOS Select the desired VIOS in the environment.</p> <p>Summarization Type Choose the summarization type from the drop-down list. The options are Hourly and Daily (the default value).</p> <p>Shift and Vacation Periods</p> <p>Shift Period If shifts are enabled, the hourly tables have a value for SHIFTPERIOD of 1 or 2, based on peak and off-peak hours configured in the data warehouse. The daily tables have values of 1 and 2, corresponding to the peak and off peak-hours, respectively, and a value of -1 corresponding to the summarized value for that day. If shifts are not enabled, the default value is -1.</p> <p>Vacation Period If vacation period is not enabled, the default value is -1. Otherwise, enter 1 or 2, corresponding to the peak and off peak-hours, respectively.</p>
Tables or views used	<p>KVA_PHYSICAL_VOLUMES_DV</p> <p>KVA_STORAGE_MAPPINGS_DV</p>
Output	This report contains a stacked area chart that is generated for each disk in the VIOS. The lower area of the chart is the average used megabytes over a selected period of time for the disk. The upper area is the average free megabytes over the selected period of time for the disk. The table shows detailed values for all disks.

Workload right-sizing and balancing

Top or Bottom *n* CECs by Physical CPU Utilization report:

Name	Top or Bottom <i>n</i> CECs by Physical CPU Utilization
Description	This report displays average CPU Utilization for all CECs in the environment during the report period, with bar charts showing the top and bottom <i>n</i> CECs based on CPU utilization.

Parameters	<p>Date Range</p> <p>Report Period You can choose from a predefined date range such as Last Week, Current Month, Last 30 Days, and so on; or, you can enter a start and end date and time for the reporting period.</p> <p>Start Date You can choose a start date from a calendar and start time from the time widget. Both date and time must be selected.</p> <p>End Date You can choose a start date from a calendar and start time from the time widget. Both date and time must be selected.</p> <p>Display Options</p> <p>Top/Bottom <i>N</i> CECs You can choose any integer to filter the number of top CECs visible in the bar charts.</p> <p>Shift and Vacation Periods</p> <p>Shift Period If shifts are enabled, the hourly tables have a value for SHIFTPERIOD of 1 or 2, based on peak and off-peak hours configured in the data warehouse. The daily tables have values of 1 and 2, corresponding to the peak and off peak-hours, respectively, and a value of -1 corresponding to the summarized value for that day. If shifts are not enabled, the default value is -1.</p> <p>Vacation Period If vacation period is not enabled, the default value is -1. Otherwise, enter 1 or 2, corresponding to the peak and off-peak hours, respectively.</p>
Tables or views used	<p>KPK_GLOBAL_CEC_HV</p> <p>KPK_MON_UNMON_ALLOC_DV</p>
Output	<p>This report shows two bar charts. One chart displays the top <i>n</i> CECs based on average CPU Utilization. The other chart displays the bottom <i>n</i> CECs. A table below these charts displays CPU attributes for all CECs in the environment during the report period. Use the CEC names in the table to drill down to the CPU Utilization across all LPARs in a CEC report.</p> <p>Note: This measurement of CPU utilization for the frame is currently accurate only if all of the LPARs are "Monitored."</p>

Top or Bottom LPARs by Physical CPU Utilization report:

Name	Top or Bottom LPARs by Physical CPU Utilization
Description	This report displays CPU Utilization for all LPARs in the environment.
Parameters	<p>Date Range</p> <p>Report Period You can choose from a predefined date range such as Last Week, Current Month, Last 30 Days, and so on; or, you can enter a start and end date and time for the reporting period.</p> <p>Start Date You can choose a start date from a calendar and start time from the time widget. Both date and time must be selected.</p> <p>End Date You can choose a start date from a calendar and start time from the time widget. Both date and time must be selected.</p> <p>Display Options</p> <p>CEC Select the desired CEC from the environment or select % to view the top and bottom LPARs from all CECs in the environment.</p> <p>Top/Bottom <i>N</i> LPARs You can choose any integer to filter the number of top CECs visible in the bar charts.</p> <p>Shift and Vacation Periods</p> <p>Shift Period If shifts are enabled, the hourly tables have a value for SHIFTPERIOD of 1 or 2, based on peak and off-peak hours configured in the data warehouse. The daily tables have values of 1 and 2, corresponding to the peak and off peak-hours, respectively, and a value of -1 corresponding to the summarized value for that day. If shifts are not enabled, the default value is -1.</p> <p>Vacation Period If vacation period is not enabled, the default value is -1. Otherwise, enter 1 or 2, corresponding to the peak and off peak-hours, respectively.</p>
Tables or views used	KPK_MON_LPARS_DV KPK_GLOBAL_CEC_HV
Output	This report shows two bar charts. One bar displays the top <i>n</i> LPARs based on average CPU Utilization; the other displays the bottom <i>n</i> LPARs for the selected CEC. A table below these charts displays various CPU attributes for all LPARs in the environment, such as Total and Maximum Physical CPU used, Average LPAR CPU Utilization (%), Total CPU Units Allocated, and Average Physical CPU Entitlement (%). Use the LPAR names in the table to drill down to the CPU Utilization over time for that LPAR.

Top or Bottom CECs by Physical Memory Utilization report:

Name	System p: Top or Bottom CECs by Physical Memory Utilization
Description	This report shows average and maximum CPU usage over a specified period of time for the selected LPARs.
Parameters	<p>Date Range</p> <p>Report Period You can choose from a predefined date range such as Last Week, Current Month, Last 30 Days, and so on; or, you can enter a start and end date and time for the reporting period.</p> <p>Start Date You can choose a start date from a calendar and start time from the time widget. Both date and time must be selected.</p> <p>End Date You can choose a start date from a calendar and start time from the time widget. Both date and time must be selected.</p> <p>Display Options</p> <p>CEC Select the desired CEC from the environment.</p> <p>LPAR Select the desired LPAR (one or many) from the specified CEC.</p> <p>Summarization Type Choose the summarization type from the drop-down list. The options are Hourly and Daily (the default value).</p> <p>Shift and Vacation Periods</p> <p>Shift Period If shifts are enabled, the hourly tables have a value for SHIFTPERIOD of 1 or 2, based on peak and off-peak hours configured in the data warehouse. The daily tables have values of 1 and 2, corresponding to the peak and off peak-hours, respectively, and a value of -1 corresponding to the summarized value for that day. If shifts are not enabled, the default value is -1.</p> <p>Vacation Period If vacation period is not enabled, the default value is -1. Otherwise, enter 1 or 2, corresponding to the peak and off-peak hours, respectively.</p>
Tables or views used	KPK_GLOBAL_CEC_HV KPK_MON_LPARS_HV
Output	This report shows two bar charts. One displays the top <i>n</i> CECs based on average Memory Utilization; the other displays the bottom <i>n</i> CECs. A table below these charts shows memory attributes such as Average and Maximum Allocated Memory Used in MB and % for all CECs. For each CEC agent in the table, you can drill through to the Memory Utilization across all LPARs in a CEC report.

Top or Bottom LPARs in a CEC by Physical Memory Utilization report:

Name	System p: Top or Bottom LPARs in a CEC by Physical Memory Utilization
Description	This report shows average and maximum memory utilization and physical memory allocated in megabytes for all LPARs in the environment.
Parameters	<p>Date Range</p> <p>Report Period You can choose from a predefined date range such as Last Week, Current Month, Last 30 Days, and so on; or, you can enter a start and end date and time for the reporting period.</p> <p>Start Date You can choose a start date from a calendar and start time from the time widget. Both date and time must be selected.</p> <p>End Date You can choose a start date from a calendar and start time from the time widget. Both date and time must be selected.</p> <p>Display Options</p> <p>CEC Select the desired CEC from the environment or select % to view the top and bottom LPARs from all CECs in the environment</p> <p>Top N LPARs Choose any integer on which to filter the number of top LPARs visible in the bar charts.</p> <p>Bottom N LPARs Choose any integer on which to filter the number of bottom LPARs visible in the bar charts</p> <p>Shift and Vacation Periods</p> <p>Shift Period If shifts are enabled, the hourly tables have a value for SHIFTPERIOD of 1 or 2, based on peak and off-peak hours configured in the data warehouse. The daily tables have values of 1 and 2, corresponding to the peak and off peak-hours, respectively, and a value of -1 corresponding to the summarized value for that day. If shifts are not enabled, the default value is -1.</p> <p>Vacation Period If vacation period is not enabled, the default value is -1. Otherwise, enter 1 or 2, corresponding to the peak and off peak-hours, respectively.</p>
Tables or views used	KPK_MON_LPARS_DV KPK_GLOBAL_CEC_HV
Output	This report shows two bar charts. One displays the top <i>n</i> LPARs based on average memory utilization, and the other displays the bottom <i>n</i> LPARs. A table below these charts displays various memory attributes for all LPARs in the environment. Use the LPAR names in the table to drill down to the Memory Utilization over time report for that LPAR.

Top or Bottom VIOSs by Disk Capacity report:

Name	System p: Top or Bottom VIOSs by Disk Capacity
Description	This report shows the top and bottom VIOSs based on average megabytes used and the disk capacity for all VIOSs in the environment.
Parameters	<p>Date Range</p> <p>Report Period You can choose from a predefined date range such as Last Week, Current Month, Last 30 Days, and so on; or, you can enter a start and end date and time for the reporting period.</p> <p>Start Date You can choose a start date from a calendar and start time from the time widget. Both date and time must be selected.</p> <p>End Date You can choose a start date from a calendar and start time from the time widget. Both date and time must be selected.</p> <p>Display Options</p> <p>Top/Bottom N VIOSs Choose any integer on which to filter the number of top or bottom VIOSs visible in the bar charts</p> <p>Shift and Vacation Periods</p> <p>Shift Period If shifts are enabled, the hourly tables have a value for SHIFTPERIOD of 1 or 2, based on peak and off-peak hours configured in the data warehouse. The daily tables have values of 1 and 2, corresponding to the peak and off peak-hours, respectively, and a value of -1 corresponding to the summarized value for that day. If shifts are not enabled, the default value is -1.</p> <p>Vacation Period If vacation period is not enabled, the default value is -1. Otherwise, enter 1 or 2, corresponding to the peak and off peak-hours, respectively.</p>
Tables or views used	<p>KVA_PHYSICAL_VOLUMES_DV</p> <p>KVA_STORAGE_MAPPINGS_DV</p>
Output	This report shows two stacked bar charts. One chart displays the top <i>n</i> VIOSs based on average megabytes used. The top part of each bar shows the average size in megabytes. The other report displays the bottom <i>n</i> VIOSs. A table below these charts displays disk capacity for all VIOSs in the environment. Each VIOS name in the table is a link that you can use to drill down to the disk capacity over time for that VIOS.

Chapter 9. Troubleshooting

This chapter provides agent-specific troubleshooting information. See the *IBM Tivoli Monitoring Troubleshooting Guide* for general troubleshooting information. Also see “Support information” on page 318 for other problem-solving options.

Note: You can resolve some problems by ensuring that your system matches the system requirements listed in Chapter 2, “Requirements and agent-specific installation and configuration information for the monitoring agent,” on page 5.

Gathering product information for IBM Software Support

Before contacting IBM Software Support about a problem you are experiencing with this product, gather the information in Table 2 that relates to the problem.

Table 2. Information to gather before contacting IBM Software Support

Information type	Description
Log files	Collect trace log files from failing systems. Most logs are located in a logs subdirectory on the host computer. See “Trace logging” on page 302 for lists of all trace log files and their locations. See the <i>Tivoli Enterprise Portal User's Guide</i> for general information about the IBM Tivoli Monitoring environment.
VIOS 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: <ul style="list-style-type: none">• IBM Tivoli Monitoring. Also provide the patch level, if available.• IBM Tivoli Monitoring: VIOS Premium Agent
Screen captures	Screen captures of incorrect output, if any
(UNIX 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.

You can use the `pdcollect` tool to collect the most commonly used information from a system. This tool gathers log files, configuration information, version information, and other data. See the “`pdcollect` tool” section in the “Tools” chapter of the *IBM Tivoli Monitoring Troubleshooting Guide* for more information about using this tool.

See [http://www.ibm.com/support/entry/portal/Open_service_request/Software/Software_support_\(general\)](http://www.ibm.com/support/entry/portal/Open_service_request/Software/Software_support_(general)) for information about working with IBM Software Support.

Built-in troubleshooting features

The primary troubleshooting feature in the VIOS Premium agent is logging. *Logging* refers to the text messages and trace data that is generated by the VIOS Premium agent. Messages and trace data are sent to a file.

Trace data captures transient information about the current operating environment when a component or application fails to operate as designed. IBM Software

Support personnel use the captured trace information to determine the source of an error or unexpected condition. See “Trace logging” for more information.

Problem classification

The following types of problems might occur with the VIOS Premium agent:

- Installation and configuration
- General usage and operation
- Display of monitoring data
- Take Action commands

This chapter provides symptom descriptions and detailed workarounds for these problems, and describes the logging capabilities of the monitoring agent. See the *IBM Tivoli Monitoring Troubleshooting Guide* for general troubleshooting information.

Trace logging

Trace logs 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 sections to learn how to configure and use trace logging:

- “Principal trace log files” on page 303
- “Examples: using trace logs” on page 305
- “Setting RAS trace parameters” on page 306

Note: The documentation refers to the RAS facility in IBM Tivoli Monitoring as “RAS1”.

IBM Software Support uses the information captured by trace logging to trace a problem to its source or to determine why an error occurred. 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

Table 3 on page 303 provides the names, locations, and descriptions of RAS1 log files. The log file names adhere to the following naming convention:

Linux and UNIX systems

`hostname_productcode_HEXtimestamp-nn.log`

where:

hostname

Host name of the computer where the monitoring component is running.

productcode

Two-character product code. For IBM Tivoli Monitoring: VIOS Premium Agent, the product code is `va`.

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

Table 3 contains locations, file names, and descriptions of trace logs that can help determine the source of problems with agents.

Table 3. Trace log files for troubleshooting agents

System where log is located	File name and path	Description
On the Tivoli Enterprise Monitoring Server	<ul style="list-style-type: none">• Windows: The file in the <i>install_dir\InstallITM</i> path• UNIX: The <i>candle_installation.log</i> file in the <i>install_dir/logs</i> path• Linux: The <i>candle_installation.log</i> file in the <i>install_dir/logs</i> 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 <i>Warehouse_Configuration.log</i> file is in the following location on Windows systems: <i>install_dir\InstallITM</i>	Provides details about the configuration of data warehousing for historical reporting.
On the Tivoli Enterprise Monitoring Server	The name of the RAS log file is as follows: <ul style="list-style-type: none">• Windows: <i>install_dir\logs\hostname_ms_timestamp-nn.log</i>• UNIX: <i>install_dir/logs/hostname_ms_timestamp-nn.log</i>• Linux: <i>install_dir/logs/hostname_ms_timestamp-nn.log</i> Note: File names for RAS1 logs include a hexadecimal time stamp. Also on UNIX systems, a log with a decimal time stamp is provided: <i>hostname_productcode_timestamp.log</i> and <i>hostname_productcode_timestamp.pidnnnn</i> in the <i>install_dir/logs</i> path, where <i>nnnnn</i> 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: <ul style="list-style-type: none">• Windows: <i>install_dir\logs\hostname_cq_HEXtimestamp-nn.log</i>• UNIX: <i>install_dir/logs/hostname_cq_HEXtimestamp-nn.log</i>• Linux: <i>install_dir/logs/hostname_cq_HEXtimestamp-nn.log</i> Note: File names for RAS1 logs include a hexadecimal time stamp. Also on UNIX systems, a log with a decimal time stamp is provided: <i>hostname_productcode_timestamp.log</i> and <i>hostname_productcode_timestamp.pidnnnn</i> in the <i>install_dir/logs</i> path, where <i>nnnnn</i> is the process ID number.	Traces activity on the portal server.

Table 3. Trace log files for troubleshooting agents (continued)

System where log is located	File name and path	Description
On the Tivoli Enterprise Portal Server	The teps_odbc.log file is located in the following path: <ul style="list-style-type: none"> • Windows: <i>install_dir</i>\InstallITM • UNIX: <i>install_dir</i>/logs • Linux: <i>install_dir</i>/logs 	When you enable historical reporting, this log file traces the status of the warehouse proxy agent.
On the computer that hosts the monitoring agent	The RAS1 log files are as follows: <ul style="list-style-type: none"> • UNIX: <i>hostname_va_instance_name_kvaagent_HEXtimestamp-nn.log</i> in the <i>install_dir</i>/logs directory <p>These logs are in the following directories:</p> <ul style="list-style-type: none"> • UNIX: <i>install_dir</i>/logs 	Traces activity of the monitoring agent.
On the computer that hosts the monitoring agent	The agent operations log files are as follows: <p><i>instance_hostname_VA.LG0</i> is the current log created when the agent was started.</p> <p><i>instance_hostname_VA.LG1</i> is the backup of the previous log.</p> <p>These logs are in the following directory depending on the operating system that you are using:</p> <ul style="list-style-type: none"> • UNIX: <i>install_dir</i>/logs 	Shows whether the agent could connect to the monitoring server. Shows which situations are started and stopped, and shows other events while the agent is running. A new version of this file is generated every time the agent is restarted. <p>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:</p> <ul style="list-style-type: none"> • Status of connectivity with the monitoring server • Situations that were running • The success or failure status of Take Action commands
On the computer that hosts the monitoring agent	The Take Action command log files are as follows: <ul style="list-style-type: none"> • <i>host_va_takeactioncommand.log</i> <p>The logs are in the following directories:</p> <ul style="list-style-type: none"> • UNIX: <i>install_dir</i>/logs 	Traces activity each time a Take Action command runs. For example, when a hypothetical start_command Take Action command runs, IBM Tivoli Monitoring generates a <i>start_command.log</i> file.
<p>Definitions of variables:</p> <p><i>timestamp</i> is time stamp whose format includes year (y), month (m), day (d), hour (h), and minute (m), as follows: yyyymmdd hhmm</p> <p><i>HEXtimestamp</i> is a hexadecimal representation of the time at which the process was started.</p> <p><i>install_dir</i> represents the directory path where you installed the IBM Tivoli Monitoring component. <i>install_dir</i> can represent a path on the computer that hosts the monitoring system, the monitoring agent, or the portal.</p> <p><i>instance</i> refers to the name of the database instance that you are monitoring.</p> <p><i>instance_name</i> refers to the name of the agent instance.</p> <p><i>hostname</i> refers to the name of the computer on which the IBM Tivoli Monitoring component runs.</p> <p><i>nn</i> represents the circular sequence in which logs are rotated. Ranges from 1 - 5, by default. But, the first is always retained because it includes configuration parameters.</p> <p><i>productcode</i> specifies the product code, for example, um for Universal Agent or nt for Windows.</p>		

See the *IBM Tivoli Monitoring Installation and Setup Guide* for more information about the complete set of trace logs that are maintained on the monitoring server.

Examples: using trace logs

IBM Software Support applies specialized knowledge to analyze trace logs to determine the source of problems. You can open trace logs in a text editor to learn some basic facts about your IBM Tivoli Monitoring environment. 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}kdc10cl.c,105,"KDC10_ClientLookup") status=1c020006,
"location server unavailable", ncs/KDC1_STC_SERVER_UNAVAILABLE
(Thursday, August 11, 2005, 08:21:35-{94C}kraarreg.cpp,1157,"LookupProxy") Unable to connect to
broker at ip.pipe:: status=0, "success", ncs/KDC1_STC_OK
(Thursday, August 11, 2005, 08:21:35-{94C}kraarreg.cpp,1402,"FindProxyUsingLocalLookup") Unable
to find running CMS on CT_CMSLIST <IP.PIPE:#server1a>
```

Example two

The following excerpts from the trace log *for the monitoring server* show the status of an agent, identified here as "Remote node." The name of the computer where the agent is running is **SERVER5B**:

```
(42C039F9.0000-6A4:kpxreqhb.cpp,649,"HeartbeatInserter") Remote node SERVER5B:VA is ON-LINE.
```

. . .

```
(42C3079B.0000-6A4:kpxreqhb.cpp,644,"HeartbeatInserter") Remote node SERVER5B:VA is OFF-LINE.
```

Key points regarding the preceding excerpt:

- The monitoring server appends the **VA** product code to the server name to form a unique name (SERVER5B:VA) for this instance of the VIOS Premium agent. By using this unique name, you can distinguish multiple monitoring products that might be running on **SERVER5B**.
- The log shows when the agent started (ON-LINE) and later stopped (OFF-LINE) in the environment.
- For the sake of brevity, an ellipsis (...) represents the series of trace log entries that were generated while the agent was running.
- Between the ON-LINE and OFF-LINE log entries, the agent was communicating with the monitoring server.
- The ON-LINE and OFF-LINE log entries are always available in the trace log. All trace levels that are described in "Setting RAS trace parameters" on page 306 provide these entries.

On Windows systems, you can use the following alternate method to view trace logs:

1. In the Windows **Start** menu, click **Program Files > IBM Tivoli Monitoring > Manage Tivoli Enterprise Monitoring Services**. The Manage Tivoli Enterprise Monitoring Services window is displayed.
2. Right-click a component and click **Advanced > View Trace Log** in the menu. For example, if you want to view the trace log of the VIOS Premium agent, right-click the name of that agent in the window. You can also use the viewer to access remote logs.

Note: The viewer converts time stamps in the logs to a format that is easier to read.

Setting RAS trace parameters

Objective

Pinpoint a problem by setting detailed tracing of individual components of the monitoring agent and modules.

Background Information

The VIOS Premium agent uses RAS1 tracing and generates the logs described in Table 3 on page 303. The default RAS1 trace level is ERROR.

Before you begin

See "Overview of log file management" on page 302 to ensure that you understand log rolling and can reference the correct log files when you manage log file generation.

After you finish

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 303 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.

Procedure

You can also manually edit the RAS1 trace logging parameters using this method:

1. Open the trace options file:

Windows: *install_dir\tmaitm6\KVAENV*

UNIX: *install_dir/config/va.ini*

2. Edit the line that begins with **KBB_RAS1=** to set trace logging preferences. For example, if you want detailed trace logging, set the Maximum Tracing option: **KBB_RAS1=ERROR (UNIT:kqz ALL) (UNIT:kra ALL)**
3. Edit the line that begins with **KBB_RAS1_LOG=** to manage the generation of log files:
 - **MAXFILES:** The total number of files that are to be kept for all startups of a given program. When this value is exceeded, the oldest log files are discarded. The default value is 9.
 - **LIMIT:** The maximum size, in megabytes (MB) of a RAS1 log file. The default value is 5.
 - IBM Software Support might guide you to modify the following parameters:
 - **COUNT:** The number of log files to keep in the rolling cycle of one program startup. The default is 3.
 - **PRESERVE:** The number of files that are not to be reused in the rolling cycle of one program startup. The default value is 1.

Notes®: 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.

Problems and workarounds

The following sections provide symptoms and workarounds for problems that might occur with the VIOS Premium agent:

- “Installation and configuration troubleshooting” on page 307
- “Remote deployment troubleshooting” on page 309
- “Agent troubleshooting” on page 309
- “Workspace troubleshooting” on page 312
- “Situation troubleshooting” on page 314
- “Take Action commands troubleshooting” on page 317

Note: You can resolve some problems by ensuring that your system matches the system requirements listed in Chapter 2, “Requirements and agent-specific installation and configuration information for the monitoring agent,” on page 5.

This Troubleshooting chapter provides agent-specific troubleshooting information. See the *IBM Tivoli Monitoring Troubleshooting Guide* for general troubleshooting information.

Installation and configuration troubleshooting

This section provides tables that show solutions for installation, configuration, and uninstallation problems.

Table 4. Problems and solutions for installation and configuration

Problem	Solution
<p>(UNIX only) During a command-line installation, you choose to install a component that is currently installed, and you see the following warning:</p> <pre>WARNING - you are about to install the SAME version of "component_name"</pre> <p>where <i>component_name</i> is the name of the component that you are attempting to install.</p> <p>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.</p>	<p>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.</p>

Table 4. Problems and solutions for installation and configuration (continued)

Problem	Solution
A message similar to "Unable to find running CMS on CT_CMSLIST" in the log file is displayed.	<p>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:</p> <ul style="list-style-type: none"> • Do multiple network interface cards (NICs) exist on the system? • If multiple NICs exist on the system, find out which one is configured for the monitoring server. Ensure that you specify the correct host name and port settings for communication in the IBM Tivoli Monitoring environment.
The system is experiencing high CPU usage.	<p>Agent process: View the memory usage of the KVACMA process. If CPU usage seems to be excessive, recycle the monitoring agent.</p> <p>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.</p>
The artwork in the installation panels in the Japanese environment are missing, and some panels have a truncation problem.	There is no workaround at this time.
In the Install Prerequisites panel during agent installation, the following extra string displays in Russian: \r	There is no workaround at this time.
In the Select Features panel during agent installation, the Description of each feature is in English in an NLV environment.	There is no workaround at this time.
<p>After starting the agent, the following error messages are displayed on the console:</p> <pre>Password: <hmcuser>@<HMC>'s password: <hmcuser>@<HMC>'s password: <hmcuser>@<HMC>'s password:</pre>	ssh is not set up correctly between the agent and the HMC computer. Make sure that ssh is set up between the "root" user on the agent LPAR and the <i>hmcuser</i> on the HMC computer.
When the agent is configured using the Linux command-line interface, subnode names are of the form VM:DEFAULT-hostname:ESX, instead of VM:instancename-hostname:ESX.	When configuring with the Linux command-line interface, you have the option of skipping the Data Provider configuration section. Skipping this section causes the instance name to be set incorrectly. You must configure settings in the Data Provider configuration section (even with defaults) in order for the instance name to be set correctly.
<p>Warning message during application support install</p> <pre>KCIIN1421W WARNING - unable to copy eclipse agent plugin file</pre> <pre>\$CANDLEHOME/\$ITM_BINARCH/cw/iehs/kva/eclipse/ plugins/com.ibm.kva.doc</pre>	Manually rename or delete the agent plug-in file and run the application support install again.

Table 4. Problems and solutions for installation and configuration (continued)

Problem	Solution
Cannot find the agent support files for the Linux operating system.	Support files for all IBM Tivoli Monitoring supported operating systems reside on the support file image. Support files for the AIX operating system also reside on the agent image.

Table 5. General problems and solutions for uninstallation

Problem	Solution
The way to remove inactive managed systems (systems whose status is OFFLINE) from the Navigator tree in the portal is not obvious.	Use the following steps to remove, but not uninstall, an offline managed system from the Navigator tree: <ol style="list-style-type: none"> 1. Click the Enterprise icon in the Navigator tree. 2. Right-click, and then click Workspace > Managed System Status. 3. Right-click the offline managed system, and select Clear offline entry. <p>To uninstall the monitoring agent, use the procedure described in the <i>IBM Tivoli Monitoring Installation and Setup Guide</i>.</p>
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.cmptag</i> from the \$CANDLEHOME/properties/version/ directory.

Remote deployment troubleshooting

Table 6 lists problems that might occur with remote deployment. This section provides information about troubleshooting remote deployment of the monitoring agent. See the *IBM Tivoli Monitoring Troubleshooting Guide* for general troubleshooting information.

This section describes problems and solutions for remote deployment and removal of agent software using Agent Remote Deploy process.

Table 6. Remote deployment problems and solutions

Problem	Solution
While you are using the remote deployment feature to install the VIOS Premium agent, an empty command window is displayed on the target computer. This problem occurs when the target of remote deployment is a Windows computer. (See the <i>IBM Tivoli Monitoring Installation and Setup Guide</i> for more information about the remote deployment feature.)	Do not close or modify this window. It is part of the installation process and is dismissed automatically.
The removal of a monitoring agent fails when you use the remote removal process in the Tivoli Enterprise Portal desktop or browser.	This problem might occur when you attempt the remote removal process immediately after you have restarted 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

This section lists problems that might occur with agents.

This chapter provides agent-specific troubleshooting information. See the *IBM Tivoli Monitoring Troubleshooting Guide* for general troubleshooting information.

Table 7. Agent problems and solutions

Problem	Solution
Log data accumulates too rapidly.	Check the RAS trace option settings, which are described in “Setting RAS trace parameters” on page 306. The trace options settings that you can set on the KBB_RAS1= and KDC_DEBUG= lines potentially generate large amounts of data.
Prompt for password is displayed when the agent is started.	Ensure that non-prompted SSH access to the HMC is configured properly with the SSH keys.
No data is displayed in the Tivoli Enterprise Portal for all attribute groups.	Inspect the data in the Performance Object Status attribute group and restart the agent.
No data is displayed in the Tivoli Enterprise Portal for the Network Mappings and Storage Mappings attribute groups.	Ensure that non-prompted SSH access to the HMC is configured properly with the SSH keys. If SSH is properly configured and attempts to SSH into the HMC result in a "ssh_exchange_identification: Connection closed by remote host" error message then reboot the HMC.
Empty workspace views are displayed in the Tivoli Enterprise Portal.	<p>IBM Tivoli Monitoring uses timeout settings during agent metric gathering as a way to avoid prolonged waits for data at the Tivoli Enterprise Portal client. When an agent takes longer than the portal timeout period to provide data, the requesting portal workspaces show empty views.</p> <p>The IBM Tivoli Monitoring System p agents implement metric caching to alleviate running into these timeouts when metric data acquisition is taking a long time. When data is retrieved by the agent, it caches the attribute group returned to the portal. Metrics gathered within the portal timeout period are readily displayed on the console. Those attribute groups taking longer, are displayed from the cache while the agent continues to collect data in the background for the original request.</p> <p>Because of the way some metrics are gathered, certain metrics take longer than the default timeout and fail to make it to the cache before the portal timeout expires.</p> <p>Typically, this problem is caused by network traffic, SSH communication overhead, HMC IPC communication layer, Logical Volume Manager communication layer and possible other circumstances. As a result, the portal displays empty workspace views for these attribute groups. The workspace only shows data once the data has been cached.</p> <p>The following attribute groups are affected by these behaviors:</p> <ul style="list-style-type: none"> • Storage Mappings • Network Mappings • Network Adapter Totals • Network Adapter Rates

Table 7. Agent problems and solutions (continued)

Problem	Solution
CPU, network interface, and Workload Manager (WLM) metrics are not dynamically updated in the CPU Detail, Workload Manager and Internet Protocol Detail attribute groups, if these resources are added or removed after the VIOS Premium agent is started.	<p>Metrics for these attribute groups are taken from the System Performance Measurement Interface (SPMI) shared library. After the SPMI is initialized, it creates a list of CPUs, network interfaces, and WLM classes configured. The SPMI library does not reinitialize these lists until one of the following occurs:</p> <ol style="list-style-type: none"> 1. The system is rebooted. 2. The number of consumers using the library goes to zero, and programs that were using the library end their SPMI connection gracefully. 3. A manual recycling of the SPMI shared library is performed. <p>Recycling of the IBM Tivoli Monitoring agent might not solve the problem if there are other SPMI consumers. A consumer is any program that has established a connection with the SPMI to acquire data. It is also possible to have a program that is a DDS (Dynamic Data Supplier) that provides data to the SPMI. Some examples of both are: topas, xmtopas, xmservd, xmtrend, and the IBM Tivoli Monitoring: AIX Premium Agent.</p> <p>To recycle the SPMI without rebooting:</p> <ol style="list-style-type: none"> 1. All data SPMI consumers and DDSs must end. 2. Ensure that there are no Shared Memory IDs remaining that start with a key of 0x78. 3. If so, run ipcrm -m id. 4. Run slibclean.

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.	<p>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.</p> <p>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).</p> <p>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'.)</p> <p>The physical port allocation method is defined as $(BASE_PORT + 4096 * N)$, where $N=0$ for a Tivoli Enterprise Monitoring Server process and $N=\{1, 2, \dots, 15\}$ for another type of monitoring server process. Two architectural limits result as a consequence of the physical port allocation method:</p> <ul style="list-style-type: none"> • 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. <p>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, there is one Tivoli Enterprise Monitoring Server hub per monitoring enterprise, so this architecture limit has been simplified to one Tivoli Enterprise Monitoring Server per system image.</p> <p>No more than 15 IP.PIPE processes or address spaces can be active on a single system image. With the first limit expressed above, this second limitation refers specifically to Tivoli Enterprise Monitoring Agent processes: no more than 15 agents per system image.</p> <p>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). There is no limitation to the number of ephemeral IP.PIPE connections per system image. If ephemeral endpoints are used, the Warehouse Proxy Agent is accessible from the Tivoli Enterprise Monitoring Server associated with the agents 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.)</p>

Workspace troubleshooting

Table 8 on page 313 shows problems that might occur with workspaces. This chapter provides agent-specific troubleshooting information. See the *IBM Tivoli Monitoring Troubleshooting Guide* for general troubleshooting information.

Table 8. Workspace problems and solutions

Problem	Solution
The process application components are available, but the Availability status shows PROCESS_DATA_NOT_AVAILABLE.	<p>This problem occurs because the PerfProc performance object is disabled. When this condition exists, IBM Tivoli Monitoring cannot collect performance data for this process. Perform the following steps to confirm that this problem exists and resolve it:</p> <ol style="list-style-type: none"> 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 located above the right pane. The Add Counters window is displayed. 4. Look for Process in the Performance object menu. 5. Perform one of the following actions: <ul style="list-style-type: none"> • 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 following website to enable the PerfProc performance object: http://blogs.technet.com/mscom/archive/2008/12/18/the-mystery-of-the-missing-process-performance-counter-in-perfmon.aspx The Process performance object becomes visible in the Performance object menu of the Add Counters windows, and IBM Tivoli Monitoring is able to detect Availability data. 6. Restart the monitoring agent.
The name of the attribute does not display in a bar chart or graph view.	<p>When a chart or graph view that includes the attribute is scaled to a small size, a blank space is displayed instead of a truncated name. To see the name of the attribute, expand the view of the chart until there is sufficient space to display all characters of the attribute name.</p>
You start collection of historical data but the data cannot be seen.	<p>Use the following managing options for historical data collection:</p> <ul style="list-style-type: none"> • Basic historical data collection populates the Warehouse with raw data. This type of data collection is turned off by default. See the <i>IBM Tivoli Monitoring Administrator's Guide</i> for information about managing this feature including how to set the interval at which data is collected. By setting a more frequent interval for data collection, you reduce the load on the system incurred every time data is uploaded. • You use the Summarization and Pruning 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. See the <i>IBM Tivoli Monitoring Administrator's Guide</i> to learn how to modify the default collection settings.

Table 8. Workspace problems and solutions (continued)

Problem	Solution
Historical data collection is unavailable because of incorrect queries in the Tivoli Enterprise Portal.	<p>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.</p> <p>Even if data collection has been started, you cannot use the time span feature if the query for the chart or table includes column functions or advanced query options (Sort By, Group By, First / Last).</p> <p>To ensure support of historical data collection, do not use the Sort By, Group By, or First/Last functions in your queries.</p> <p>See the <i>IBM Tivoli Monitoring Administrator's Guide</i> or the Tivoli Enterprise Portal online help for information about the Historical Data Collection function.</p>
When you use a long process name in the situation, the process name is truncated.	Truncation of process or service names for situations in the Availability table in the portal display is the expected behavior. 100 bytes is the maximum name length.
Regular (non-historical) monitoring data fails to be displayed.	Check the formation of the queries you use to gather data. For example, look for invalid SQL statements.
Navigator items and workspace titles are labeled with internal names such as Kxx:KXX0000 instead of the correct names (such as Disk), where XX and xx represent the two-character agent code.	<p>Ensure that application support has been added on the monitoring server, portal server, and portal client.</p> <p>For more information about installing application support, see "Installing and enabling application support" in the <i>IBM Tivoli Monitoring Installation and Setup Guide</i>.</p>

Situation troubleshooting

This section provides information about both general situation problems and problems with the configuration of situations. See the *IBM Tivoli Monitoring Troubleshooting Guide* for more information about troubleshooting for situations.

General situation problems

Table 9 lists general problems that might occur with situations.

Table 9. General situation problems and solutions

Problem	Solution
Monitoring activity requires too much disk space.	Check the RAS trace logging settings that are described in "Setting RAS trace parameters" on page 306. 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 223 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	<p>This formula is incorrect because situation predicates support only logical operators. Your formulas cannot have mathematical operators.</p> <p>Note: The Situation Editor provides alternatives to math operators. Regarding the example, you can select the % Memory Free attribute and avoid the need for math operators.</p>

Table 9. General situation problems and solutions (continued)

Problem	Solution
You want to change the appearance of situations when they are displayed in the navigation tree.	<ol style="list-style-type: none"> 1. Right-click an item in the navigation tree. 2. Click Situations in the menu. The Situation Editor window is displayed. 3. Select the situation that you want to modify. 4. Use the State menu in the lower right of the window to set the status and appearance of the Situation when it triggers. Note: The State setting is not related to severity settings in IBM 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.	<p>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 KXXENV file for the agent: CDP_NT_EVENT_LOG_CACHE_TIMEOUT=3600</p> <p>This variable determines how long events from the NT Event Log are kept.</p>
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	<p>There is a timeout 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 KXXENV file for the agent: CDP_NT_EVENT_LOG_CACHE_TIMEOUT=3600 This variable determines how long events from the NT Event Log are kept.</p>
If the Expert Advice for a situation contains a hyperlink to an external website (for example, a Microsoft TechNet website) and you click the hyperlink, the website opens in an external window. However, the external window stops responding.	The external window responds after you close the Preview window and Situation Editor window.
Situations that monitor missing processes indicate falsely that a process is missing. The situations mistakenly fire when the agent starts because the agent has registered attributes with the Tivoli Enterprise Monitoring Agent, and has received a request from a situation before the agent completes registration with the data provider.	Add the following value to the va.ini file, and then restart the agent: CDP_COLLECTION_DELAY=5

Problems with configuration of situations

Table 10 on page 316 lists problems that might occur with configuring situations.

This section provides information for troubleshooting for agents. Be sure to consult the *IBM Tivoli Monitoring Troubleshooting Guide* for more general troubleshooting information.

Table 10. Problems with configuring situations that you solve in the Situation Editor

Problem	Solution
<p>Note: To get started with the solutions in this section, perform these steps:</p> <ol style="list-style-type: none"> 1. Start the Tivoli Enterprise Portal. 2. Click Edit > Situation Editor. 3. In the navigation tree, choose the agent whose situation you want to modify. 4. Choose the situation in the list. The Situation Editor view is displayed. 	
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 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.	<p>Manually recycle the situation as follows:</p> <ol style="list-style-type: none"> 1. Right-click the situation and select Stop Situation. 2. Right-click the situation and select Start Situation. <p>Note: You can permanently avoid this problem by selecting the Run at Startup check box of the Situation Editor view for a specific situation.</p>
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 properly specified.	Check the logs, reports, and workspaces.
A situation fires on an unexpected managed object.	Confirm that you distributed and started the situation on the correct managed system.
The product did not distribute the situation to a managed system.	Click the Distribution tab and check the distribution settings for the situation.

Table 10. Problems with configuring situations that you solve in the Situation Editor (continued)

Problem	Solution
The situation does not fire.	<p>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.</p> <p>In the Formula tab, analyze predicates as follows:</p> <ol style="list-style-type: none"> Click the <i>fx</i> icon in the upper-right corner of the Formula area. The Show formula window is displayed. <ol style="list-style-type: none"> Confirm the following details in the Formula area at the top of the window: <ul style="list-style-type: none"> 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. (Optional) Select the Show detailed formula check box in the lower left of the window to see the original names of attributes in the application or operating system that you are monitoring. 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. <p>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.</p> <p>See the <i>IBM Tivoli Monitoring Troubleshooting Guide</i> for additional information about situations that do not fire.</p>

Table 11. Problems with configuration of situations that you solve in the Workspace area

Problem	Solution
Situation events are not displayed in the Events Console view of the workspace.	<p>Associate the situation with a Navigator item.</p> <p>Note: The situation does not need to be displayed in the workspace. It is sufficient that the situation is associated with any Navigator item.</p>
You do not have access to a situation.	<p>Note: You must have administrator privileges to perform these steps.</p> <ol style="list-style-type: none"> Click Edit > Administer Users to access the Administer Users window. 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.
A managed system seems to be offline.	<ol style="list-style-type: none"> 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. If a system is offline, check network connectivity and the status of the specific system or application.

Take Action commands troubleshooting

Table 12 on page 318 lists general problems that might occur with Take Action commands. When each Take Action command runs it generates the log file listed in Table 3 on page 303. This chapter provides agent-specific troubleshooting information.

See the *IBM Tivoli Monitoring Troubleshooting Guide* for general troubleshooting information.

Table 12. 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 314. If the Take Action command fails, see <i>IBM Tivoli Monitoring Troubleshooting Guide</i> for general information about troubleshooting Take Action commands.

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 sites contain troubleshooting information:

- Go to the IBM Software Support site at <http://www.ibm.com/support/entry/portal/software> and follow the instructions.
- Go to the IBM Tivoli Distributed Monitoring and Application Management Wiki at <http://www.lotus.com/ldd/tivmonitorwiki.nsf>. Feel free to contribute to this wiki.

IBM Support Assistant

The IBM Support Assistant (ISA) is a free local software serviceability workbench that helps you resolve questions and problems with IBM software products. The ISA provides quick access to support-related information and serviceability tools for problem determination. To install the ISA software, go to <http://www.ibm.com/software/support/isa>.

Appendix A. IBM Tivoli Enterprise Console event mapping

Each event class corresponds to an attribute group in the IBM Tivoli Enterprise Console. For a description of the event slots for each event class, see the lists in this appendix. For more information about mapping attribute groups to event classes, see the *IBM Tivoli Monitoring Administrator's Guide*.

Generic event mapping provides useful event class and attribute information for situations that do not have specific event mapping defined. BAROC files are found on the Tivoli Enterprise Monitoring Server in the installation directory in TECLIB (that is, *install_dir/cms/TECLIB* for Windows systems and *install_dir/tables/TEMS_hostname/TECLIB* for UNIX systems). IBM Tivoli Enterprise Console event synchronization provides a collection of ready-to-use rule sets that you can deploy with minimal configuration. Be sure to install IBM Tivoli Enterprise Console event synchronization to access the correct Sentry.baroc, which is automatically included during base configuration of IBM Tivoli Enterprise Console rules if you indicate that you want to use an existing rule base. See the *IBM Tivoli Monitoring Installation and Setup Guide* for details.

The Tivoli Enterprise Console Event Definition Generator (TEDGEN) tool provides an alternate method for generating a new XML file for EIF Slot Customization. See "Updating the XML used by the MCS Attribute Service" in the *IBM Tivoli Monitoring Version 6.2.2 Fix Pack 2 Administrator's Guide* for information about the TEDGEN tool.

Each of the event classes is a child of KVA_Base and is defined in the kva.baroc (version 06.22.02) file. The KVA_Base event class can be used for generic rules processing for any event from the IBM Tivoli Monitoring: VIOS Premium Agent.

For events generated by situations in the Active Users attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_ACTIVE USERS class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- user_name: STRING
- tty: STRING
- login_date_time: STRING
- kva_hostname: STRING
- idle_time: STRING
- jcpu: STRING
- pcpu: STRING
- current_process: STRING

For events generated by situations in the AMS Pool attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_AMS POOL class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- ams_mode: INTEGER

- ams_mode_enum: STRING
- ams_pool_id: INTEGER
- ams_pool_id_enum: STRING
- ams_pool_size: REAL
- ams_pool_size_enum: STRING
- ams_physical_mem: REAL
- ams_physical_mem_enum: STRING
- ams_mem_loaned: INTEGER
- ams_mem_loaned_enum: STRING
- ams_memory_entitlement: INTEGER
- ams_memory_entitlement_enum: STRING
- ams_memory_ent_inuse: REAL
- ams_memory_ent_inuse_enum: STRING
- hypervisor_page_ins: REAL
- hypervisor_page_ins_enum: STRING
- hypervisor_page_ins_time: REAL
- hypervisor_page_ins_time_enum: STRING

For events generated by situations in the Capabilities attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_CAPABILITIES class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- type: STRING
- kva_status: STRING

For events generated by situations in the CPU Detail attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_CPU_DETAIL class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- cpu_number: STRING
- user_cpu_pct: INTEGER
- user_cpu_pct_enum: STRING
- system_cpu_pct: INTEGER
- system_cpu_pct_enum: STRING
- io_wait_cpu_pct: INTEGER
- io_wait_cpu_pct_enum: STRING
- idle_cpu_pct: INTEGER
- idle_cpu_pct_enum: STRING
- context_switches_per_sec: INTEGER
- context_switches_per_sec_enum: STRING
- syscalls_per_sec: INTEGER
- syscalls_per_sec_enum: STRING
- reads_per_sec: INTEGER
- reads_per_sec_enum: STRING

- writes_per_sec: INTEGER
- writes_per_sec_enum: STRING
- forks_per_sec: INTEGER
- forks_per_sec_enum: STRING
- execs_per_sec: INTEGER
- execs_per_sec_enum: STRING
- read_char_per_sec: INTEGER
- read_char_per_sec_enum: STRING
- write_char_per_sec: INTEGER
- write_char_per_sec_enum: STRING
- inode_lookup_per_sec: INTEGER
- inode_lookup_per_sec_enum: STRING
- path_name_lookup_per_sec: INTEGER
- path_name_lookup_per_sec_enum: STRING
- dir_blk_scans_per_sec: INTEGER
- dir_blk_scans_per_sec_enum: STRING
- minor_page_faults: INTEGER
- minor_page_faults_enum: STRING
- major_page_faults: INTEGER
- major_page_faults_enum: STRING
- interrupts: INTEGER
- interrupts_enum: STRING
- involuntary_context_switches: INTEGER
- involuntary_context_switches_enum: STRING
- run_queue: INTEGER
- run_queue_enum: STRING
- logical_processor_affinity: INTEGER
- logical_processor_affinity_enum: STRING
- message_ops: INTEGER
- message_ops_enum: STRING
- semaphore_ops: INTEGER
- semaphore_ops_enum: STRING
- blocks_read: INTEGER
- blocks_read_enum: STRING
- blocks_write: INTEGER
- blocks_write_enum: STRING
- logical_read_requests: INTEGER
- logical_read_requests_enum: STRING
- logical_write_requests: INTEGER
- logical_write_requests_enum: STRING
- physical_reads: INTEGER
- physical_reads_enum: STRING
- physical_writes: INTEGER
- physical_writes_enum: STRING
- logical_context_switches: INTEGER

- logical_context_switches_enum: STRING
- physical_consumption: REAL
- physical_consumption_enum: STRING

For events generated by situations in the CPU Summary attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_CPU SUMMARY class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- system_software_version: STRING
- number_of_cpus: INTEGER
- number_of_cpus_enum: STRING
- user_cpu_pct: INTEGER
- user_cpu_pct_enum: STRING
- system_cpu_pct: INTEGER
- system_cpu_pct_enum: STRING
- io_wait_cpu_pct: INTEGER
- io_wait_cpu_pct_enum: STRING
- idle_cpu_pct: INTEGER
- idle_cpu_pct_enum: STRING
- physical_consumption: REAL
- physical_consumption_enum: STRING
- donation_enablement: INTEGER
- donation_enablement_enum: STRING
- donated_idle_cycles_pct: REAL
- donated_idle_cycles_pct_enum: STRING
- donated_busy_cycles_pct: REAL
- donated_busy_cycles_pct_enum: STRING
- stolen_idle_cycles_pct: REAL
- stolen_idle_cycles_pct_enum: STRING
- stolen_busy_cycles_pct: REAL
- stolen_busy_cycles_pct_enum: STRING
- hypervisor_calls: INTEGER
- hypervisor_calls_enum: STRING
- time_spent_in_hypervisor_pct: REAL
- time_spent_in_hypervisor_pct_enum: STRING
- donating_lpars: INTEGER
- donating_lpars_enum: STRING
- average_operating_frequency_ghz: REAL
- average_operating_frequency_ghz_enum: STRING
- average_operating_frequency_pct: INTEGER
- average_operating_frequency_pct_enum: STRING
- actual_average_physical_cpu_user: REAL
- actual_average_physical_cpu_user_enum: STRING
- actual_average_physical_cpu_system: REAL
- actual_average_physical_cpu_system_enum: STRING

- actual_average_physical_cpu_idle: REAL
- actual_average_physical_cpu_idle_enum: STRING
- actual_average_physical_cpu_wait: REAL
- actual_average_physical_cpu_wait_enum: STRING
- normalized_average_physical_cpu_user: REAL
- normalized_average_physical_cpu_user_enum: STRING
- normalized_average_physical_cpu_system: REAL
- normalized_average_physical_cpu_system_enum: STRING
- normalized_average_physical_cpu_idle: REAL
- normalized_average_physical_cpu_idle_enum: STRING
- normalized_average_physical_cpu_wait: REAL
- normalized_average_physical_cpu_wait_enum: STRING

For events generated by situations in the Defined Users attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_DEFINED_USERS class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- user_name: STRING
- roles: STRING
- account_locked: STRING
- expires: STRING
- loginretries: INTEGER
- loginretries_enum: STRING

For events generated by situations in the Devices attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_DEVICES class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- name: STRING
- parent: STRING
- type: STRING
- state: STRING
- kva_class: STRING

For events generated by situations in the Disks attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_DISKS class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- name: STRING
- parent: STRING
- type: STRING
- active_disk_pct: REAL
- active_disk_pct_enum: STRING
- transfers_bytes_per_sec: INTEGER

- transfers_bytes_per_sec_enum: STRING
- transfers_kb_per_sec: INTEGER
- transfers_kb_per_sec_enum: STRING
- transfers_per_sec: INTEGER
- transfers_per_sec_enum: STRING
- read_kb_per_sec: INTEGER
- read_kb_per_sec_enum: STRING
- written_kb_per_sec: INTEGER
- written_kb_per_sec_enum: STRING
- read_transfers_per_sec: INTEGER
- read_transfers_per_sec_enum: STRING
- avg_read_transfer_ms: REAL
- avg_read_transfer_ms_enum: STRING
- min_read_service_ms: REAL
- min_read_service_ms_enum: STRING
- max_read_service_ms: REAL
- max_read_service_ms_enum: STRING
- read_timeouts_per_sec: INTEGER
- read_timeouts_per_sec_enum: STRING
- failed_read_per_sec: INTEGER
- failed_read_per_sec_enum: STRING
- write_transfers_per_sec: INTEGER
- write_transfers_per_sec_enum: STRING
- avg_write_transfer_ms: REAL
- avg_write_transfer_ms_enum: STRING
- min_write_service_ms: REAL
- min_write_service_ms_enum: STRING
- max_write_service_ms: REAL
- max_write_service_ms_enum: STRING
- write_timeout_per_sec: REAL
- write_timeout_per_sec_enum: STRING
- failed_writes_per_sec: INTEGER
- failed_writes_per_sec_enum: STRING
- avg_request_in_waitq_ms: REAL
- avg_request_in_waitq_ms_enum: STRING
- min_request_in_waitq_ms: REAL
- min_request_in_waitq_ms_enum: STRING
- max_request_in_waitq_ms: REAL
- max_request_in_waitq_ms_enum: STRING
- avg_waitq_size: INTEGER
- avg_waitq_size_enum: STRING
- avg_serviceq_size: INTEGER
- avg_serviceq_size_enum: STRING
- serviceq_full_per_sec: INTEGER
- serviceq_full_per_sec_enum: STRING

For events generated by situations in the FC Stats attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_FC STATS class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- name: STRING
- port_speed_supported: INTEGER
- port_speed_supported_enum: STRING
- port_speed_running: INTEGER
- port_speed_running_enum: STRING
- seconds_since_last_reset: INTEGER
- seconds_since_last_reset_enum: STRING
- transmitted_frames: INTEGER
- transmitted_frames_enum: STRING
- received_frames: INTEGER
- received_frames_enum: STRING
- error_frames: INTEGER
- error_frames_enum: STRING
- dumped_frames: INTEGER
- dumped_frames_enum: STRING
- link_failure_count: INTEGER
- link_failure_count_enum: STRING
- loss_of_sync_count: INTEGER
- loss_of_sync_count_enum: STRING
- loss_of_signal: INTEGER
- loss_of_signal_enum: STRING
- primitive_seq_protocol_error_count: INTEGER
- primitive_seq_protocol_error_count_enum: STRING
- invalid_tx_word_count: INTEGER
- invalid_tx_word_count_enum: STRING
- invalid_crc_count: INTEGER
- invalid_crc_count_enum: STRING
- input_requests: INTEGER
- input_requests_enum: STRING
- output_requests: INTEGER
- output_requests_enum: STRING
- control_requests: INTEGER
- control_requests_enum: STRING
- input_bytes: INTEGER
- input_bytes_enum: STRING
- output_bytes: INTEGER
- output_bytes_enum: STRING
- input_requests_per_second: REAL
- input_requests_per_second_enum: STRING
- output_requests_per_second: REAL

- output_requests_per_second_enum: STRING
- control_requests_per_second: REAL
- control_requests_per_second_enum: STRING
- input_bytes_per_second: REAL
- input_bytes_per_second_enum: STRING
- output_bytes_per_second: REAL
- output_bytes_per_second_enum: STRING
- bandwidth_used_per_second: REAL
- bandwidth_used_per_second_enum: STRING
- world_wide_node_name: STRING
- world_wide_port_name: STRING

For events generated by situations in the File Systems attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_FILE SYSTEMS class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- name: STRING
- mount_point: STRING
- volume_group_name: STRING
- size_mb: INTEGER
- size_mb_enum: STRING
- free_mb: INTEGER
- free_mb_enum: STRING
- used_mb: INTEGER
- used_mb_enum: STRING
- free_pct: INTEGER
- free_pct_enum: STRING
- used_pct: INTEGER
- used_pct_enum: STRING

For events generated by situations in the Firewall attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_FIREWALL class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- interface: STRING
- local_port: INTEGER
- local_port_enum: STRING
- remote_port: INTEGER
- remote_port_enum: STRING
- service: STRING
- ip_address: STRING
- expiration_time: INTEGER
- expiration_time_enum: STRING

For events generated by situations in the Internet Protocol Detail attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_INTERNET PROTOCOL DETAIL class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- name: STRING
- packets_received_per_sec: INTEGER
- packets_received_per_sec_enum: STRING
- ioctet_received_kb_per_sec: INTEGER
- ioctet_received_kb_per_sec_enum: STRING
- input_errors_per_sec: INTEGER
- input_errors_per_sec_enum: STRING
- multicast_pkt_received_per_sec: INTEGER
- multicast_pkt_received_per_sec_enum: STRING
- input_packets_dropped_per_sec: INTEGER
- input_packets_dropped_per_sec_enum: STRING
- packets_transmitted_per_sec: INTEGER
- packets_transmitted_per_sec_enum: STRING
- ioctet_transmitted_kb_per_sec: INTEGER
- ioctet_transmitted_kb_per_sec_enum: STRING
- output_errors_per_sec: INTEGER
- output_errors_per_sec_enum: STRING
- multicast_pkt_transmitted_per_sec: INTEGER
- multicast_pkt_transmitted_per_sec_enum: STRING

For events generated by situations in the Internet Protocol Summary attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_INTERNET PROTOCOL SUMMARY class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- packets_received_per_sec: INTEGER
- packets_received_per_sec_enum: STRING
- frag_received_per_sec: INTEGER
- frag_received_per_sec_enum: STRING
- packets_forwarded_per_sec: INTEGER
- packets_forwarded_per_sec_enum: STRING
- received_datagrams_per_sec: INTEGER
- received_datagrams_per_sec_enum: STRING
- transmitted_datagrams_per_sec: INTEGER
- transmitted_datagrams_per_sec_enum: STRING
- total_packets_reassembled_per_sec: INTEGER
- total_packets_reassembled_per_sec_enum: STRING
- frag_output_packets_per_sec: INTEGER
- frag_output_packets_per_sec_enum: STRING

For events generated by situations in the Logical Partition attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_LOGICAL_PARTITION class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- user_cpu_pct: INTEGER
- user_cpu_pct_enum: STRING
- system_cpu_pct: INTEGER
- system_cpu_pct_enum: STRING
- io_wait_cpu_pct: INTEGER
- io_wait_cpu_pct_enum: STRING
- idle_cpu_pct: INTEGER
- idle_cpu_pct_enum: STRING
- entitlement: REAL
- entitlement_enum: STRING
- total_used_pct: INTEGER
- total_used_pct_enum: STRING
- entitlement_used_pct: INTEGER
- entitlement_used_pct_enum: STRING
- lpar_number: INTEGER
- lpar_number_enum: STRING
- shared_mode: STRING
- capped_mode: STRING
- smt_mode: STRING
- number_of_physical_cpus: INTEGER
- number_of_physical_cpus_enum: STRING
- number_of_virtual_cpus: INTEGER
- number_of_virtual_cpus_enum: STRING
- number_of_logical_cpus: INTEGER
- number_of_logical_cpus_enum: STRING
- available_cpus_in_pool: INTEGER
- available_cpus_in_pool_enum: STRING
- number_of_physical_cpus_in_shared_pool: INTEGER
- number_of_physical_cpus_in_shared_pool_enum: STRING
- busy_pct: INTEGER
- busy_pct_enum: STRING
- phys_busy_pct: INTEGER
- phys_busy_pct_enum: STRING
- virt_context_cpu_switches_per_sec: INTEGER
- virt_context_cpu_switches_per_sec_enum: STRING
- max_memory: INTEGER
- max_memory_enum: STRING
- min_memory: INTEGER
- min_memory_enum: STRING
- max_phys_cpus: INTEGER

- max_phys_cpus_enum: STRING
- min_virt_cpus: INTEGER
- min_virt_cpus_enum: STRING
- max_virt_cpus: INTEGER
- max_virt_cpus_enum: STRING
- min_cpu_capacity: INTEGER
- min_cpu_capacity_enum: STRING
- max_cpu_capacity: INTEGER
- max_cpu_capacity_enum: STRING
- cpu_capacity_increment: INTEGER
- cpu_capacity_increment_enum: STRING
- online_mem: INTEGER
- online_mem_enum: STRING
- max_dispatch_latency: INTEGER
- max_dispatch_latency_enum: STRING
- unallocated_cpu_in_pool: INTEGER
- unallocated_cpu_in_pool_enum: STRING
- cpu_entitlement: INTEGER
- cpu_entitlement_enum: STRING
- capacity_weight: INTEGER
- capacity_weight_enum: STRING
- min_req_virt_cpu: INTEGER
- min_req_virt_cpu_enum: STRING
- phantom_interrupts: INTEGER
- phantom_interrupts_enum: STRING
- entitlement_pct: INTEGER
- entitlement_pct_enum: STRING
- num_hypervisor_calls_per_sec: INTEGER
- num_hypervisor_calls_per_sec_enum: STRING
- time_in_hypervisor_pct: INTEGER
- time_in_hypervisor_pct_enum: STRING
- machine_id: STRING
- uptime: STRING
- kva_hostname: STRING
- physical_cpu_units_used: REAL
- physical_cpu_units_used_enum: STRING
- available_cpu_units_in_pool: REAL
- available_cpu_units_in_pool_enum: STRING
- physical_cpu_size_of_shared_pool: REAL
- physical_cpu_size_of_shared_pool_enum: STRING
- last_machine_id: STRING
- max_cpu_cap_used_pct: REAL
- max_cpu_cap_used_pct_enum: STRING
- poolid: INTEGER
- poolid_enum: STRING

- pool_entitlement: REAL
- pool_entitlement_enum: STRING
- maximum_pool_capacity: REAL
- maximum_pool_capacity_enum: STRING
- smt_threads: INTEGER
- smt_threads_enum: STRING
- entitlement_2: REAL
- entitlement_2_enum: STRING
- old_machine_id: STRING

For events generated by situations in the Logical Volumes attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_LOGICAL VOLUMES class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- name: STRING
- state: STRING
- volume_group_name: STRING
- type: STRING
- mount_point: STRING
- size_mb: INTEGER
- size_mb_enum: STRING

For events generated by situations in the MPIO Attributes attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_MPIO ATTRIBUTES class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- device_name: STRING
- attribute: STRING
- kva_value: STRING
- description: STRING
- user_settable: STRING

For events generated by situations in the MPIO Status attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_MPIO STATUS class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- device_name: STRING
- parent: STRING
- path_status: STRING
- kva_status: STRING
- connection: STRING

For events generated by situations in the Network Adapters Rates attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_NETWORK ADAPTERS RATES class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- name: STRING
- parent: STRING
- type: STRING
- bytes_sent_per_sec: INTEGER
- bytes_sent_per_sec_enum: STRING
- pkts_sent_per_sec: INTEGER
- pkts_sent_per_sec_enum: STRING
- pkts_sent_errors_per_sec: INTEGER
- pkts_sent_errors_per_sec_enum: STRING
- sent_pkts_dropped_per_sec: INTEGER
- sent_pkts_dropped_per_sec_enum: STRING
- broadcast_pkts_sent_per_sec: INTEGER
- broadcast_pkts_sent_per_sec_enum: STRING
- multicast_pkts_sent_per_sec: INTEGER
- multicast_pkts_sent_per_sec_enum: STRING
- sent_interrupts_per_sec: INTEGER
- sent_interrupts_per_sec_enum: STRING
- bytes_rcvd_per_sec: INTEGER
- bytes_rcvd_per_sec_enum: STRING
- pkts_rcvd_per_sec: INTEGER
- pkts_rcvd_per_sec_enum: STRING
- pkts_rcv_errors_per_sec: INTEGER
- pkts_rcv_errors_per_sec_enum: STRING
- bad_pkts_rcvd_per_sec: INTEGER
- bad_pkts_rcvd_per_sec_enum: STRING
- rcv_pkts_dropped_per_sec: INTEGER
- rcv_pkts_dropped_per_sec_enum: STRING
- broadcast_pkts_rcvd_per_sec: INTEGER
- broadcast_pkts_rcvd_per_sec_enum: STRING
- multicast_pkts_rcvd_per_sec: INTEGER
- multicast_pkts_rcvd_per_sec_enum: STRING
- rcv_interrupts_per_sec: INTEGER
- rcv_interrupts_per_sec_enum: STRING
- transmitsq_per_sec: INTEGER
- transmitsq_per_sec_enum: STRING
- max_transmitsq_per_sec: INTEGER
- max_transmitsq_per_sec_enum: STRING
- qoverflow_per_sec: INTEGER
- qoverflow_per_sec_enum: STRING
- real_pkts_rcvd_per_sec: INTEGER
- real_pkts_rcvd_per_sec_enum: STRING
- real_pkts_bridged_per_sec: INTEGER
- real_pkts_bridged_per_sec_enum: STRING

- real_pkts_consumed_per_sec: INTEGER
- real_pkts_consumed_per_sec_enum: STRING
- real_pkts_fragmented_per_sec: INTEGER
- real_pkts_fragmented_per_sec_enum: STRING
- real_pkts_sent_per_sec: INTEGER
- real_pkts_sent_per_sec_enum: STRING
- real_pkts_dropped_per_sec: INTEGER
- real_pkts_dropped_per_sec_enum: STRING
- virtual_pkts_rcvd_per_sec: INTEGER
- virtual_pkts_rcvd_per_sec_enum: STRING
- virtual_pkts_bridged_per_sec: INTEGER
- virtual_pkts_bridged_per_sec_enum: STRING
- virtual_pkts_consumed_per_sec: INTEGER
- virtual_pkts_consumed_per_sec_enum: STRING
- virtual_pkts_fragmented_per_sec: INTEGER
- virtual_pkts_fragmented_per_sec_enum: STRING
- virtual_pkts_sent_per_sec: INTEGER
- virtual_pkts_sent_per_sec_enum: STRING
- virtual_pkts_dropped_per_sec: INTEGER
- virtual_pkts_dropped_per_sec_enum: STRING
- output_pkts_generated_per_sec: INTEGER
- output_pkts_generated_per_sec_enum: STRING
- output_pkts_dropped_per_sec: INTEGER
- output_pkts_dropped_per_sec_enum: STRING
- output_pkts_failures_per_sec: INTEGER
- output_pkts_failures_per_sec_enum: STRING
- mem_alloc_failures_per_sec: INTEGER
- mem_alloc_failures_per_sec_enum: STRING
- icmp_error_pkts_sent_per_sec: INTEGER
- icmp_error_pkts_sent_per_sec_enum: STRING
- non_ip_pkts_larger_than_mtu_per_sec: INTEGER
- non_ip_pkts_larger_than_mtu_per_sec_enum: STRING
- threadq_overflow_pkts_per_sec: INTEGER
- threadq_overflow_pkts_per_sec_enum: STRING
- ha_keep_alive_pkts_per_sec: INTEGER
- ha_keep_alive_pkts_per_sec_enum: STRING
- ha_recovery_pkts_per_sec: INTEGER
- ha_recovery_pkts_per_sec_enum: STRING
- ha_notify_pkts_per_sec: INTEGER
- ha_notify_pkts_per_sec_enum: STRING
- ha_limbo_pkts_per_sec: INTEGER
- ha_limbo_pkts_per_sec_enum: STRING
- ha_state: STRING
- ha_bridge_mode: STRING
- times_primary_per_sec: INTEGER

- times_primary_per_sec_enum: STRING
- time_backup_per_sec: INTEGER
- time_backup_per_sec_enum: STRING
- ha_mode: STRING
- priority: INTEGER
- priority_enum: STRING
- adapter_protocol: STRING
- media_speed_running: STRING
- bandwidth_util_pct: REAL
- bandwidth_util_pct_enum: STRING

For events generated by situations in the Network Adapters Totals attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_NETWORK ADAPTERS TOTALS class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- name: STRING
- parent: STRING
- type: STRING
- bytes_sent: STRING
- pkts_sent: STRING
- pkts_sent_error: STRING
- sent_pkts_dropped: STRING
- broadcast_pkts_sent: STRING
- multicast_pkts_sent: STRING
- sent_interrupts: STRING
- bytes_rcvd: STRING
- pkts_rcvd: STRING
- pkts_rcv_error: STRING
- bad_pkts_rcvd: STRING
- rcv_pkts_dropped: STRING
- broadcast_pkts_rcvd: STRING
- multicast_pkts_rcvd: STRING
- rcv_interrupts: STRING
- transmitsq: STRING
- max_transmitsq: STRING
- qoverflow: STRING
- real_pkts_rcvd: STRING
- real_pkts_bridged: STRING
- real_pkts_consumed: STRING
- real_pkts_fragmented: STRING
- real_pkts_sent: STRING
- real_pkts_dropped: STRING
- virtual_pkts_rcvd: STRING
- virtual_pkts_bridged: STRING
- virtual_pkts_consumed: STRING

- virtual_pkts_fragmented: STRING
- virtual_pkts_sent: STRING
- virtual_pkts_dropped: STRING
- output_pkts_generated: STRING
- output_pkts_dropped: STRING
- output_pkts_failures: STRING
- mem_alloc_failures: STRING
- icmp_error_pkts_sent: STRING
- non_ip_pkts_larger_than_mtu: STRING
- threadq_overflow_pkts: STRING
- ha_keep_alive_pkts: STRING
- ha_recovery_pkts: STRING
- ha_notify_pkts: STRING
- ha_limbo_pkts: STRING
- ha_state: STRING
- ha_bridge_mode: STRING
- times_primary: STRING
- times_backup: STRING
- ha_mode: STRING
- priority: STRING

For events generated by situations in the Network Interfaces attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_NETWORK INTERFACES class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- name: STRING
- state: STRING
- ip_address: STRING
- mtu: STRING
- mask: STRING
- domain: STRING
- gateway: STRING
- nameserver: STRING

For events generated by situations in the Network Mappings attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_NETWORK MAPPINGS class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- vlan_id: INTEGER
- vlan_id_enum: STRING
- partition_name: STRING
- partition_state: STRING
- kva_hostname: STRING
- ip_address: STRING

- partition_id: INTEGER
- partition_id_enum: STRING
- vea_slot: INTEGER
- vea_slot_enum: STRING
- vea_mac: STRING
- vea_ip_address: STRING
- trunk: STRING
- shared_ethernet_adapter: STRING
- sea_ip_address: STRING
- sea_mac: STRING
- physical_ethernet_adapters: STRING
- virtual_ethernet_adapters: STRING
- failover: STRING
- priority: STRING
- bridging: STRING
- control_channel: STRING
- server_bytes_sent_per_sec: INTEGER
- server_bytes_sent_per_sec_enum: STRING
- server_bytes_received_per_sec: INTEGER
- server_bytes_received_per_sec_enum: STRING
- server_packets_sent_per_sec: INTEGER
- server_packets_sent_per_sec_enum: STRING
- server_packets_received_per_sec: INTEGER
- server_packets_received_per_sec_enum: STRING
- client_device_name: STRING

For events generated by situations in the NIM Resources attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_NIM RESOURCES class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- name: STRING
- type: STRING
- kva_class: STRING
- state: STRING
- server: STRING
- location: STRING
- information: STRING

For events generated by situations in the NPIV FCP attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_NPIV FCP class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- physical_fibre_channel_port: STRING
- physical_fcp_location_code: STRING

- total_ports: INTEGER
- total_ports_enum: STRING
- available_ports: INTEGER
- available_ports_enum: STRING

For events generated by situations in the NPIV Mappings attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_NPIV MAPPINGS class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- partition_name: STRING
- partition_id: INTEGER
- partition_id_enum: STRING
- npiv_server_adapter_name: STRING
- server_physical_location_code: STRING
- client_partition_name: STRING
- client_partition_id: INTEGER
- client_partition_id_enum: STRING
- npiv_client_adapter_name: STRING
- client_slot_number: INTEGER
- client_slot_number_enum: STRING
- server_slot_number: INTEGER
- server_slot_number_enum: STRING
- client_partition_os: STRING
- client_physical_location_code: STRING
- physical_fibre_channel_port: STRING
- physical_fcp_location_code: STRING
- kva_status: INTEGER
- kva_status_enum: STRING
- wwpn_primary: STRING
- wwpn_secondary: STRING

For events generated by situations in the Paging Space attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_PAGING SPACE class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- total_size_mb: INTEGER
- total_size_mb_enum: STRING
- free_mb: INTEGER
- free_mb_enum: STRING
- used_mb: INTEGER
- used_mb_enum: STRING
- free_pct: INTEGER
- free_pct_enum: STRING
- used_pct: INTEGER

- used_pct_enum: STRING
- pages_read_per_sec: INTEGER
- pages_read_per_sec_enum: STRING
- pages_written_per_sec: INTEGER
- pages_written_per_sec_enum: STRING

For events generated by situations in the Performance Object Status attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_PERFORMANCE OBJECT STATUS class. This 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

For events generated by situations in the Physical Memory attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_PHYSICAL MEMORY class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- memory_size_mb: INTEGER
- memory_size_mb_enum: STRING
- free_memory_mb: INTEGER
- free_memory_mb_enum: STRING
- used_memory_mb: INTEGER
- used_memory_mb_enum: STRING
- free_memory_pct: INTEGER
- free_memory_pct_enum: STRING
- used_memory_pct: INTEGER
- used_memory_pct_enum: STRING
- non_comp_memory: INTEGER
- non_comp_memory_enum: STRING
- comp_memory: INTEGER
- comp_memory_enum: STRING
- decay_rate: INTEGER
- decay_rate_enum: STRING
- repaging_rate: INTEGER
- repaging_rate_enum: STRING

For events generated by situations in the Physical Volumes attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_PHYSICAL VOLUMES class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- name: STRING
- state: STRING
- volume_group_name: STRING
- number_of_logical_volumes: INTEGER
- number_of_logical_volumes_enum: STRING
- number_of_stale_partitions: INTEGER
- number_of_stale_partitions_enum: STRING
- size_mb: INTEGER
- size_mb_enum: STRING
- free_mb: INTEGER
- free_mb_enum: STRING
- used_mb: INTEGER
- used_mb_enum: STRING
- free_pct: INTEGER
- free_pct_enum: STRING
- used_pct: INTEGER
- used_pct_enum: STRING
- unique_id: STRING

For events generated by situations in the Processes Detail attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_PROCESSES DETAIL class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- process_name: STRING
- process_id: INTEGER
- process_id_enum: STRING
- parent_process_id: INTEGER
- parent_process_id_enum: STRING
- nice: INTEGER
- nice_enum: STRING
- user_name: STRING
- repage_count_per_sec: INTEGER
- repage_count_per_sec_enum: STRING
- io_page_fault_per_sec: INTEGER
- io_page_fault_per_sec_enum: STRING
- non_io_page_fault_per_sec: INTEGER
- non_io_page_fault_per_sec_enum: STRING
- text_size: INTEGER
- text_size_enum: STRING
- resident_text_size: INTEGER

- resident_text_size_enum: STRING
- resident_data_size: INTEGER
- resident_data_size_enum: STRING
- page_space_used: INTEGER
- page_space_used_enum: STRING
- signals_in_per_sec: INTEGER
- signals_in_per_sec_enum: STRING
- voluntary_context_switches_per_sec: INTEGER
- voluntary_context_switches_per_sec_enum: STRING
- process_group_id: INTEGER
- process_group_id_enum: STRING
- priority: INTEGER
- priority_enum: STRING
- state: INTEGER
- state_enum: STRING
- process_uid: INTEGER
- process_uid_enum: STRING
- thread_count: INTEGER
- thread_count_enum: STRING
- process_core_size: INTEGER
- process_core_size_enum: STRING
- involuntary_context_switches_per_sec: INTEGER
- involuntary_context_switches_per_sec_enum: STRING
- total_cpu_time: INTEGER
- total_cpu_time_enum: STRING
- cpu_pct: INTEGER
- cpu_pct_enum: STRING
- wpar_name: STRING
- wlm_name: STRING
- full_path: STRING

For events generated by situations in the Processes Summary attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_PROCESSES SUMMARY class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- process_context_switches_per_sec: INTEGER
- process_context_switches_per_sec_enum: STRING
- run_queue_avg: INTEGER
- run_queue_avg_enum: STRING
- swap_queue_avg: INTEGER
- swap_queue_avg_enum: STRING
- kern_procs_created_per_sec: INTEGER
- kern_procs_created_per_sec_enum: STRING
- kern_procs_exit_per_sec: INTEGER
- kern_procs_exit_per_sec_enum: STRING

- load_avg: INTEGER
- load_avg_enum: STRING
- utilization_avg: INTEGER
- utilization_avg_enum: STRING
- total_num_processes: INTEGER
- total_num_processes_enum: STRING

For events generated by situations in the Quality Of Service attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_QUALITY OF SERVICE class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- policy_rule_priority: INTEGER
- policy_rule_priority_enum: STRING
- protocol: INTEGER
- protocol_enum: STRING
- source_ip_addr_start: STRING
- source_ip_addr_end: STRING
- dest_ip_addr_start: STRING
- dest_ip_addr_end: STRING
- source_port_start: INTEGER
- source_port_start_enum: STRING
- source_port_end: INTEGER
- source_port_end_enum: STRING
- dest_port_start: INTEGER
- dest_port_start_enum: STRING
- dest_port_end: INTEGER
- dest_port_end_enum: STRING
- service_class: INTEGER
- service_class_enum: STRING
- peak_rate: STRING
- average_rate: STRING
- bucket_depth: STRING
- guaranteed_rate: STRING
- slack_term: STRING
- tos_in: STRING
- tos_out: STRING
- max_packet_size: INTEGER
- max_packet_size_enum: STRING
- min_packet_size: INTEGER
- min_packet_size_enum: STRING
- num_connections: INTEGER
- num_connections_enum: STRING
- bytes_xmited: STRING
- packets_xmited: STRING
- in_profile_bytes_xmited: STRING

- in_profile_packets_xmited: STRING

For events generated by situations in the Security States attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_SECURITY STATES class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- security_level: STRING
- user_authentication: STRING
- firewall: STRING

For events generated by situations in the Shared Ethernet Adapter attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_SHARED ETHERNET ADAPTER class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- device_name: STRING
- mac_address: STRING
- vlan: STRING
- vlan_priority: STRING
- kva_hostname: STRING
- ip_address: STRING
- packets_sent: STRING
- bytes_sent: STRING
- packets_received: STRING
- bytes_received: STRING

For events generated by situations in the Storage Mappings attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_STORAGE MAPPINGS class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- vios_name: STRING
- kva_hostname: STRING
- ip_address: STRING
- partition_id: INTEGER
- partition_id_enum: STRING
- vssa_slot: INTEGER
- vssa_slot_enum: STRING
- vssa_name: STRING
- vtd_name: STRING
- vios_physical_adapter: STRING
- disk: STRING
- lv_name: STRING
- lun_id: STRING
- client_partition_name: STRING
- client_hostname: STRING

- client_ip_address: STRING
- client_partition_id: INTEGER
- client_partition_id_enum: STRING
- client_partition_state: STRING
- vsca_slot: INTEGER
- vsca_slot_enum: STRING
- vtd_transfers_per_sec: REAL
- vtd_transfers_per_sec_enum: STRING
- vtd_reads_per_sec: REAL
- vtd_reads_per_sec_enum: STRING
- vtd_writes_per_sec: REAL
- vtd_writes_per_sec_enum: STRING
- vtd_spans_multiple_disks: STRING
- disk_transfers_per_sec: REAL
- disk_transfers_per_sec_enum: STRING
- disk_reads_per_sec: REAL
- disk_reads_per_sec_enum: STRING
- disk_writes_per_sec: REAL
- disk_writes_per_sec_enum: STRING
- disk_transfers_sec_pct: REAL
- disk_transfers_sec_pct_enum: STRING
- disk_reads_per_sec_pct: REAL
- disk_reads_per_sec_pct_enum: STRING
- disk_writes_per_sec_pct: REAL
- disk_writes_per_sec_pct_enum: STRING
- client_device_name: STRING

For events generated by situations in the System Call attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_SYSTEM CALL class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- num_syscalls_per_sec: INTEGER
- num_syscalls_per_sec_enum: STRING
- reads_per_sec: INTEGER
- reads_per_sec_enum: STRING
- writes_per_sec: INTEGER
- writes_per_sec_enum: STRING
- forks_per_sec: INTEGER
- forks_per_sec_enum: STRING
- execs_per_sec: INTEGER
- execs_per_sec_enum: STRING

For events generated by situations in the System IO attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_SYSTEM IO class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- syscall_read_chars_per_sec: INTEGER
- syscall_read_chars_per_sec_enum: STRING
- syscall_write_chars_per_sec: INTEGER
- syscall_write_chars_per_sec_enum: STRING
- logical_blk_buffer_cache_reads_per_sec: INTEGER
- logical_blk_buffer_cache_reads_per_sec_enum: STRING
- logical_blk_buffer_cache_writes_per_sec: INTEGER
- logical_blk_buffer_cache_writes_per_sec_enum: STRING
- phys_blk_buffer_cache_reads_per_sec: INTEGER
- phys_blk_buffer_cache_reads_per_sec_enum: STRING
- phys_blk_buffer_cache_writes_per_sec: INTEGER
- phys_blk_buffer_cache_writes_per_sec_enum: STRING
- phys_raw_reads_per_sec: INTEGER
- phys_raw_reads_per_sec_enum: STRING
- phys_raw_writes_per_sec: INTEGER
- phys_raw_writes_per_sec_enum: STRING

For events generated by situations in the TADDM attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_TADDM class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- cec_mfg: STRING
- cec_model: STRING
- cec_sn: STRING
- lpar_num: INTEGER
- lpar_num_enum: STRING

For events generated by situations in the TCP attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_TCP class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- connections_initiated_per_sec: INTEGER
- connections_initiated_per_sec_enum: STRING
- connections_established_per_sec: INTEGER
- connections_established_per_sec_enum: STRING
- connections_closed_per_sec: INTEGER
- connections_closed_per_sec_enum: STRING
- total_packets_sent_per_sec: INTEGER
- total_packets_sent_per_sec_enum: STRING
- data_packets_sent_per_sec: INTEGER
- data_packets_sent_per_sec_enum: STRING
- data_sent_kb_per_sec: INTEGER

- data_sent_kb_per_sec_enum: STRING
- data_pkt_retransmitted_per_sec: INTEGER
- data_pkt_retransmitted_per_sec_enum: STRING
- ack_only_pkt_sent_per_sec: INTEGER
- ack_only_pkt_sent_per_sec_enum: STRING
- total_packets_received_per_sec: INTEGER
- total_packets_received_per_sec_enum: STRING
- ack_pkt_received_per_sec: INTEGER
- ack_pkt_received_per_sec_enum: STRING

For events generated by situations in the Top 50 CPU Processes attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_TOP 50 CPU PROCESSES class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- name: STRING
- id: INTEGER
- id_enum: STRING
- cpu_pct: INTEGER
- cpu_pct_enum: STRING
- memory_kb: INTEGER
- memory_kb_enum: STRING
- owner: STRING
- full_path: STRING

For events generated by situations in the Top 50 Memory Processes attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_TOP 50 MEMORY PROCESSES class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- name: STRING
- id: INTEGER
- id_enum: STRING
- cpu_pct: INTEGER
- cpu_pct_enum: STRING
- memory_kb: INTEGER
- memory_kb_enum: STRING
- owner: STRING
- full_path: STRING

For events generated by situations in the Virtual Memory Management attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_VIRTUAL MEMORY MANAGEMENT class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- pages_read_per_sec: INTEGER
- pages_read_per_sec_enum: STRING

- pages_written_per_sec: INTEGER
- pages_written_per_sec_enum: STRING
- paging_space_read_per_sec: INTEGER
- paging_space_read_per_sec_enum: STRING
- paging_space_written_per_sec: INTEGER
- paging_space_written_per_sec_enum: STRING
- zero_fill_per_sec: INTEGER
- zero_fill_per_sec_enum: STRING
- pagein_wait_per_sec: INTEGER
- pagein_wait_per_sec_enum: STRING
- page_fault_per_sec: INTEGER
- page_fault_per_sec_enum: STRING
- page_reclaim_per_sec: INTEGER
- page_reclaim_per_sec_enum: STRING
- steals_per_sec: INTEGER
- steals_per_sec_enum: STRING
- memory_not_pinned: INTEGER
- memory_not_pinned_enum: STRING
- comp_repage_pct: INTEGER
- comp_repage_pct_enum: STRING
- noncomp_repage_pct: INTEGER
- noncomp_repage_pct_enum: STRING
- pending_client_pageout: INTEGER
- pending_client_pageout_enum: STRING

For events generated by situations in the Volume Groups attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_VOLUME_GROUPS class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- name: STRING
- state: STRING
- number_of_logical_volumes: INTEGER
- number_of_logical_volumes_enum: STRING
- number_of_physical_volumes: INTEGER
- number_of_physical_volumes_enum: STRING
- number_of_active_physical_volumes: INTEGER
- number_of_active_physical_volumes_enum: STRING
- number_of_stale_physical_volumes: INTEGER
- number_of_stale_physical_volumes_enum: STRING
- size_mb: INTEGER
- size_mb_enum: STRING
- free_mb: INTEGER
- free_mb_enum: STRING
- used_mb: INTEGER
- used_mb_enum: STRING

- free_pct: INTEGER
- free_pct_enum: STRING
- used_pct: INTEGER
- used_pct_enum: STRING

For events generated by situations in the Workload Manager attribute group, Tivoli Enterprise Console events are sent using the ITM_KVA_WORKLOAD MANAGER class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- class_name: STRING
- tier_num: INTEGER
- tier_num_enum: STRING
- cpu_consumed_pct: INTEGER
- cpu_consumed_pct_enum: STRING
- cpu_desired_pct: INTEGER
- cpu_desired_pct_enum: STRING
- cpu_total: INTEGER
- cpu_total_enum: STRING
- cpu_shares: INTEGER
- cpu_shares_enum: STRING
- cpu_min: INTEGER
- cpu_min_enum: STRING
- cpu_soft_max: INTEGER
- cpu_soft_max_enum: STRING
- cpu_hard_max: INTEGER
- cpu_hard_max_enum: STRING
- mem_consumed_pct: INTEGER
- mem_consumed_pct_enum: STRING
- mem_desired_pct: INTEGER
- mem_desired_pct_enum: STRING
- mem_total: INTEGER
- mem_total_enum: STRING
- mem_shares: INTEGER
- mem_shares_enum: STRING
- mem_min: INTEGER
- mem_min_enum: STRING
- mem_soft_max: INTEGER
- mem_soft_max_enum: STRING
- mem_hard_max: INTEGER
- mem_hard_max_enum: STRING
- disk_consumed_pct: INTEGER
- disk_consumed_pct_enum: STRING
- disk_desired_pct: INTEGER
- disk_desired_pct_enum: STRING
- disk_total: INTEGER

- disk_total_enum: STRING
- disk_shares: INTEGER
- disk_shares_enum: STRING
- disk_min: INTEGER
- disk_min_enum: STRING
- disk_soft_max: INTEGER
- disk_soft_max_enum: STRING
- disk_hard_max: INTEGER
- disk_hard_max_enum: STRING

Appendix B. Discovery Library Adapter for the VIOS Premium agent

This appendix contains information about the Discovery Library Adapter (DLA) for the IBM Tivoli Monitoring: VIOS Premium Agent.

About the DLA

The Tivoli Management Services DLA discovers resources and relationships and creates a Discovery Library Book file. The discovery book follows the Discovery Library IDML schema and is used to populate the IBM Tivoli Change and Configuration Management Database and IBM Tivoli Business Service Manager products. The Tivoli Management Services DLA discovers the operating system, the IBM Tivoli Monitoring agent running on this LPAR, and the relationship of the agent with the CEC system that it virtualizes. For all systems that are using the VIOS Premium agent and that are active and online at the Tivoli Enterprise Portal Server, information is included in the discovery book for those resources. The Tivoli Management Services DLA discovers active resources. It is run on demand and can be run periodically to discover resources that were not active during previous discoveries.

The DLA discovers VIOS Premium agent components.

More information about DLAs

The following sources contain additional information about using the DLA program with all monitoring agents:

- The *IBM Tivoli Monitoring Administrator's Guide* contains information about using the Tivoli Management Services Discovery Library Adapter.
- For information about using a DLA with Tivoli Application Dependency Discovery Manager (TADDM), see the information center at http://publib.boulder.ibm.com/infocenter/tivihelp/v10r1/topic/com.ibm.taddm.doc_7.1/cmdb_welcome.html

DLA data model class types represented in CDM

This section contains information about how the various source application data objects map to classes in the Common Data Model (CDM) for the VIOS Premium agent.

The following information is provided for each class:

CDM class name

Class name for which the agent is providing information

Relationships

CDM relationships (hierarchical) between currently identified model objects

CDM attributes, agent attributes, descriptions, and examples

CDM and agent attributes that are required to create an instance of a resource, descriptions of the attributes, and examples of the attributes

LPAR class

An LPAR is a logical partition of the physical hardware where an operating system instance can run.

CDM class name

sys.ComputerSystem

Relationships

This class has no relationships.

CDM attributes, agent attributes, descriptions, and examples

- CDM attribute: Name
Agent attribute: *KVA22LOGIC.HOSTNAME*
Description: The name for the computer system as it is commonly known in the data center. This attribute is used by internal mechanisms of IBM Tivoli Application Dependency Discovery Manager.
Example: robot-vios2
- CDM attribute: ManagedSystemName
Agent attribute: *INODESTS.NODE*
Description: The name of the IBM Tivoli Monitoring component that provides data for the management of the VIOS Premium agent instance.
Example: robot-vios2:VA
- CDM attribute: Label
Agent attribute: *KVA22LOGIC.HOSTNAME*
Description: A system-generated, descriptive string used for displaying the instance.
Example: robot-vios2
- CDM attribute: SerialNumber
Agent attribute: *KVA56TADDM.CEC_SN*
Description: The serial number of the physical computer system, as it is provided by the manufacturer of the device.
Example: 1000E8P
- CDM attribute: Manufacturer
Agent attribute: *KVA56TADDM.CEC_MFG*
Description: The name of the manufacturer of the physical computer system.
Example: IBM
- CDM attribute: Model
Agent attribute: *KVA56TADDM.CEC_MODEL*
Description: The model number of the physical computer system, as it is provided by the manufacturer of the device.
Example: 8233-E8B
- CDM attribute: VMID
 - Agent attribute: *KVA56TADDM.LPAR_NUM*
 - Description: The unique identifier for a virtual machine. This is the ID for the LPAR.
 - Example: 2
- CDM attribute: Virtual
Description: Set to true because this is a virtual computer system.
Example: true
- CDM attribute: IsVMIDanLPAR

Description: Set to true because this computer system is a logical partition.
Example: true

VIOS class

The VIOS (Virtual I/O Server) runs a customized version of the AIX operating system. VIOS provides the virtual storage and shared Ethernet resources to the other logical partitions on the server. VIOS is installed on a logical partition in the place of a general-purpose operating system, and is used solely to provide virtual I/O resources to the other logical partitions.

CDM class name
sys.VIOS

Relationships

- provides
Source: *KVA22LOGIC.HOSTNAME-LPAR*
Target: *KVA22LOGIC.HOSTNAME-VIOS*
Example: provides source="robot-vios2-LPAR" target="robot-vios2-VIOS"

CDM attributes, agent attributes, descriptions, and examples

- CDM attribute: Name
Description: The name for the VIOS system as it is commonly known in the data center.
Example: VIOS
- CDM attribute: Label
Agent attribute: *KVA22LOGIC.HOSTNAME*
Description: A system-generated, descriptive string used for displaying the instance.
Example: robot-vios2

VIOS OS class

The VIOS OS class represents the operating system that is installed on each LPAR.

CDM class name
sys.ControlSoftware

Relationships

- runsOn
Source: *KVA22LOGIC.HOSTNAME-VIOSOS*
Target: *KVA22LOGIC.HOSTNAME-LPAR*
Example: runsOn source="robot-vios2-VIOSOS" target="robot-vios2-LPAR"
- installedOn
Source: *KVA22LOGIC.HOSTNAME-VIOSOS*
Target: *KVA22LOGIC.HOSTNAME-LPAR*
Example: installedOn source="robot-vios2-VIOSOS" target="robot-vios2-LPAR"

CDM attributes, agent attributes, descriptions, and examples

- CDM attribute: Name
Description: Formed by the host name of the IBM AIX operating system.
Example: VIOS
- CDM attribute: OSName

Description: The operating system name.
Example: VIOS

- CDM attribute: OSVersion
Agent attribute: *KVA16CPUSU.SSV*
Description: The operating system version.
Example: 2.1.2.0

TMSAgent class

The TMSAgent class represents the Tivoli Monitoring Services Agent.

CDM class name

app.TMSAgent

Relationships

- monitors
Source: *INODESTS.NODE-TMSAgent*
Target: *KVA22LOGIC.HOSTNAME-LPAR*
Example: monitors source="robot-vios2:VA-TMSAgent"
target="robot-vios2-LPAR"

CDM attributes, agent attributes, descriptions, and examples

- [illegible]

Appendix C. Documentation library

This appendix contains information about the publications related to the IBM Tivoli Monitoring: VIOS Premium Agent. These publications are listed in the following categories:

- VIOS Premium agent library
- Prerequisite publications
- Related publications

See the *IBM Tivoli Monitoring, OMEGAMON XE, and Composite Application Manager products: Documentation Guide*, SC23-8816, for information about accessing and using publications. You can find the *Documentation Guide* in the following information centers:

- IBM Tivoli Monitoring and OMEGAMON® XE
- IBM Tivoli Composite Application Manager

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** 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.

VIOS Premium agent library

One document is specific to the VIOS Premium agent: *IBM Tivoli Monitoring: VIOS Premium Agent User's Guide*. This publication provides agent-specific information for configuring, using, and troubleshooting the VIOS Premium agent.

Use the configuration chapter in this guide with the *IBM Tivoli Monitoring Installation and Setup Guide* to set up the software.

Use the information in this guide with the *Tivoli Enterprise Portal User's Guide* to monitor VIOS resources.

Prerequisite publications

To use the information in this publication effectively, you must have some prerequisite knowledge, which you can obtain from the following publications:

- *Exploring IBM Tivoli Monitoring*
- *IBM Tivoli Monitoring Administrator's Guide*
- *IBM Tivoli Monitoring Agent Builder User's Guide*
- *IBM Tivoli Monitoring Command Reference*
- *IBM Tivoli Monitoring: Configuring Tivoli Enterprise Monitoring Server on z/OS*
- *IBM Tivoli Monitoring Installation and Setup Guide*
- *IBM Tivoli Monitoring: Messages*
- *IBM Tivoli Monitoring Troubleshooting Guide*
- *IBM Tivoli Monitoring: Upgrading from Tivoli Distributed Monitoring*

- *IBM Tivoli Monitoring: Upgrading from V5.1.2*
- *IBM Tivoli Monitoring: i5/OS® Agent User's Guide*
- *IBM Tivoli Monitoring: Linux OS Agent User's Guide*
- *IBM Tivoli Monitoring: UNIX Logs OS Agent User's Guide*
- *IBM Tivoli Monitoring: UNIX OS Agent User's Guide*
- *IBM Tivoli Monitoring: Windows OS Agent User's Guide*
- *IBM Tivoli Monitoring Universal Agent User's Guide*
- *IBM Tivoli Monitoring Universal Agent API and Command Programming Reference Guide*
- *Tivoli Enterprise Portal User's Guide*

Related publications

The following documents also provide useful information:

- *IBM Tivoli Enterprise Console Adapters Guide*
- *IBM Tivoli Enterprise Console Event Integration Facility User's Guide*
- *IBM Tivoli Enterprise Console Reference Manual*
- *IBM Tivoli Enterprise Console Rule Builder's Guide*

Other sources of documentation

You can also obtain technical documentation about monitoring products from the following sources:

- IBM Integrated Service Management Library
<http://www.ibm.com/software/brandcatalog/ismlibrary/>
 The Integrated Service Management Library is an online catalog that contains integration documentation as well as other downloadable product extensions.
- IBM Redbooks® publications
<http://www.redbooks.ibm.com/>
 Redbooks publications, Redpapers, and Redbooks Technotes provide information about products from platform and solution perspectives.
- Technotes
 Technotes provide the latest information about known product limitations and workarounds. You can find Technotes through the IBM Software Support website at <http://www.ibm.com/support/entry/portal/software>.
- Tivoli wikis on the IBM developerWorks® website
 Tivoli Wiki Central at <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 at <http://www-10.lotus.com/ldd/tivmonitorwiki.nsf> provides information about IBM Tivoli Monitoring and related distributed products, including IBM Tivoli Composite Application Management products.
- Tivoli System z[®] Monitoring and Application Management Wiki at <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.

Appendix D. Accessibility

Accessibility features help users with physical disabilities, such as restricted mobility or limited vision, to use software products successfully. The major accessibility features in this product enable users to do the following:

- Use assistive technologies, such as screen-reader software and digital speech synthesizer, to hear what is displayed on the screen. Consult the product documentation of the assistive technology for details on using those technologies with this product.
- Operate specific or equivalent features using only the keyboard.
- Magnify what is displayed on the screen.

In addition, the product documentation was modified to include the following features to aid accessibility:

- All documentation is available in both HTML and convertible PDF formats to give the maximum opportunity for users to apply screen-reader software.
- All images in the documentation are provided with alternative text so that users with vision impairments can understand the contents of the images.

Navigating the interface using the keyboard

Standard shortcut and accelerator keys are used by the product and are documented by the operating system. See the documentation provided by your operating system for more information.

Magnifying what is displayed on the screen

You can enlarge information in the product windows using facilities provided by the operating systems on which the product is run. For example, in a Microsoft Windows environment, you can lower the resolution of the screen to enlarge the font sizes of the text on the screen. See the documentation provided by your operating system for more information.

Appendix E. Notices

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