Tivoli® IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent

IBM

Version 6.20.01

User's Guide

Tivoli® IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent

IBM

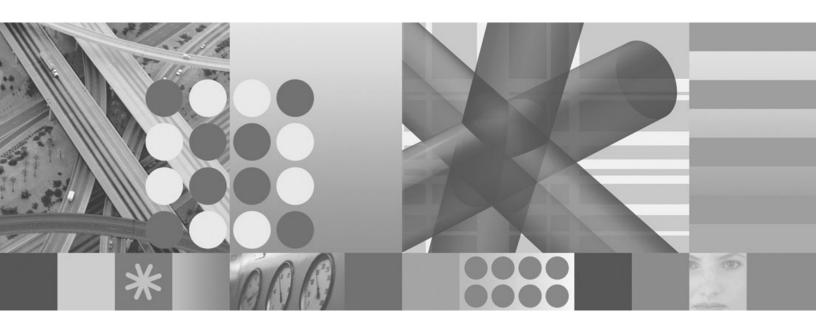**Version 6.20.01**

User's Guide

> **Note**
> Before using this information and the product it supports, read the information in Appendix D, "Notices," on page 289.

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Chapter 1. Overview of the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent

The IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent provides you with the capability to monitor Eaton Power Xpert Devices. This chapter provides a description of the features, components, and interface options for the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent.

IBM Tivoli Monitoring overview

IBM Tivoli Monitoring is the base software for the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert 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. By providing a consolidated view of your environment, the Tivoli Enterprise Portal permits you to monitor and resolve performance issues throughout the enterprise.

See the IBM Tivoli Monitoring publications listed in "Prerequisite publications" on page 285 for complete information about IBM Tivoli Monitoring and the Tivoli Enterprise Portal.

Features of the monitoring agent

The IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert 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

Components of the monitoring agent

After you install and set up the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent, you have an environment that contains the client, server, and monitoring agent implementation for IBM Tivoli Monitoring that contains the following components:
- Tivoli Enterprise Portal client with a Java™-based user interface 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.
- Tivoli Enterprise Monitoring Agent, IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent. The instances communicate with the systems or subsystems that you want to monitor. This monitoring agent collects and distributes data to a Tivoli Enterprise Portal Server.

IBM Tivoli Enterprise Console is an optional component, which acts as a central collection point for events from a variety of sources, including those 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 (using the event viewer), and you can forward events from IBM Tivoli Monitoring situations to the IBM Tivoli Enterprise Console component.

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 browser client interface
The browser client interface is automatically installed with the Tivoli Enterprise Portal Server. 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.

Tivoli Enterprise Portal desktop client interface
The desktop client interface is a Java-based graphical user interface (GUI) on a Windows® or Linux® workstation.

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 services for an organization.

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 already designated to start automatically.

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

This chapter contains information about the requirements for the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent, and agent-specific information related to installation and configuration of the agent.

To install and configure the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent, use the procedures for installing monitoring agents in the *IBM Tivoli Monitoring Installation and Setup Guide* along with the information in this chapter.

If you are performing a silent installation using a response file, see the information about performing a silent installation in the *IBM Tivoli Monitoring Installation and Setup Guide*.

Requirements for the monitoring agent

In addition to the requirements described in the *IBM Tivoli Monitoring Installation and Setup Guide*, the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent has the following requirements:

- The monitoring agent runs on any of these operating systems:
  - AIX® 5.3 (32/64 bit)
  - AIX 6.1 (64 bit)
  - Solaris V9 (SPARC) (32/64 bit)
  - Solaris V10 (SPARC) (64 bit)
  - HP-UX 11i V2 (B.11.23) (64-bit) for PA-RISC
  - HP-UX 11.23 and 11.31 on Itanium2
  - Windows Server 2003 SE with Service Pack 2 for x86 32-bit
  - Windows Server 2003 SE R2 with Service Pack 2 for x86 32-bit
  - Windows Server 2003 SE with Service Pack 2 for x86 64-bit
  - Windows Server 2003 SE R2 with Service Pack 2 for x86 64-bit
  - Windows Server 2003 EE with Service Pack 2 for x86 32-bit
  - Windows Server 2003 EE R2 with Service Pack 2 for x86 32-bit
  - Windows Server 2003 EE with Service Pack 2 for x86 64-bit
  - Windows Server 2003 EE R2 with Service Pack 2 for x86 64-bit
  - Red Hat Enterprise Desktop Linux 4 for Intel®
  - Red Hat Enterprise Linux 4.0 for x86 (32/64 bit)
  - Red Hat Enterprise Linux 4.0 for POWER™
  - Red Hat Enterprise Linux 4.0 for System z®
  - Red Hat Enterprise Desktop Linux 5 for Intel
  - Red Hat Enterprise Linux 5.0 for x86 (32/64 bit)
  - Red Hat Enterprise Linux 5.0 for POWER
  - Red Hat Enterprise Linux 5.0 for System z
  - SUSE Linux Enterprise Server 9 for x86 (32/64 bit)
  - SUSE Linux Enterprise Server 9 for POWER

- SUSE Linux Enterprise Server 9 for System z
- SUSE Linux Enterprise Server 10 for x86 (32/64 bit)
- SUSE Linux Enterprise Server 10 for POWER
- SUSE Linux Enterprise Server 10 for System z
- SUSE Linux Enterprise Desktop 9 and 10 for x86 32-bit

> **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.

- 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 following prerequisite software must be installed first:
  - IBM® Tivoli Monitoring V6.2 Fix Pack 1 or higher fix pack version of V6.2 or V6.2.1
  - Tivoli Enterprise Portal

  After you install the prerequisite software, install the following software, which is required for the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent to operate:
  - IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent
  - IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent for Tivoli Enterprise Monitoring Server support
  - IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent for Tivoli Enterprise Portal Server support
  - IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent for Tivoli Enterprise Portal Desktop Client support
  - IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent for Tivoli Enterprise Portal Browser Client support

The Monitoring Agent for Eaton Power Xpert has the following restrictions:
- The agent requires IBM Tivoli Monitoring V6.2 with Fix Pack 1 or higher fix pack version of V6.2 or V6.2.1. Certain components might install on earlier versions of IBM Tivoli Monitoring, but only V6.2 with Fix Pack 1 or later is supported.
- The agent requires that Eaton PXGX 1000 cards run firmware version 1.1.0-pdu or later.
- The agent requires that Eaton PXGX 2000 cards run firmware version 1.1.0-ups or later.
- Configured PDU, UPS, and meter devices must not have spaces or punctuation characters in their labels.
- The links to the Power Xpert Gateway workspace from the PDU Configuration workspace are only enabled for table rows that have a value of PXGX1000 for the Name attribute. Only these rows contain the information required to perform the workspace link.
- The Eaton UPS, PDU, and meter devices have some SNMP MIBs in common, including the Eaton PXG MIB and the MIB-2 Entity MIBs. As a result of this,

configuring a PDU as a UPS or a meter device or vice versa can result in
confusing data in the workspaces. Verify that each device is correctly configured
using the correct device category.

Installing language packs

To install a language pack, first make sure that you have already installed the
product in English, then perform the following steps depending on which
operating system you are using.

Windows systems

1. Double-click **lpinstaller.bat** in the language pack CD to launch the installation
   program.
2. Select the language of the installer and click **OK**.
3. Click **Next** on the Introduction panel.
4. Click **Add/Update** and click **Next**.
5. Select the folder in which the National Language Support package
   (NLSPackage) files are located.

   Note: Usually the NLSPackage files are located in the nlspackage folder
   where the installer executable is located.
6. Select the language support for the agent of your choice and click **Next**.

   Note: Hold down the Ctrl key for multiple selections.
7. Select the languages that you want to install and click **Next**.
8. Examine the installation summary page and click **Next** to begin installation.
9. Click **Finish** after installation completes to exit the installer.
10. Restart the Tivoli Enterprise Portal (if on the Tivoli Enterprise Portal Server) or
    restart the Tivoli Enterprise Portal Server (if on the Tivoli Enterprise Portal
    Server component).

UNIX or Linux systems

1. Run the following command to create a temporary directory on the computer.
   Make sure that the full path of the directory does not contain any spaces:
   ```
   mkdir dir_name
   ```
2. Mount the language pack CD to the temporary directory you just created.
3. Run the following command to launch the installation program:
   ```
   cd dir_name
   lpinstall.sh ITM Home Directory
   ```

   Where *ITM Home Directory* is where you installed IBM Tivoli Monitoring.
   Usually it is /opt/IBM/ITM for AIX and Linux.
4. Select the language of the installer and click **OK**.
5. Click **Next** on the Introduction panel.
6. Click **Add/Update** and click **Next**.
7. Select the folder in which the National Language Support package
   (NLSPackage) files are located.

   Note: Usually, the NLSPackage files are located in the nlspackage folder
   where the installer executable is located.
8. Select the language support for the agent of your choice and click **Next**.

> Note: Hold down the Ctrl key for multiple selections.

9. Select the languages that you want to install and click **Next**.
10. Examine the installation summary page and click **Next** to begin installation.
11. Click **Finish** after installation completes to exit the installer.
12. Restart the Tivoli Enterprise Portal (if on the Tivoli Enterprise Portal Server) or restart the Tivoli Enterprise Portal Server (if on the Tivoli Enterprise Portal Server component).

Configuring the monitoring agent after installation

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 IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent.

The Monitoring Agent for Eaton Power Xpert uses the Simple Network Management Protocol (SNMP) to remotely collect metrics from Eaton Power Xpert uninterruptible power supplies (UPS) and power distribution units, remote power panels, rack power modules (generically referred to here as PDU devices), and meters. The agent supports UPS devices with a PXGX 2000 gateway card installed and PDU devices with a PXGX 1000 gateway card installed. Refer to the Eaton PXGX 1000 and PXGX 2000 documentation for the steps required to enable SNMP management functions on these cards.

SNMP Version 1, SNMP Version 2c, or SNMP Version 3 can be used, depending on the configuration of the Eaton device. After enabling SNMP on the Eaton UPS, PDU, or meter device, configure the SNMP connection to the device by configuring the agent in the Manage Tivoli Enterprise Monitoring Services window. Configuring the SNMP connection is a three step process:

1. Select the SNMP version to be used. All managed devices must use the same SNMP version.
2. Provide default values for the SNMP version-specific connection information.
3. Configure new UPS, PDU, and meter devices. Provide unique labels, host name or IP addresses, and device-specific connection information. Device labels must not contain space or punctuation characters.

After configuration is complete, start the agent.

Because of limitations in the IBM Tivoli Monitoring command line configuration interface on Linux and UNIX systems, PDU, UPS, and meter devices must be created and configured using the graphical configuration interface. To start this interface run the following command from the IBM Tivoli Monitoring bin directory: itmcmd manage.

Right-click the entry for the Monitoring Agent for Eaton Power Xpert, and select the Configure option.

Configuration values

For both local and remote configuration, provide the configuration values for the agent to operate. When configuring an agent, a panel is displayed so you can enter each value. When there is a default value, this value is pre-entered into the field. If a field represents a password, 2 entry fields are displayed. You must enter the same value in each field. The values you type are not displayed to help maintain the security of these values.

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

SNMP Version

The SNMP version to use to make the connection.

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

This value is required.

PDU Devices (PDU)

PDU Connection Details

Eaton PDU Device Label

The name for the subnode that will appear in the Tivoli Enterprise Portal navigator tree for this host.

The type is string.

This value is required.

SNMP V3 Auth Password

The authorization pass phrase for connecting to the SNMP agent.

The type is password.

This value might be optional.

SNMP V3 Auth Protocol

The authorization protocol used to connect to the SNMP agent.

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

This value is required.

SNMP V1/V2 Community Name

The SNMP server community name.

The type is password.

This value is required.

SNMP Host

The host or IP address of the SNMP system.

The type is string.

This value is required.

Port Number

The port number of the SNMP server.

The type is numeric.

This value is required.

SNMP V3 Priv Password

The privacy pass phrase for connecting to the SNMP agent.

The type is password.

This value might be optional.

SNMP V3 Priv Protocol

The privacy protocol used to connect to the SNMP agent.

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

This value is required.

SNMP V3 Security Level
The security level used to connect to the SNMP agent.

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

This value is required.

SNMP V3 User Name
The user name for connecting to the SNMP agent.

The type is string.

This value might be optional.

UPS Devices (UPS)
UPS Connection Details

Eaton UPS Device Label
The name for the subnode that will appear in the Tivoli Enterprise Portal navigator tree for this host.

The type is string.

This value is required.

SNMP V3 Auth Password
The authorization pass phrase for connecting to the SNMP agent.

The type is password.

This value might be optional.

SNMP V3 Auth Protocol
The authorization protocol used to connect to the SNMP agent.

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

This value is required.

SNMP V1/V2 Community Name
The SNMP server community name.

The type is password.

This value is required.

SNMP Host
The host or IP address of the SNMP system.

The type is string.

This value is required.

Port Number
The port number of the SNMP server.

The type is numeric.

This value is required.

SNMP V3 Priv Password
The privacy pass phrase for connecting to the SNMP agent.

The type is password.

This value might be optional.

SNMP V3 Priv Protocol
The privacy protocol used to connect to the SNMP agent.

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

This value is required.

SNMP V3 Security Level
The security level used to connect to the SNMP agent.

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

This value is required.

SNMP V3 User Name
The user name for connecting to the SNMP agent.

The type is string.

This value might be optional.

Meter Devices (MTR)
Meter Connection Details

Eaton Meter Device Label
The name for the subnode that will appear in the Tivoli Enterprise Portal navigator tree for this host.

The type is string.

This value is required.

SNMP V3 Auth Password
The authorization pass phrase for connecting to the SNMP agent.

The type is password.

This value might be optional.

SNMP V3 Auth Protocol
The authorization protocol used to connect to the SNMP agent.

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

This value is required.

SNMP V1/V2 Community Name
The SNMP server community name.

The type is password.

This value is required.

SNMP Host
The host or IP address of the SNMP system.

The type is string.

This value is required.

Port Number
The port number of the SNMP server.

The type is numeric.

This value is required.

SNMP V3 Priv Password
The privacy pass phrase for connecting to the SNMP agent.

The type is password.

This value might be optional.

SNMP V3 Priv Protocol

The privacy protocol used to connect to the SNMP agent.

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

This value is required.

SNMP V3 Security Level

The security level used to connect to the SNMP agent.

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

This value is required.

SNMP V3 User Name

The user name for connecting to the SNMP agent.

The type is string.

This value might be optional.

Remote installation and configuration

When installing the agent remotely, you must provide the configuration values for the agent to operate. See "Configuration values" on page 6.

See the **tacmd describeSystemType** section in the *IBM Tivoli Monitoring Command Reference* for information on displaying the configuration options that are available to use with the **configureSystem** or **addSystem** commands.

The following command is an example of remote configuration for Windows operating systems:

```
tacmd addSystem -t E8 -n Primary:sample.node.name:NT
-p  Meter Connection Details.Eaton Meter Device Label=value
 PDU Connection Details.Eaton PDU Device Label=value
 UPS Connection Details.Eaton UPS Device Label=value
 MTR.SNMP_AUTH_PASSWORD=value
 MTR.SNMP_AUTH_PROTOCOL=value
 MTR.SNMP_COMMUNITY=value
 MTR.SNMP_HOST=value
 MTR.SNMP_PORT=value
 MTR.SNMP_PRIV_PASSWORD=value
 MTR.SNMP_PRIV_PROTOCOL=value
 MTR.SNMP_SECURITY_LEVEL=value
 MTR.SNMP_USER_NAME=value
 KQZ_SNMP_VERSION_DETAILS_PLACEHOLDER.SNMP_VERSION=value
```

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. At the left of the workspace is a Navigator that you use 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.

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

The IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent provides a variety of default workspaces. These workspaces are displayed in the Navigator tree under the following nodes and subnodes for this monitoring agent:

Eaton Power Xpert :E8 node
> Corresponds to a Eaton Power Xpert instance and contains agent instance level workspaces.

UPS Endpoints :UPS subnode
> Each node is an individual UPS.

PDU Endpoints :PDU subnode
> Each node is an individual PDU.

MTR Endpoints :MTR subnode
> Each node is an individual MTR.

When a single instance of the monitoring agent is defined on a system, the top-level node is Eaton Power Xpert - *Instance*:*Hostname*:E8. The Eaton Power Xpert workspace is defined at this node.

When multiple instances of the monitoring agent are defined on a system, the top-level node becomes Eaton Power Xpert. The Eaton Power Xpert workspace is undefined at this node. A subnode for each instance is created called *Instance*:*Hostname*:E8. A workspace that is called *Instance*:*Hostname*:E8 is associated with the instance node. This workspace is comparable to the Eaton Power Xpert workspace.

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

More information about workspaces

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

For a list of the predefined workspaces for this monitoring agent and a description of each workspace, refer to the Predefined workspaces section in this chapter and the information in that section for 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 IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent provides the following predefined workspaces, which are organized by Navigator item.

Agent level navigator items
- Eaton Power Xpert Navigator item
  - Eaton Power Xpert workspace
- Managed Systems Navigator item
  - Managed Systems workspace

UPS Endpoints (UPS) subnode
- UPS Endpoints Navigator item
  - UPS Endpoints workspace
- UPS Alarms Navigator item
  - UPS Alarms workspace
- UPS Battery Status Navigator item
  - UPS Battery Status workspace
- UPS Device Configuration Navigator item
  - UPS Device Configuration workspace
  - UPS Power Xpert Gateway workspace
- UPS Device Status Navigator item
  - UPS Device Status workspace
- UPS Environmental Summary Navigator item
  - UPS Environmental Summary workspace
- UPS Power Summary Navigator item
  - Power Trend Data workspace
  - UPS Power Summary workspace

PDU Endpoints (PDU) subnode
- PDU Endpoints Navigator item
  - PDU Endpoints workspace
- PDU Alarms Navigator item
  - PDU Alarms workspace
- PDU Device Configuration Navigator item

- – PDU Device Configuration workspace
- – PDU Power Xpert Gateway workspace
- • PDU Device Status Navigator item
  - – PDU Device Status workspace
- • PDU Environmental Summary Navigator item
  - – PDU Environmental Summary workspace
- • PDU Metering Data Navigator item
  - – Breaker Meters workspace
  - – PDU Metering Data workspace
- • PDU Power Summary Navigator item
  - – Breaker Power Details workspace
  - – Breaker Trend Data workspace
  - – Panel Power Details workspace
  - – PDU Power Summary workspace
  - – Power By Phase workspace

MTR Endpoints (MTR) subnode
- • MTR Endpoints Navigator item
  - – MTR Endpoints workspace
- • Meter Alarms Navigator item
  - – Meter Alarms workspace
- • Meter Device Configuration Navigator item
  - – Meter Device Configuration workspace
  - – Meter Power Xpert Gateway workspace
- • Meter Device Status Navigator item
  - – Meter Device Phase Status workspace
  - – Meter Device Status workspace
- • Power Measurements Navigator item
  - – Energy Measurements workspace
  - – Power Measurements workspace
- • Power Quality Navigator item
  - – Power Quality workspace
  - – Sag-Surge Power Quality 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.

Eaton Power Xpert Navigator item

Eaton Power Xpert workspace
This workspace is not used.

This workspace contains the following view:

This workspace has no views.

Managed Systems Navigator item

Managed Systems workspace
This workspace displays status information for managed Eaton Power Xpert devices.

This workspace contains the following views:

Subnode Status
Shows the status of the IBM Tivoli Monitoring subnode.

Managed PDUs
Shows the PDUs currently being monitored.

Managed UPS systems
Shows the UPS systems currently being monitored.

Managed Meters
Shows the Meters currently being monitored.

UPS Endpoints subnode

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

UPS Alarms Navigator item

UPS Alarms workspace
This workspace displays information from the active alarms table on the uninterruptible power supply.

This workspace contains the following views:

Alarms by Level
Shows the current count of alarms by the alarm level (critical, cautionary, etc).

Active Alarms
Shows the active alarms which have not yet been acknowledged or cleared.

Acknowledged or Cleared Alarms
Shows the active alarms which have been acknowledged or cleared.

UPS Battery Status Navigator item

UPS Battery Status workspace
This workspace displays information on the uninterruptible power supply's battery.

This workspace contains the following views:

Battery Details
Shows detailed battery charge and power measurements.

Test Status
Shows the latest battery test results.

Output Source
Shows the current output source of the device.

Battery Percent Charge
Shows the present percent charge for the battery.

Voltage
Shows the present voltage measurement for the battery.

Current
Shows the present current measurement for the battery.

Current Plot Chart
Shows the battery current measurement over time.

UPS Device Configuration Navigator item

UPS Device Configuration workspace
This workspace displays configuration information for the uninterruptible power supply.

This workspace contains the following views:

Device Identification
Shows the manufacturer, model, and serial number.

System Information
Shows the system location, contact, and up time information.

Component Configuration
Shows component information from the SNMP Entity MIB.

Component Revision Details
Shows the component software, firmware and hardware revision information from the SNMP Entity MIB. Please note that not all components will have all types of revision information.

Power Strategy
Shows the currently configured power strategy for the device.

Power Configuration
Shows the nameplate power configuration for the device.

Receptacle Configuration
Shows the receptacle configuration for the device. If the device does not support the SNMP receptacle table, this table will be empty.

UPS Power Xpert Gateway workspace
This workspace contains a web browser link to the device's home web page.

This workspace contains the following view:

Browser
Shows a web browser which is used to access the device's home web page.

UPS Device Status Navigator item

UPS Device Status workspace
This workspace shows device status information.

This workspace contains the following views:

Device Component Status
Shows component status information from the SNMP Entity State MIB.

Test Status
Shows the latest test status information.

Input and Output Source
Shows the current input and output sources for the device.

Output Percent Load
Shows the overall output load on the device.

Input and Output Power
Shows the overall input and output power for the device.

Active Alarms
Shows the number of active alarms in the device's alarm table.

UPS Environmental Summary Navigator item

UPS Environmental Summary workspace
This workspace displays data collected from environmental probes on the device.The ambient environmental measurements on this workspace are collected at the air intake for the device. The remote environmental measurements are collected by an Environmental Monitoring Probe, if present. Note that some data in this workspace will be missing if the device does not support collection of environmental data or if it does not have an Environmental Monitoring Probe attached.

This workspace contains the following views:

Current Temperature
Shows the current intake temperature and temperature as measured by an attached Environmental Monitoring Probe, if present.

Current Humidity
Shows the current intake humidity and humidity as measured by an attached Environmental Monitoring Probe, if present.

Temperature Plot Graph
Shows the temperature measurements over time as measured at intake and by an attached Environmental Monitoring Probe, if present.

Environmental Details
Shows measurement details at intake and for an attached Environmental Monitoring Probe, if present.

Contact Sensor Details
Shows contact sensor data as reported by an attached Environmental Monitoring Probe, if present.

UPS Power Summary Navigator item

Power Trend Data workspace
This workspace displays graphical trend data for the uninterruptible power supply.

This workspace contains the following views:

Percent Load
Shows the percent load over time.

Output Power
Shows the output power over time.

UPS Power Summary workspace
This workspace displays power summary information for the uninterruptible power supply.

This workspace contains the following views:

Input By Phase
Shows input current, voltage, and load by phase for the device.

Output By Phase
Shows output current, voltage, and load by phase for the device.

Input Line Bads
Shows the number of input line bads detected by the device.

Percent Load
Shows the output percent load by phase.

Voltage
Shows the input and output voltage by phase.

Current
Shows the input and output current by phase.

Power Shows the output power by phase.

PDU Endpoints subnode

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

PDU Alarms Navigator item

PDU Alarms workspace
This workspace displays information from the active alarms table on the power distribution unit.

This workspace contains the following views:

Alarms by Level
Shows the current count of alarms by the alarm level (critical, cautionary, etc).

Active Alarms
Shows the active alarms which have not yet been acknowledged or cleared. This view contains a link to the Power Xpert Gateway workspace.

Acknowledged or Cleared Alarms
Shows the active alarms which have been acknowledged or cleared. This view contains a link to the Power Xpert Gateway workspace.

PDU Device Configuration Navigator item

PDU Device Configuration workspace
This workspace displays configuration information for the power distribution unit.

This workspace contains the following views:

Device Identification
Shows the manufacturer, model and serial number. This view contains a link to the Power Xpert Gateway workspace.

System Information
Shows the system location, contact, and up time information.

Component Configuration
Shows component information from the SNMP Entity MIB.

Component Revision Details
Shows the component software, firmware and hardware revision information from the SNMP Entity MIB. Please note that not all components will have all types of revision information.

Power Configuration
Shows the nameplate power configuration for the device.

Panel Configuration
Shows the panel configuration for the device.

PDU Power Xpert Gateway workspace
This workspace contains a web browser link to the device's home web page.

This workspace contains the following view:

Browser
Shows a web browser which is used to access the device's home web page.

PDU Device Status Navigator item

PDU Device Status workspace
This workspace shows device status information.

This workspace contains the following views:

Device Component Status
Shows component status information from the SNMP Entity State MIB.

Output Percent Load
Shows the overall output load on the device.

VA Demand
Shows the overall VA demand on the device.

Active Alarms
Shows the number of active alarms in the device's alarm table.

PDU Environmental Summary Navigator item

PDU Environmental Summary workspace
This workspace displays data collected from environmental probes on the

device. Note that the views in this workspace will be empty if the device does not support collection of environmental data.

This workspace contains the following views:

Current Temperature
> Shows the current temperature as measured by an attached Environmental Monitoring Probe, if present.

Current Humidity
> Shows the current humidity as measured by an attached Environmental Monitoring Probe, if present.

Temperature Plot Graph
> Shows the temperature measurements over time as measured by an attached Environmental Monitoring Probe, if present.

Environmental Details
> Shows measurement and configuration details for an attached Environmental Monitoring Probe, if present.

Contact Sensor Details
> Shows contact sensor data as reported by an attached Environmental Monitoring Probe, if present.

PDU Metering Data Navigator item

Breaker Meters workspace
> This workspace displays breaker meter data for a selected panel.

> This workspace contains the following view:

Breaker Meters
> Shows breaker meter data for a selected panel.

PDU Metering Data workspace
> This workspace displays metering and energy usage data for the power distribution unit.

> This workspace contains the following views:

PDU Output Metering
> Shows overall metering data for the device.

PDU Panel Metering
> Shows panel metering data for the device. This view contains a link to PDU Breaker Metering workspace.

PDU Output Energy Usage
> Shows overall device output energy usage over time.

PDU Panel Energy Usage
> Shows overall device output energy usage by panel over time.

PDU Power Summary Navigator item

Breaker Power Details workspace
> This workspace displays breaker power measurements for the selected panel.

> This workspace contains the following views:

Breaker Ratings
> Shows breaker power ratings for the selected panel.

Breakers with No Load
Shows the breakers on this panel which have no load.

Breaker Power Details By Phase
Shows detailed power data by phase for each breaker on the panel. This view contains a link to the Breaker Trend Data workspace.

Most Heavily Loaded Breakers
Shows the most heavily loaded breakers on the panel.

Breaker Trend Data workspace
This workspace displays graphical trend data for the selected breaker.

This workspace contains the following views:

Percent Load
Shows percent load by phase over time for the breaker.

Power Shows output power usage by phase over time for the breaker.

Current
Shows output current by phase over time for the breaker.

Panel Power Details workspace
This workspace displays power measurements for the selected panel.

This workspace contains the following views:

Panel Power
Shows power details for the selected panel.

Panel Load By Phase
Shows panel current, voltage, and percent load by phase.

Percent Load By Phase
Shows percent load by phase.

Panel Power and VA Demand
Shows the present VA Demand and Power measurements for the panel.

Current By Phase
Shows present current measurement by phase for the panel.

Voltage By Phase
Shows present voltage measurement by phase for the panel.

PDU Power Summary workspace
This workspace displays power summary information for the power distribution unit.

This workspace contains the following views:

Nameplate Ratings
Shows the nameplate power ratings for this device. This view contains a link to the Power By Phase workspace.

Panel Power Ratings
Shows the power ratings by panel for this device. This view contains links to the Panel Power Details, Panel Trend Data, and Breaker Power Details workspaces.

Panel Power By Load
Shows the power usage for all panels sorted by load.This view contains links to the Panel Power Details and Panel Trend Data workspaces.

Input and Output Power
> Shows the overall present input and output power measurements for the device.

Input Frequency
> Shows the present input frequency measurement for the device.

Ground and Neutral Current
> Shows the present ground and neutral current measurements for the device.

Power By Phase workspace
> This workspace displays overall power measurements by phase for the device.
>
> This workspace contains the following views:

Input Power By Phase
> Shows input voltage, current, and percent load by phase.

Output Power By Phase
> Shows output voltage, current, and percent load by phase.

Input Percent Load
> Shows input percent load by phase.

Output Percent Load
> Shows output percent load by phase.

Voltage By Phase
> Shows input and output voltage by phase.

Current By Phase
> Shows input and output current by phase.

MTR Endpoints subnode

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

Meter Alarms Navigator item

Meter Alarms workspace
> This workspace displays information from the active alarms table on the meter.
>
> This workspace contains the following views:

Alarms by Level
> Shows the current count of alarms by the alarm level (critical, cautionary, etc).

Active Alarms
> Shows the active alarms which have not yet been acknowledged or cleared. This view contains a link to the Power Xpert Gateway workspace.

Acknowledged or Cleared Alarms
> Shows the active alarms which have been acknowledged or cleared. This view contains a link to the Power Xpert Gateway workspace.

Meter Device Configuration Navigator item

Meter Device Configuration workspace
This workspace displays configuration information for the meter.

This workspace contains the following views:

Device Identification
Shows the manufacturer, model, and serial number.

System Information
Shows the system location, contact, and up time information.

Component Configuration
Shows component information from the SNMP Entity MIB. This view contains a link to the Power Xpert Gateway workspace.

Component Revision Details
Shows the component software, firmware and hardware revision information from the SNMP Entity MIB. Please note that not all components will have all types of revision information.

Meter Power Xpert Gateway workspace
This workspace contains a web browser link to the device's home web page.

This workspace contains the following view:

Browser
Shows a web browser which is used to access the device's home web page.

Meter Device Status Navigator item

Meter Device Phase Status workspace
This workspace shows present, overall device status for each phase.

This workspace contains the following views:

Device Status
Shows component status information from the SNMP Entity State MIB.

Voltage LL and LN by Phase
Shows the present line-to-line and line-to-neutral voltage for each phase.

Watts, VA, and VAR by Phase
Shows the present demand in Watts, VA (apparent power), and VAR (reactive power) for each phase.

Current by Phase
Shows the present rms current multiplied by 10 for each phase.

Power Factor by Phase
Shows the present apparent power factor for each phase multiplied by 100.

Meter Realtime Phase Measures
Shows the present voltage, current, and power readings for each phase.

Meter Device Status workspace
This workspace shows present, overall device status across all phases.

This workspace contains the following views:

Device Status
Shows component status information from the SNMP Entity State MIB.

Ground and Neutral Current
Shows the ground line current and neutral line current.

Total Watts, VA, and VAR
Shows the present demand in Watts, VA (apparent power), and VAR (reactive power), totaled for all phases.

Power Factor
Shows the apparent power factor for all phases in percent.

Frequency
Shows the present frequency reading, multiplied by 100.

BTUs Per Hour
Shows the present value of BTU/hr, totaled for all phases.

Realtime Measures
Shows the present, overall voltage, current, and power readings for all phases.

Power Measurements Navigator item

Energy Measurements workspace
This workspace shows the cumulative power times hour readings in kWh, kVAh, and kVARh across all phases.

This workspace contains the following views:

Total Energy Consumption for Watts, VA, and VAR
Shows the cumulative energy in kWh, kVAh, and kVARh across all phases.

Last Energy Reset Date
Shows the date and time of the last reset of the energy measures.

Energy Measurements
Shows the cumulative power times hour readings in kWh, kVAh, and kVARh across all phases.

Power Measurements workspace
Summary of present and peak demand measurements across all phases.

This workspace contains the following views:

Peak and Present Demand for Watts, VA, and VAR
Shows the peak and present demand in kilowatts, KVA, and KVAR.

Last Peak Reset Date
Shows the date and time of the last reset of the peak demand measures.

Demand Measures
Shows the present and peak demand measurements across all phases.

Power Quality Navigator item

Power Quality workspace

The summary of power quality across all phases of the meter.

This workspace contains the following views:

Trend Graph of Power Quality

Shows the trends of the most recent Power Quality Index over a short term interval, such as 10 minutes.

Present Power Quality and Average Last 24 Hour Power Quality

Shows the most recent Power Quality Index over a short term interval, such as 10 minutes, and the longer-term Power Quality Index for the past 24 hour interval.

Total Demand Distortion and Total Harmonic Distortion

Shows the Total Demand Distortion of all the Current waveforms and the Total Harmonic Distortion of all Voltage waveforms for all harmonics across all phases.

Power Quality Measures

Shows the power quality measurements across all phases of the meter.

Sag-Surge Power Quality workspace

This workspace shows Voltage Sag and Surge counts across all phases grouped by ITIC curve levels.

This workspace contains the following views:

Sag and Surge Counts

Shows the sag count and surge count for each ITIC curve level across all phases.

Last Sag-Surge Reset Date

Shows the date and time of the last reset of the sag-surge counts.

Sage-Surge Power Quality

Shows the Voltage Sag and Surge counts across all phases grouped by ITIC curve levels.

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 being measured and reported by the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert 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 new 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 IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert 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 *IBM Tivoli Monitoring 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 IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert 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 Tivoli Data Warehouse. If the maximum name is 30 characters, then any warehouse table name longer than 30 characters is shortened to the table name.

* Attribute group name: Managed Meter Systems
  - Table name: KE8MGDMTR
  - Warehouse table name: KE8_MANAGED_METER_SYSTEMS or KE8MGDMTR
* Attribute group name: Managed PDU Systems
  - Table name: KE8MGDPDU

- – Warehouse table name: KE8_MANAGED_PDU_SYSTEMS or KE8MGDPDU
- Attribute group name: Managed UPS Systems
  - – Table name: KE8MGDUPS
  - – Warehouse table name: KE8_MANAGED_UPS_SYSTEMS or KE8MGDUPS
- Attribute group name: Meter Active Alarms
  - – Table name: KE8MTRACAI
  - – Warehouse table name: KE8_METER_ACTIVE_ALARMS or KE8MTRACAI
- Attribute group name: Meter Active Alarms URI
  - – Table name: KE8MTRACTA
  - – Warehouse table name: KE8_METER_ACTIVE_ALARMS_URI or KE8MTRACTA
- Attribute group name: Meter Alarms
  - – Table name: KE8MTRALRM
  - – Warehouse table name: KE8_METER_ALARMS or KE8MTRALRM
- Attribute group name: Meter Demand Measures
  - – Table name: KE8PWRMET3
  - – Warehouse table name: KE8_METER_DEMAND_MEASURES or KE8PWRMET3
- Attribute group name: Meter Energy Measures
  - – Table name: KE8PWRMET2
  - – Warehouse table name: KE8_METER_ENERGY_MEASURES or KE8PWRMET2
- Attribute group name: Meter Measures
  - – Table name: KE8PCDMEAS
  - – Warehouse table name: KE8_METER_MEASURES or KE8PCDMEAS
- Attribute group name: Meter Min Avg Max
  - – Table name: KE8PWRMET1
  - – Warehouse table name: KE8_METER_MIN_AVG_MAX or KE8PWRMET1
- Attribute group name: Meter Phase Measures
  - – Table name: KE8PCDPHAS
  - – Warehouse table name: KE8_METER_PHASE_MEASURES or KE8PCDPHAS
- Attribute group name: Meter Physical Configuration
  - – Table name: KE8MTRPHYS
  - – Warehouse table name: KE8_METER_PHYSICAL_CONFIGURATION or KE8MTRPHYS
- Attribute group name: Meter Power Qualilty Sag Surge
  - – Table name: KE8MTRPQSA
  - – Warehouse table name: KE8_METER_POWER_QUALILTY_SAG_SURGE or KE8MTRPQSA
- Attribute group name: Meter Power Quality Measures
  - – Table name: KE8MTRPOWE
  - – Warehouse table name: KE8_METER_POWER_QUALITY_MEASURES or KE8MTRPOWE
- Attribute group name: Meter Realtime Measures
  - – Table name: KE8PWRMETE

- Warehouse table name: KE8_METER_REALTIME_MEASURES or KE8PWRMETE
- Attribute group name: Meter Realtime Phase Measures
  - Table name: KE8PWRMET0
  - Warehouse table name: KE8_METER_REALTIME_PHASE_MEASURES or KE8PWRMET0
- Attribute group name: Meter System Information
  - Table name: KE8MTRSYS
  - Warehouse table name: KE8_METER_SYSTEM_INFORMATION or KE8MTRSYS
- Attribute group name: MTR ID
  - Table name: KE8MTRID
  - Warehouse table name: KE8_MTR_ID or KE8MTRID
- Attribute group name: MTR Performance Object Status
  - Table name: KE8MTRPOS
  - Warehouse table name: KE8_MTR_PERFORMANCE_OBJECT_STATUS or KE8MTRPOS
- Attribute group name: MTR URI
  - Table name: KE8MTRURI
  - Warehouse table name: KE8_MTR_URI or KE8MTRURI
- Attribute group name: PDU Active Alarms
  - Table name: KE8PDUACAI
  - Warehouse table name: KE8_PDU_ACTIVE_ALARMS or KE8PDUACAI
- Attribute group name: PDU Active Alarms URI
  - Table name: KE8PDUACTA
  - Warehouse table name: KE8_PDU_ACTIVE_ALARMS_URI or KE8PDUACTA
- Attribute group name: PDU Alarms
  - Table name: KE8PDUALRM
  - Warehouse table name: KE8_PDU_ALARMS or KE8PDUALRM
- Attribute group name: PDU Breaker Meters Table
  - Table name: KE8PDUBMT
  - Warehouse table name: KE8_PDU_BREAKER_METERS_TABLE or KE8PDUBMT
- Attribute group name: PDU Breaker Phase Meters Table
  - Table name: KE8PDUBPMT
  - Warehouse table name: KE8_PDU_BREAKER_PHASE_METERS_TABLE or KE8PDUBPMT
- Attribute group name: PDU Breaker Ratings Table
  - Table name: KE8PDUBRT
  - Warehouse table name: KE8_PDU_BREAKER_RATINGS_TABLE or KE8PDUBRT
- Attribute group name: PDU Contact Sensor Table
  - Table name: KE8PDUCON
  - Warehouse table name: KE8_PDU_CONTACT_SENSOR_TABLE or KE8PDUCON
- Attribute group name: PDU Environment

- – Table name: KE8PDUENV
- – Warehouse table name: KE8_PDU_ENVIRONMENT or KE8PDUENV
- Attribute group name: PDU ID
  - – Table name: KE8PDUID
  - – Warehouse table name: KE8_PDU_ID or KE8PDUID
- Attribute group name: PDU Input
  - – Table name: KE8PDUINP
  - – Warehouse table name: KE8_PDU_INPUT or KE8PDUINP
- Attribute group name: PDU Input Output
  - – Table name: KE8PDUIOT
  - – Warehouse table name: KE8_PDU_INPUT_OUTPUT or KE8PDUIOT
- Attribute group name: PDU Input Output Table
  - – Table name: KE8PDUWOUT
  - – Warehouse table name: KE8_PDU_INPUT_OUTPUT_TABLE or KE8PDUWOUT
- Attribute group name: PDU Input Table
  - – Table name: KE8PDUINPT
  - – Warehouse table name: KE8_PDU_INPUT_TABLE or KE8PDUINPT
- Attribute group name: PDU Nameplate
  - – Table name: KE8PDUNAME
  - – Warehouse table name: KE8_PDU_NAMEPLATE or KE8PDUNAME
- Attribute group name: PDU Output
  - – Table name: KE8PDUOUT
  - – Warehouse table name: KE8_PDU_OUTPUT or KE8PDUOUT
- Attribute group name: PDU Output Table
  - – Table name: KE8PDUOUTT
  - – Warehouse table name: KE8_PDU_OUTPUT_TABLE or KE8PDUOUTT
- Attribute group name: PDU Panel Meters Table
  - – Table name: KE8PDUPMT
  - – Warehouse table name: KE8_PDU_PANEL_METERS_TABLE or KE8PDUPMT
- Attribute group name: PDU Panel Phase Meters Table
  - – Table name: KE8PDUPPMT
  - – Warehouse table name: KE8_PDU_PANEL_PHASE_METERS_TABLE or KE8PDUPPMT
- Attribute group name: PDU Panel Ratings Table
  - – Table name: KE8PDUPRT
  - – Warehouse table name: KE8_PDU_PANEL_RATINGS_TABLE or KE8PDUPRT
- Attribute group name: PDU Performance Object Status
  - – Table name: KE8PDUPOS
  - – Warehouse table name: KE8_PDU_PERFORMANCE_OBJECT_STATUS or KE8PDUPOS
- Attribute group name: PDU Physical Configuration
  - – Table name: KE8PDUPHYS
  - – Warehouse table name: KE8_PDU_PHYSICAL_CONFIGURATION or KE8PDUPHYS
- Attribute group name: PDU System Information

- – Table name: KE8PDUSYS
- – Warehouse table name: KE8_PDU_SYSTEM_INFORMATION or KE8PDUSYS
- Attribute group name: PDU URI
  - – Table name: KE8PDUURI
  - – Warehouse table name: KE8_PDU_URI or KE8PDUURI
- Attribute group name: Performance Object Status
  - – Table name: KE8POBJST
  - – Warehouse table name: KE8_PERFORMANCE_OBJECT_STATUS or KE8POBJST
- Attribute group name: Thread Pool Status
  - – Table name: KE8THPLST
  - – Warehouse table name: KE8_THREAD_POOL_STATUS or KE8THPLST
- Attribute group name: UPS Active Alarms
  - – Table name: KE8UPSACAI
  - – Warehouse table name: KE8_UPS_ACTIVE_ALARMS or KE8UPSACAI
- Attribute group name: UPS Active Alarms URI
  - – Table name: KE8UPSACTA
  - – Warehouse table name: KE8_UPS_ACTIVE_ALARMS_URI or KE8UPSACTA
- Attribute group name: UPS Alarms
  - – Table name: KE8UPSALRM
  - – Warehouse table name: KE8_UPS_ALARMS or KE8UPSALRM
- Attribute group name: UPS Battery
  - – Table name: KE8UPSBAT
  - – Warehouse table name: KE8_UPS_BATTERY or KE8UPSBAT
- Attribute group name: UPS Bypass
  - – Table name: KE8UPSBYP
  - – Warehouse table name: KE8_UPS_BYPASS or KE8UPSBYP
- Attribute group name: UPS Bypass Table
  - – Table name: KE8UPSBYPT
  - – Warehouse table name: KE8_UPS_BYPASS_TABLE or KE8UPSBYPT
- Attribute group name: UPS Contact Table
  - – Table name: KE8UPSCON
  - – Warehouse table name: KE8_UPS_CONTACT_TABLE or KE8UPSCON
- Attribute group name: UPS Environment
  - – Table name: KE8UPSENV
  - – Warehouse table name: KE8_UPS_ENVIRONMENT or KE8UPSENV
- Attribute group name: UPS ID
  - – Table name: KE8UPSID
  - – Warehouse table name: KE8_UPS_ID or KE8UPSID
- Attribute group name: UPS Identification
  - – Table name: KE8UPSIDE
  - – Warehouse table name: KE8_UPS_IDENTIFICATION or KE8UPSIDE
- Attribute group name: UPS Identification URI
  - – Table name: KE8UPSIDU
  - – Warehouse table name: KE8_UPS_IDENTIFICATION_URI or KE8UPSIDU

- Attribute group name: UPS Input
  - Table name: KE8UPSINP
  - Warehouse table name: KE8_UPS_INPUT or KE8UPSINP
- Attribute group name: UPS Input Output
  - Table name: KE8UPSIO
  - Warehouse table name: KE8_UPS_INPUT_OUTPUT or KE8UPSIO
- Attribute group name: UPS Input Output Table
  - Table name: KE8UPSIOT
  - Warehouse table name: KE8_UPS_INPUT_OUTPUT_TABLE or KE8UPSIOT
- Attribute group name: UPS Input Table
  - Table name: KE8UPSINPT
  - Warehouse table name: KE8_UPS_INPUT_TABLE or KE8UPSINPT
- Attribute group name: UPS Output
  - Table name: KE8UPSOUT
  - Warehouse table name: KE8_UPS_OUTPUT or KE8UPSOUT
- Attribute group name: UPS Output Table
  - Table name: KE8UPSOUTT
  - Warehouse table name: KE8_UPS_OUTPUT_TABLE or KE8UPSOUTT
- Attribute group name: UPS Performance Object Status
  - Table name: KE8UPSPOS
  - Warehouse table name: KE8_UPS_PERFORMANCE_OBJECT_STATUS or KE8UPSPOS
- Attribute group name: UPS Physical Configuration
  - Table name: KE8UPSPHYS
  - Warehouse table name: KE8_UPS_PHYSICAL_CONFIGURATION or KE8UPSPHYS
- Attribute group name: UPS Power Configuration
  - Table name: KE8UPSCFG
  - Warehouse table name: KE8_UPS_POWER_CONFIGURATION or KE8UPSCFG
- Attribute group name: UPS Receptacle Table
  - Table name: KE8UPSRECT
  - Warehouse table name: KE8_UPS_RECEPTACLE_TABLE or KE8UPSRECT
- Attribute group name: UPS System Information
  - Table name: KE8UPSSYS
  - Warehouse table name: KE8_UPS_SYSTEM_INFORMATION or KE8UPSSYS
- Attribute group name: UPS Test
  - Table name: KE8UPSTES
  - Warehouse table name: KE8_UPS_TEST or KE8UPSTES
- Attribute group name: UPS Topology
  - Table name: KE8UPSTOP
  - Warehouse table name: KE8_UPS_TOPOLOGY or KE8UPSTOP
- Attribute group name: UPS URI
  - Table name: KE8UPSURI
  - Warehouse table name: KE8_UPS_URI or KE8UPSURI

- Attribute group name: WH PDU Breaker Meters Table
  - Table name: KE8PDUWBMT
  - Warehouse table name: KE8_WH_PDU_BREAKER_METERS_TABLE or KE8PDUWBMT
- Attribute group name: WH PDU Breaker Phase Meters Table
  - Table name: KE8PDUWBM2
  - Warehouse table name: KE8_WH_PDU_BREAKER_PHASE_METERS_TABLE or KE8PDUWBM2
- Attribute group name: WH PDU Breaker Ratings Table
  - Table name: KE8PDUWBRT
  - Warehouse table name: KE8_WH_PDU_BREAKER_RATINGS_TABLE or KE8PDUWBRT
- Attribute group name: WH PDU Environment
  - Table name: KE8PDUWENV
  - Warehouse table name: KE8_WH_PDU_ENVIRONMENT or KE8PDUWENV
- Attribute group name: WH PDU Input
  - Table name: KE8PDUWINP
  - Warehouse table name: KE8_WH_PDU_INPUT or KE8PDUWINP
- Attribute group name: WH PDU Input Table
  - Table name: KE8PDUWINT
  - Warehouse table name: KE8_WH_PDU_INPUT_TABLE or KE8PDUWINT
- Attribute group name: WH PDU Nameplate
  - Table name: KE8PDUWNAM
  - Warehouse table name: KE8_WH_PDU_NAMEPLATE or KE8PDUWNAM
- Attribute group name: WH PDU Output
  - Table name: KE8PDUIO
  - Warehouse table name: KE8_WH_PDU_OUTPUT or KE8PDUIO
- Attribute group name: WH PDU Output Table
  - Table name: KE8PDUWOTT
  - Warehouse table name: KE8_WH_PDU_OUTPUT_TABLE or KE8PDUWOTT
- Attribute group name: WH PDU Panel Meters Table
  - Table name: KE8PDUWPMT
  - Warehouse table name: KE8_WH_PDU_PANEL_METERS_TABLE or KE8PDUWPMT
- Attribute group name: WH PDU Panel Phase Meters Table
  - Table name: KE8PDUWPM2
  - Warehouse table name: KE8_WH_PDU_PANEL_PHASE_METERS_TABLE or KE8PDUWPM2
- Attribute group name: WH PDU Panel Ratings Table
  - Table name: KE8PDUWPRT
  - Warehouse table name: KE8_WH_PDU_PANEL_RATINGS_TABLE or KE8PDUWPRT
- Attribute group name: WH UPS Bypass
  - Table name: KE8UPSWBYP
  - Warehouse table name: KE8_WH_UPS_BYPASS or KE8UPSWBYP
- Attribute group name: WH UPS Bypass Table

- Table name: KE8UPSWBYT
- Warehouse table name: KE8_WH_UPS_BYPASS_TABLE or KE8UPSWBYT
- Attribute group name: WH UPS Environment
  - Table name: KE8UPSWENV
  - Warehouse table name: KE8_WH_UPS_ENVIRONMENT or KE8UPSWENV
- Attribute group name: WH UPS Input
  - Table name: KE8UPSWINP
  - Warehouse table name: KE8_WH_UPS_INPUT or KE8UPSWINP
- Attribute group name: WH UPS Input Table
  - Table name: KE8UPSWINT
  - Warehouse table name: KE8_WH_UPS_INPUT_TABLE or KE8UPSWINT
- Attribute group name: WH UPS Output
  - Table name: KE8UPSWOUT
  - Warehouse table name: KE8_WH_UPS_OUTPUT or KE8UPSWOUT
- Attribute group name: WH UPS Output Table
  - Table name: KE8UPSWOTT
  - Warehouse table name: KE8_WH_UPS_OUTPUT_TABLE or KE8UPSWOTT
- Attribute group name: WH UPS Power Configuration
  - Table name: KE8UPSWCFG
  - Warehouse table name: KE8_WH_UPS_POWER_CONFIGURATION or KE8UPSWCFG
- Attribute group name: WH UPS Topology
  - Table name: KE8UPSWTOP
  - Warehouse table name: KE8_WH_UPS_TOPOLOGY or KE8UPSWTOP

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 and type 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.

Managed Meter Systems attribute group

Managed Eaton Meter Systems If the warehouse default setting is enabled, data for this attribute group is not stored in Tivoli Data Warehouse.

Historical group

This attribute group is not part of the default historical group, and is not eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the Managed Meter Systems attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
> > The managed system name of the agent.
>
> **Type**   String

Timestamp attribute

> **Description**
> > The local time at the agent when the data was collected.
>
> **Type**   String

Subnode MSN attribute

> **Description**
> > This is the Managed System Name of the subnode agent.
>
> **Type**   String

Subnode Affinity attribute

> **Description**
> > This is the affinity for the subnode agent.
>
> **Type**   String

Subnode Type attribute - This attribute is a key attribute.

> **Description**
> > This is the Node Type of this subnode.
>
> **Type**   String

Subnode Resource Name attribute

> **Description**
> > This is the Resource Name of the subnode agent.
>
> **Type**   String

Subnode Version attribute

> **Description**
> > This is the Version of the subnode agent.
>
> **Type**   String

Managed PDU Systems attribute group

Managed Eaton PDU Systems If the warehouse default setting is enabled, data for this attribute group is not stored in Tivoli Data Warehouse.

Historical group

This attribute group is not part of the default historical group, and is not eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the Managed PDU Systems attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
> > The managed system name of the agent.
>
> **Type**   String

Timestamp attribute

> **Description**
> > The local time at the agent when the data was collected.
>
> **Type**   String

Subnode MSN attribute

> **Description**
> > This is the Managed System Name of the subnode agent.
>
> **Type**   String

Subnode Affinity attribute

> **Description**
> > This is the affinity for the subnode agent.
>
> **Type**   String

Subnode Type attribute - This attribute is a key attribute.

> **Description**
> > This is the Node Type of this subnode.
>
> **Type**   String

Subnode Resource Name attribute

> **Description**
> > This is the Resource Name of the subnode agent.
>
> **Type**   String

Subnode Version attribute

> **Description**
> > This is the Version of the subnode agent.
>
> **Type**   String

Managed UPS Systems attribute group

Managed Eaton UPS Systems If the warehouse default setting is enabled, data for this attribute group is not stored in Tivoli Data Warehouse.

Historical group

This attribute group is not part of the default historical group, and is not eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the Managed UPS Systems attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
>> The managed system name of the agent.
>
> **Type**   String

Timestamp attribute

> **Description**
>> The local time at the agent when the data was collected.
>
> **Type**   String

Subnode MSN attribute

> **Description**
>> This is the Managed System Name of the subnode agent.
>
> **Type**   String

Subnode Affinity attribute

> **Description**
>> This is the affinity for the subnode agent.
>
> **Type**   String

Subnode Type attribute - This attribute is a key attribute.

> **Description**
>> This is the Node Type of this subnode.
>
> **Type**   String

Subnode Resource Name attribute

> **Description**
>> This is the Resource Name of the subnode agent.
>
> **Type**   String

Subnode Version attribute

> **Description**
>> This is the Version of the subnode agent.
>
> **Type**   String

Meter Active Alarms attribute group

Data gathered from SNMP Object activeAlarmsTable in the Eaton PXG MIB. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the Meter Active Alarms attribute group:

Node attribute - This attribute is a key attribute.

>**Description**
>The managed system name of the agent.

>**Type**   String

Timestamp attribute

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

>**Type**   String

Alarm ID attribute - This attribute is a key attribute.

>**Description**
>A unique identifier for the alarm.

>**Type**   Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>- Value_Exceeds_Maximum (2147483647)
>- Value_Exceeds_Minimum (-2147483648)
>
>Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Alarm Sequence Index attribute

>**Description**
>A unique identifier for a sequence of alarms using the same alarm 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:
>- 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.

Alarm Description attribute

>**Description**
>A text description of the event or alarm.

>**Type**   String

Alarm Value attribute

>**Description**
>Source and value of the node that caused the event or alarm.

>**Type**   String

Alarm Level attribute

Description
Present level of the alarm.

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:
- critical (1)
- cautionary (2)
- acknowledged (3)
- active (4)
- cleared (5)
- closed (6)
- unknown (7)

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

Alarm Time attribute

Description
The value of the system's SNMP sysUpTime object when the alarm condition was detected. If the alarm condition existed before agent startup, the value of the alarm time will equal 0.

Type String

Meter Active Alarms URI attribute group

Data gathered from SNMP Object activeAlarmsTable in the Eaton PXG MIB. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the Meter Active Alarms URI attribute group:

Node attribute - This attribute is a key attribute.

Description
The managed system name of the agent.

Type String

Timestamp attribute

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

Type String

URIs attribute

Description
Additional identification information about the component.

Type String

Alarm ID attribute - This attribute is a key attribute.

Description
A unique identifier for the alarm.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Alarm Sequence Index attribute

Description
A unique identifier for a sequence of alarms using the same alarm 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:

- 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.

Alarm Description attribute

Description
A text description of the event or alarm.

Type String

Alarm Value attribute

Description
Source and value of the node that caused the event or alarm.

Type String

Alarm Level attribute

Description
Present level of the alarm.

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:

- critical (1)
- cautionary (2)
- acknowledged (3)
- active (4)
- cleared (5)
- closed (6)
- unknown (7)

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

Alarm Time attribute

> **Description**
>> The value of the system's SNMP sysUpTime object when the alarm condition was detected. If the alarm condition existed before agent startup, the value of the alarm time will equal 0.
>
> **Type** String

Meter Alarms attribute group

Data gathered from SNMP Object alarms in the Eaton PXG MIB. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

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

Node attribute - This attribute is a key attribute.

> **Description**
>> The managed system name of the agent.
>
> **Type** String

Timestamp attribute

> **Description**
>> The local time at the agent when the data was collected.
>
> **Type** String

Number of Alarms Present attribute

> **Description**
>> The present number of active alarm conditions.
>
> **Type** Integer (Gauge) with enumerated values. 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.

Meter Demand Measures attribute group

Data gathered from SNMP Object pwrMeterDemandMeasuresTable. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the Meter Demand Measures attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
>> The managed system name of the agent.
>
> **Type** String

Timestamp attribute

> **Description**
>> The local time at the agent when the data was collected.
>
> **Type** String

IntervalType attribute - This attribute is a key attribute.

> **Description**
>> Enumerated value that tells which type of Demand Interval the Power Meter is using: a Fixed (block), Sliding (rolling), or Sync (end-of-interval pulse) window.
>
> **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:
>> - fixed (1)
>> - sliding (2)
>> - sync (3)
>> - unknown (4)
>
>> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

MeterIndex attribute - This attribute is a key attribute.

> **Description**
>> The Power Meter identifier (meter number). Used to index all tables in this MIB. Normally equal to the meter's entPhysicalIndex.
>
> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>> - Value_Exceeds_Maximum (2147483647)
>> - Value_Exceeds_Minimum (-2147483648)
>
>> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

DemandInterval attribute - This attribute is a key attribute.

> **Description**
>> The interval, in minutes, used as the window for the meter's Demand measures.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Subinterval attribute - This attribute is a key attribute.

Description
The subinterval, in minutes, used by this meter as the update interval for a Sliding Demand window. For example, a meter may have a Sliding 15 minute Demand Interval with updates every 5 minutes (the Subinterval). This object has no meaning for pwrMtrDe.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

KiloWatts attribute

Description
The average Watts Demand measured over the last Demand period, totaled from all phases.

Type Integer (Gauge) with enumerated values. 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.

PeakKiloWatts attribute

Description
The highest pwrMtrDemandKiloWatts measured since the last operator reset of the Demand measures.

Type Integer (Counter) with enumerated values. 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.

KVA attribute

Description

The average Volt-Ampere Demand measured over the last Demand period, totaled from all phases.

Type Integer (Gauge) with enumerated values. 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.

PeakKVA attribute

Description

The highest pwrMtrDemandKVA measured since the last operator reset of the Demand measures.

Type Integer (Counter) with enumerated values. 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.

KVAR attribute

Description

The average Volt-Ampere-Reactive Demand measured over the last Demand period, totaled from all phases.

Type Integer (Gauge) with enumerated values. 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.

PeakKVAR attribute

Description

The highest pwrMtrDemandKVAR measured since the last operator reset of the Demand measures.

Type Integer (Counter) with enumerated values. 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.

LastPeakReset attribute

Description
Indicates (in text) the date and time of the last reset of the Peak Demand measures in this pwrMeterDemandMeasuresEntry.

Type String

Meter Energy Measures attribute group

Data gathered from SNMP Object pwrMeterEnergyMeasuresTable If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the Meter Energy Measures attribute group:

Node attribute - This attribute is a key attribute.

Description
The managed system name of the agent.

Type String

Timestamp attribute

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

Type String

KiloWattHours attribute

Description
The cumulative value of net kiloWatt-hours (kWh), totaled from all phases since the last operator reset of the energy measures.

Type Integer (Counter) with enumerated values. 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.

MeterIndex attribute - This attribute is a key attribute.

Description
The Power Meter identifier (meter number). Used to index all tables in this MIB. Normally equal to the meter's entPhysicalIndex.

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

- Value_Exceeds_Maximum (2147483647)

> • Value_Exceeds_Minimum (-2147483648)

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

KiloVAHours attribute

Description
> The cumulative value of kiloVolt-Ampere-hours (kVAh), totaled from all phases since the last operator reset of the energy measures.

Type Integer (Counter) with enumerated values. 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.

KiloVARHours attribute

Description
> The cumulative value of net kiloVolt-Amps-Reactive-hours (kVARh), totaled from all phases since the last operator reset of the energy measures.

Type Integer (Counter) with enumerated values. 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.

LastEnergyReset attribute

Description
> Indicates (in text) the date and time of the last reset of the Energy measures in this pwrMeterEnergyMeasuresEntry.

Type String

Meter Measures attribute group

Data gathered from SNMP Object pcdMeasuresTable. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

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

Node attribute - This attribute is a key attribute.

>
> **Description**
>> The managed system name of the agent.
>
> **Type** String

Timestamp attribute

>
> **Description**
>> The local time at the agent when the data was collected.
>
> **Type** String

MeterIndex attribute - This attribute is a key attribute.

>
> **Description**
>> The Power Chain Device identifier (device number). Used to index all tables in this MIB. Normally equal to the device's entPhysicalIndex.
>
> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>> - Value_Exceeds_Maximum (2147483647)
>> - Value_Exceeds_Minimum (-2147483648)
>>
>> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

MainVoltage attribute

>
> **Description**
>> The present main voltage for this device. The measure will be device-specific. The type of this measures is indicated by pcdMainVoltageType.
>
> **Type** Integer (Gauge) with enumerated values. 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.

MainVoltageType attribute

>
> **Description**
>> Indicates what type of reading pcdMeasuresMainVoltage is. This may be units like 'Vrms Line-Line' or 'Vrms Line-Neutral', or the name of the source of this reading in the device's terms.
>
> **Type** String

SecondVoltage attribute

>
> **Description**
>> The present second voltage for this device. The measure will be device-specific. The type of this measures is indicated by pcdSecondVoltageType.
>
> **Type** Integer (Gauge) with enumerated values. 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.

SecondVoltageType attribute

Description
Indicates what type of reading pcdMeasuresSecondVoltage is. This may be units like 'Vrms Line-Line' or 'Vrms Line-Neutral', or the name of the source of this reading in the device's terms.

Type   String

Current attribute

Description
The present summary current for this device. This may be the 3-phase 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:
- 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.

PercentLoad attribute

Description
The percentage of the Power Chain Device's rated capacity currently being 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:
- 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.

Frequency attribute

Description
The present frequency reading for this Power Chain 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:
- 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.

Meter Min Avg Max attribute group

Data gathered from SNMP Object pwrMeterMinAvgMaxTable If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the Meter Min Avg Max attribute group:

Node attribute - This attribute is a key attribute.

>**Description**
>>The managed system name of the agent.
>
>**Type**   String

Timestamp attribute

>**Description**
>>The local time at the agent when the data was collected.
>
>**Type**   String

MeterIndex attribute - This attribute is a key attribute.

>**Description**
>>The Power Meter identifier (meter number). Used to index all tables in this MIB. Normally equal to the meter's entPhysicalIndex.
>
>**Type**   Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>>- Value_Exceeds_Maximum (2147483647)
>>- Value_Exceeds_Minimum (-2147483648)
>
>>Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

MinAvgMaxTag attribute - This attribute is a key attribute.

>**Description**
>>A short tag to identify this row; one of 'min', 'avg', or 'max'.
>
>**Type**   String

VoltageLN attribute

>**Description**
>>The minimum, average, or maximum Line-to-Neutral voltage recorded by this meter since the operator last reset the min/max values.
>
>**Type**   Integer (Gauge) with enumerated values. 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.

LineCurrent attribute

> **Description**
> > The minimum, average, or maximum current recorded by this meter for any phase (line) since the operator last reset the min/max values.
>
> **Type** Integer (Gauge) with enumerated values. 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.

NeutralCurrent attribute

> **Description**
> > The minimum, average, or maximum neutral line current recorded by this meter since the operator last reset the min/max values.
>
> **Type** Integer (Gauge) with enumerated values. 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.

Frequency attribute

> **Description**
> > The minimum, average, or maximum frequency recorded by this meter since the operator last reset the min/max values. The reading is multiplied by 100 to preserve accuracy.
>
> **Type** Integer (Gauge) with enumerated values. 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.

PowerFactor attribute

> **Description**
> > The minimum, average, or maximum apparent power factor recorded by this meter since the operator last reset the min/max values. The reading is multiplied by 100 to preserve accuracy.
>
> **Type** Integer (Gauge) with enumerated values. 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.

Meter Phase Measures attribute group

Data gathered from SNMP Object pcdPhaseMeasuresTable. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the Meter Phase Measures attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
> The managed system name of the agent.

> **Type** String

Timestamp attribute

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

> **Type** String

MeterIndex attribute - This attribute is a key attribute.

> **Description**
> The Power Chain Device identifier (device number). Used to index all tables in this MIB. Normally equal to the device's entPhysicalIndex.

> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
> - Value_Exceeds_Maximum (2147483647)
> - Value_Exceeds_Minimum (-2147483648)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

PhaseIndex attribute - This attribute is a key attribute.

> **Description**
> The line (phase) identifier.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

VoltageLL attribute

Description

The present Line-to-Line voltage for this phase of 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:

- 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.

VoltageLN attribute

Description

The present Line-to-Neutral voltage for this phase of 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:

- 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.

Current attribute

Description

The present current for this phase of 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:

- 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.

PercentLoad attribute

Description

The percentage of this phase's rated capacity presently being 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:

- 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.

Meter Physical Configuration attribute group

Data gathered from SNMP Object entPhysicalTable. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the Meter Physical Configuration attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
> The managed system name of the agent.
>
> **Type**   String

Timestamp attribute

> **Description**
> The local time at the agent when the data was collected.
>
> **Type**   String

Component attribute - This attribute is a key attribute.

> **Description**
> The index for this entry.
>
> **Type**   Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
> - Value_Exceeds_Maximum (2147483647)
> - Value_Exceeds_Minimum (-2147483648)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Description attribute

> **Description**
> A textual description of this component.
>
> **Type**   String

Vendor Type attribute

> **Description**
> The vendor type for this component.
>
> **Type**   String

Class attribute

> **Description**
> The general hardware type.
>
> **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:

- other (1)
- unknown (2)
- chassis (3)
- backplane (4)
- container (5)
- power_supply (6)
- fan (7)
- sensor (8)
- module (9)
- port (10)
- stack (11)
- cpu (12)

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

Name attribute

Description
The name of the component.

Type   String

Hardware Revision attribute

Description
The hardware revision string.

Type   String

Firmware Revision attribute

Description
The firmware revision string.

Type   String

Software Revision attribute

Description
The software revision string.

Type   String

Serial Number attribute

Description
The serial number.

Type   String

Manufacturer Name attribute

Description
The name of the manufacturer of this component.

Type   String

Model Name attribute

Description
>> The model name of this component.

Type String

Asset ID attribute

>**Description**
>> User-assigned asset tracking identifier.

>**Type** String

URIs attribute

>**Description**
>> Additional identification information about the component.

>**Type** String

Administrative State attribute

>**Description**
>> The administrative state for this component.

>**Type** Integer with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>> - unknown (1)
>> - locked (2)
>> - shutting_down (3)
>> - unlocked (4)
>>
>> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Operational State attribute

>**Description**
>> The operational state for this component.

>**Type** Integer with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>> - unknown (1)
>> - disabled (2)
>> - enabled (3)
>> - testing (4)
>>
>> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Usage State attribute

>**Description**
>> The usage state for this component.

>**Type** Integer with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>> - unknown (1)
>> - idle (2)
>> - active (3)

- busy (4)

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

Standby State attribute

> **Description**
> The standby status for this component.

> **Type**   Integer with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
> - unknown (1)
> - hot_standby (2)
> - cold_standby (3)
> - providing_service (4)

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

Meter Power Qualilty Sag Surge attribute group

Data gathered from SNMP Object mtrPQSagSurgeTable If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the Meter Power Qualilty Sag Surge attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
> The managed system name of the agent.

> **Type**   String

Timestamp attribute

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

> **Type**   String

MeterIndex attribute - This attribute is a key attribute.

> **Description**
> The Power Meter identifier (meter number). Used to index all tables in this MIB. Normally equal to the meter's entPhysicalIndex.

> **Type**   Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
> - Value_Exceeds_Maximum (2147483647)
> - Value_Exceeds_Minimum (-2147483648)

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

SagSurgeIndex attribute - This attribute is a key attribute.

Description

The numeric value of this entry's level. For the ITIC curve levels, this Index will be 1, 2, 4, or 8.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

SagSurgeLevel attribute

Description

Indicates (in text) what level this entry/row is measured at. For example, for Eaton PXM meters, it indicates the ITIC level 1, 2, 4, or 8, where increasing level numbers indicate more severe deviations from the safe area of the ITIC curve.

Type   String

SagCount attribute

Description

The count of Sags at this mtrPQSagSurgeLevel since the last reset, mtrPQLastSagSurgeReset.

Type   Integer (Counter) with enumerated values. 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.

SurgeCount attribute

Description

The count of Surges at this mtrPQSagSurgeLevel since the last reset, mtrPQLastSagSurgeReset.

Type   Integer (Counter) with enumerated values. 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.

Meter Power Quality Measures attribute group

Data gathered from SNMP Object mtrPowerQualityMeasuresTable. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the Meter Power Quality Measures attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
> The managed system name of the agent.

> **Type** String

Timestamp attribute

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

> **Type** String

MeterIndex attribute - This attribute is a key attribute.

> **Description**
> The Power Meter identifier (meter number). Used to index all tables in this MIB. Normally equal to the meter's entPhysicalIndex.

> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
> - Value_Exceeds_Maximum (2147483647)
> - Value_Exceeds_Minimum (-2147483648)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

PresentQualityRaw attribute

> **Description**
> Raw form of the current or most recent Power Quality Index determined by this meter, using a short-term interval such as the last 10 minutes as the measurement interval.

> **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:
> - normal (1)
> - caution (2)
> - alert (3)
> - unknown (4)

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

Last24QualityRaw attribute

> **Description**
>> Raw form of the longer-term Power Quality Index determined by
>> this meter, using the past 24 hours as the measurement interval.
>
> **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:
>> - normal (1)
>> - caution (2)
>> - alert (3)
>> - unknown (4)
>>
>> Any other values will display the actual value returned by the
>> agent in the Tivoli Enterprise Portal.

VoltageTHD attribute

> **Description**
>> The Total Harmonic Distortion of the Voltage waveforms,
>> measured by this meter for all harmonics and summarized for all
>> phases.
>
> **Type** Integer (Gauge) with enumerated values. 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.

CurrentTDD attribute

> **Description**
>> The Total Demand Distortion of the Current waveforms, measured
>> by this meter for all harmonics and summarized for all phases.
>> TDD is similar to THD, but applies to the non-sinusoidal current
>> waveforms.
>
> **Type** Integer (Gauge) with enumerated values. 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.

LastSagSurgeReset attribute

> **Description**
>> Indicates (in text) the date and time of the last reset of the Sag and
>> Surge counts for this meter in mtrPQSagSurgeTable. If
>> mtrPQSagSurgeTable is not implemented, this object will not be
>> used.

Type String

PresentQuality attribute

> **Description**
> The current or most recent Power Quality Index determined by this meter, using a short-term interval such as the last 10 minutes as the measurement interval.
>
> **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:
> - normal (1000)
> - caution (2000)
> - alert (3000)
> - unknown (4000)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Last24Quality attribute

> **Description**
> The longer-term Power Quality Index determined by this meter, using the past 24 hours as the measurement interval.
>
> **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:
> - normal (1000)
> - caution (2000)
> - alert (3000)
> - unknown (4000)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Meter Realtime Measures attribute group

Data gathered from SNMP Object pwrMeterRtMeasuresTable If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the Meter Realtime Measures attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
> The managed system name of the agent.
>
> **Type** String

Timestamp attribute

> **Description**
>> The local time at the agent when the data was collected.
>
> **Type** String

MeterIndex attribute - This attribute is a key attribute.

> **Description**
>> The Power Meter identifier (meter number). Used to index all tables in this MIB. Normally equal to the meter's entPhysicalIndex.
>
> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>> • Value_Exceeds_Maximum (2147483647)
>> • Value_Exceeds_Minimum (-2147483648)
>>
>> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

NeutralCurrent attribute

> **Description**
>> The present Neutral line current for this meter.
>
> **Type** Integer (Gauge) with enumerated values. 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.

GroundCurrent attribute

> **Description**
>> The present Ground line current for this meter, in mA.
>
> **Type** Integer (Gauge) with enumerated values. 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.

TotalWatts attribute

> **Description**
>> The present value of system Watts, totaled from all phases. A negative value would generally indicate that power was being generated rather than delivered.
>
> **Type** Integer (Gauge) with enumerated values. 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.

TotalVA attribute

Description
The present value of system Volt-Amps, totaled from all phases.

Type Integer (Gauge) with enumerated values. 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.

TotalVAR attribute

Description
The present value of system Volt-Amps-Reactive, totaled from all phases.

Type Integer (Gauge) with enumerated values. 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.

PowerFactor attribute

Description
The present value of apparent power factor for all phases, multiplied x100.

Type Integer (Gauge) with enumerated values. 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.

Frequency attribute

Description
The present frequency reading, multiplied x100.

Type Integer (Gauge) with enumerated values. 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.

BTUPerHour attribute

> **Description**
>> The present value of BTU/hr, totaled from all phases. This is a potential measure of HVAC loading for the measured equipment.
>
> **Type** Integer (Gauge) with enumerated values. 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.

Meter Realtime Phase Measures attribute group

Data gathered from SNMP Object pwrMeterRtPhaseMeasuresTable If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the Meter Realtime Phase Measures attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
>> The managed system name of the agent.
>
> **Type** String

Timestamp attribute

> **Description**
>> The local time at the agent when the data was collected.
>
> **Type** String

MeterIndex attribute - This attribute is a key attribute.

> **Description**
>> The Power Meter identifier (meter number). Used to index all tables in this MIB. Normally equal to the meter's entPhysicalIndex.
>
> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>
>> • Value_Exceeds_Maximum (2147483647)
>>
>> • Value_Exceeds_Minimum (-2147483648)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

PhaseIndex attribute - This attribute is a key attribute.

Description

The line (phase) identifier.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

VoltageLL attribute

Description

The present Line-to-Line voltage for this phase of this meter.

Type Integer (Gauge) with enumerated values. 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.

VoltageLN attribute

Description

The present Line-to-Neutral voltage for this phase of this meter.

Type Integer (Gauge) with enumerated values. 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.

Current attribute

Description

The present rms current for this phase of this meter, multiplied x10.

Type Integer (Gauge) with enumerated values. 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.

Watts attribute

Description

The present value of Watts for this phase.

Type Integer (Gauge) with enumerated values. 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.

VA attribute

Description
The present value of Volt-Amps for this phase.

Type Integer (Gauge) with enumerated values. 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.

VAR attribute

Description
The present value of Volt-Amps-Reactive for this phase.

Type Integer (Gauge) with enumerated values. 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.

PowerFactor attribute

Description
The present value of apparent power factor for this phase, multiplied x100.

Type Integer (Gauge) with enumerated values. 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.

Meter System Information attribute group

Data gathered from SNMP Object system. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the Meter System Information attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
>> The managed system name of the agent.

> **Type**   String

Timestamp attribute

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

> **Type**   String

System Description attribute

> **Description**
>> The system description.

> **Type**   String

System Up Time attribute

> **Description**
>> The time (in hundredths of a second) since the network management portion of the system was last re-initialized.

> **Type**   String

System Contact attribute

> **Description**
>> The system contact.

> **Type**   String

System Name attribute

> **Description**
>> The system name.

> **Type**   String

System Location attribute

> **Description**
>> The system location.

> **Type**   String

MTR ID attribute group

Serial Number, Manufacturer, and Model gathered from SNMP Object entPhysicalTable. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

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

Node attribute - This attribute is a key attribute.

> **Description**
>> The managed system name of the agent.
>
> **Type**   String

Timestamp attribute

> **Description**
>> The local time at the agent when the data was collected.
>
> **Type**   String

Manufacturer Name attribute

> **Description**
>> The name of the manufacturer of this component.
>
> **Type**   String

Model Name attribute

> **Description**
>> The model name of this component.
>
> **Type**   String

Serial Number attribute

> **Description**
>> The serial number.
>
> **Type**   String

MTR 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. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the MTR Performance Object Status attribute group:

Node attribute - This attribute is a key attribute.

Description
>> The managed system name of the agent.

Type   String

Timestamp attribute

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

Type   String

Query Name attribute - This attribute is a key attribute.

Description
>> The name of the attribute group.

Type   String

Object Name attribute

Description
>> The name of the performance object.

Type   String

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)

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

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.

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)

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

Last Collection Start attribute

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

Type Timestamp with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
- NOT COLLECTED (0691231190000000)

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

Last Collection Finished attribute

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

Type Timestamp with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
- NOT COLLECTED (0691231190000000)

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

Last Collection Duration attribute

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

Type Integer (Counter)

Average Collection Duration attribute

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

    Type   Integer (Counter) with enumerated values. 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 DATA (-100)

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

Refresh Interval attribute

    Description
        The interval at which this group is refreshed in seconds

    Type   Integer (Counter)

Number of Collections attribute

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

    Type   Integer (Counter)

Cache Hits attribute

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

    Type   Integer (Counter)

Cache Misses attribute

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

    Type   Integer (Counter)

Cache Hit Percent attribute

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

    Type   Integer (Counter)

Intervals Skipped attribute

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

    Type   Integer (Counter)

MTR URI attribute group

Device URI gathered from SNMP Object entPhysicalTable. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

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

Node attribute - This attribute is a key attribute.

> **Description**
>> The managed system name of the agent.
>
> **Type**   String

Timestamp attribute

> **Description**
>> The local time at the agent when the data was collected.
>
> **Type**   String

URIs attribute

> **Description**
>> Additional identification information about the component.
>
> **Type**   String

PDU Active Alarms attribute group

Data gathered from SNMP Object activeAlarmsTable in the Eaton PXG MIB. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the PDU Active Alarms attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
>> The managed system name of the agent.
>
> **Type**   String

Timestamp attribute

> **Description**
>> The local time at the agent when the data was collected.
>
> **Type**   String

Alarm ID attribute - This attribute is a key attribute.

> **Description**
>> A unique identifier for the alarm.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Alarm Sequence Index attribute

Description
A unique identifier for a sequence of alarms using the same alarm
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:

- 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.

Alarm Description attribute

Description
A text description of the event or alarm.

Type String

Alarm Value attribute

Description
Source and value of the node that caused the event or alarm.

Type String

Alarm Level attribute

Description
Present level of the alarm.

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:

- critical (1)
- cautionary (2)
- acknowledged (3)
- active (4)
- cleared (5)
- closed (6)
- unknown (7)

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

Alarm Time attribute

Description
The value of the system's SNMP sysUpTime object when the alarm

condition was detected. If the alarm condition existed before agent startup, the value of the alarm time will equal 0.

Type String

PDU Active Alarms URI attribute group

Data gathered from SNMP Object activeAlarmsTable in the Eaton PXG MIB. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the PDU Active Alarms URI attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
> The managed system name of the agent.

> **Type** String

Timestamp attribute

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

> **Type** String

URIs attribute

> **Description**
> Additional identification information about the component.

> **Type** String

Alarm ID attribute - This attribute is a key attribute.

> **Description**
> A unique identifier for the alarm.

> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
> - Value_Exceeds_Maximum (2147483647)
> - Value_Exceeds_Minimum (-2147483648)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Alarm Sequence Index attribute

> **Description**
> A unique identifier for a sequence of alarms using the same alarm 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:

- 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.

Alarm Description attribute

> **Description**
> > A text description of the event or alarm.
>
> **Type**   String

Alarm Value attribute

> **Description**
> > Source and value of the node that caused the event or alarm.
>
> **Type**   String

Alarm Level attribute

> **Description**
> > Present level of the alarm.
>
> **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:
> > - critical (1)
> > - cautionary (2)
> > - acknowledged (3)
> > - active (4)
> > - cleared (5)
> > - closed (6)
> > - unknown (7)
> >
> > Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Alarm Time attribute

> **Description**
> > The value of the system's SNMP sysUpTime object when the alarm condition was detected. If the alarm condition existed before agent startup, the value of the alarm time will equal 0.
>
> **Type**   String

PDU Alarms attribute group

Data gathered from SNMP Object alarms in the Eaton PXG MIB. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

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

Node attribute - This attribute is a key attribute.

> **Description**
>> The managed system name of the agent.
>
> **Type**   String

Timestamp attribute

> **Description**
>> The local time at the agent when the data was collected.
>
> **Type**   String

Number of Alarms Present attribute

> **Description**
>> The present number of active alarm conditions.
>
> **Type**   Integer (Gauge) with enumerated values. 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.

PDU Breaker Meters Table attribute group

Data gathered from SNMP Object breakerMetersTable. If the warehouse default setting is enabled, data for this attribute group is not stored in Tivoli Data Warehouse.

Historical group

This attribute group is not part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the PDU Breaker Meters Table attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
>> The managed system name of the agent.
>
> **Type**   String

Timestamp attribute

> **Description**
>> The local time at the agent when the data was collected.
>
> **Type**   String

Panel attribute - This attribute is a key attribute.

Description
> The physical panel number.

Type   Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Breaker attribute - This attribute is a key attribute.

Description
> The breaker number.

Type   Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Total Kilowatt Hours attribute

Description
> The accumulated kilowatt-hours for this breaker since it was commissioned and put into service or since the last reset of the panel KHW measures.

Type   Integer (Gauge) with enumerated values. 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.

Delta Total Kilowatt Hours attribute

Description
> The accumulated kilowatt-hours for this breaker since it was commissioned and put into service or since the last reset of the panel KHW measures.

Type   Integer (difference between successive values) with enumerated values. 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.

PDU Breaker Phase Meters Table attribute group

Data gathered from SNMP Object breakerPhaseMetersTable. If the warehouse default setting is enabled, data for this attribute group is not stored in Tivoli Data Warehouse.

Historical group

This attribute group is not part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the PDU Breaker Phase Meters Table attribute group:

Node attribute - This attribute is a key attribute.

>**Description**
>>The managed system name of the agent.

>**Type**   String

Timestamp attribute

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

>**Type**   String

Panel attribute - This attribute is a key attribute.

>**Description**
>>The physical panel number.

>**Type**   Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>>- Value_Exceeds_Maximum (2147483647)
>>- Value_Exceeds_Minimum (-2147483648)

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

Breaker attribute - This attribute is a key attribute.

>**Description**
>>The breaker number.

>**Type**   Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>>- Value_Exceeds_Maximum (2147483647)
>>- Value_Exceeds_Minimum (-2147483648)

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

Phase attribute - This attribute is a key attribute.

Description

>The line or phase identifier.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Present VA Demand attribute

Description

>The present VA (input) demand of this phase on this breaker.

Type Integer (Gauge) with enumerated values. 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.

Power attribute

Description

>The present power (input) demand of phase on this breaker.

Type Integer (Gauge) with enumerated values. 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.

Power Factor attribute

Description

>The input power factor for this phase on this breaker. Varies from -1.00 to 1.00, multiplied by 100. If negative values are used, they indicate lagging power factor.

Type Integer (Gauge) with enumerated values. 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.

Current attribute

Description

>The present current in 0.1 amps for this phase of this breaker.

<table>
<tr><td>Type</td><td>Integer (Gauge) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:</td></tr>
</table>

- 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.

Percent Load attribute

Description
The percentage of the breaker power capacity currently being used on this line.

Type Integer (Gauge) with enumerated values. 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.

PDU Breaker Ratings Table attribute group

Data gathered from SNMP Object breakerRatingsTable. If the warehouse default setting is enabled, data for this attribute group is not stored in Tivoli Data Warehouse.

Historical group

This attribute group is not part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the PDU Breaker Ratings Table attribute group:

Node attribute - This attribute is a key attribute.

Description
The managed system name of the agent.

Type String

Timestamp attribute

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

Type String

Panel attribute - This attribute is a key attribute.

Description
The physical panel number.

Type Integer (Numeric Property) with enumerated values. The strings

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Breaker attribute - This attribute is a key attribute.

> **Description**
> The breaker number.

> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>
> - Value_Exceeds_Maximum (2147483647)
> - Value_Exceeds_Minimum (-2147483648)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Name attribute

> **Description**
> Name given by the administrator to identify this breaker.

> **Type** String

Rated Current attribute

> **Description**
> The rated current value in 0.1 amps of this breaker (for one phase) at full load.

> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>
> - Value_Exceeds_Maximum (2147483647)
> - Value_Exceeds_Minimum (-2147483648)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Phases attribute

> **Description**
> The number of lines (phases) for this breaker.

> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>
> - Value_Exceeds_Maximum (2147483647)
> - Value_Exceeds_Minimum (-2147483648)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

PDU Contact Sensor Table attribute group

Data gathered from SNMP Object xupsContactSenseTable. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the PDU Contact Sensor Table attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
> The managed system name of the agent.
>
> **Type** String

Timestamp attribute

> **Description**
> The local time at the agent when the data was collected.
>
> **Type** String

Contact attribute - This attribute is a key attribute.

> **Description**
> The contact identifier. It is identical to the contact number.
>
> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
> - Value_Exceeds_Maximum (2147483647)
> - Value_Exceeds_Minimum (-2147483648)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Type attribute

> **Description**
> The normal state for this contact.
>
> **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:
> - normally_open (1)
> - normally_closed (2)
> - any_change (3)
> - not_used (4)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

State attribute

Description
The current state of the contact input.

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:
- open (1)
- closed (2)
- open_with_notice (3)
- closed_with_notice (4)

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

Description attribute

Description
A label identifying the contact. This object must be set by the
administrator.

Type String

PDU Environment attribute group

Data gathered from SNMP Object xupsEnvironment. If the warehouse default
setting is enabled, data for this attribute group is not stored in Tivoli Data
Warehouse.

Historical group

This attribute group is not part of the default historical group, and is eligible for
use with Tivoli Data Warehouse.

Attribute descriptions

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

Node attribute - This attribute is a key attribute.

Description
The managed system name of the agent.

Type String

Timestamp attribute

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

Type String

Sensor Temperature attribute

Description
The reading of the remote probe's temperature sensor, if present.

Type Integer (Gauge) with enumerated values. 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.

Sensor Humidity attribute

Description
The reading of the remote probe's humidity sensor, if present.

Type Integer (Gauge) with enumerated values. 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.

Contacts attribute

Description
The number of contacts.

Type Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Sensor Temperature Lower Limit attribute

Description
The lower limit of the remote probe's temperature reading. If the remote temperature sensor reading falls below this value, the xupsRemoteTempBad alarm will occur.

Type Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Sensor Temperature Upper Limit attribute

Description
The upper limit of the remote probe's temperature reading. If the remote temperature sensor reading rises above this value, the xupsRemoteTempBad alarm will occur.

Type Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
- Value_Exceeds_Maximum (2147483647)

- Value_Exceeds_Minimum (-2147483648)

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

Sensor Humidity Lower Limit attribute

> **Description**
>> The lower limit of the remote probe's humidity reading. If the remote humidity sensor reading falls below this value, the xupsRemoteHumidityBad alarm will occur.

> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>> - Value_Exceeds_Maximum (2147483647)
>> - Value_Exceeds_Minimum (-2147483648)

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

Sensor Humidity Upper Limit attribute

> **Description**
>> The upper limit of the remote probe's humidity reading. If the remote humidity sensor reading rises above this value, the xupsRemoteHumidityBad alarm will occur.

> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>> - Value_Exceeds_Maximum (2147483647)
>> - Value_Exceeds_Minimum (-2147483648)

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

PDU ID attribute group

Serial Number, Manufacturer and Model gathered from SNMP Object entPhysicalTable. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

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

Node attribute - This attribute is a key attribute.

> **Description**
>> The managed system name of the agent.

> **Type** String

Timestamp attribute

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

> **Type** String

Manufacturer Name attribute

> **Description**
> The name of the manufacturer of this component.

> **Type** String

Model Name attribute

> **Description**
> The model name of this component.

> **Type** String

Serial Number attribute

> **Description**
> The serial number.

> **Type** String

PDU Input attribute group

Data gathered from SNMP Object pduInput. If the warehouse default setting is enabled, data for this attribute group is not stored in Tivoli Data Warehouse.

Historical group

This attribute group is not part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

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

Node attribute - This attribute is a key attribute.

> **Description**
> The managed system name of the agent.

> **Type** String

Timestamp attribute

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

> **Type** String

Input Frequency attribute

> **Description**
> The present frequency reading for the full PDU.

> **Type** Integer (Gauge) with enumerated values. 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.

Input VA Demand attribute

Description
The present VA input demand of the full PDU 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:
- 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.

Input Power attribute

Description
The present input power demand of the full PDU 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:
- 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.

Input Power Factor attribute

Description
The input power factor for the full PDU system. Varies from -1.00 to 1.00, multiplied by 100. If negative values are used, they indicate lagging power factor.

Type Integer (Gauge) with enumerated values. 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.

Input Ground Current attribute

Description
The present current in 0.1 amps in the PDU's ground phase.

Type Integer (Gauge) with enumerated values. 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.

Input Voltage Units attribute

> **Description**
>> Indicates whether the pduInputPhaseVoltage readings are 'Vrms Line-Line' or 'Vrms Line-Neutral'.
>
> **Type** String

Input Phases attribute

> **Description**
>> The number of input phases for this PDU.
>
> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>> - Value_Exceeds_Maximum (2147483647)
>> - Value_Exceeds_Minimum (-2147483648)
>>
>> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

PDU Input Output attribute group

Data gathered from the PDU input and output groups. If the warehouse default setting is enabled, data for this attribute group is not stored in Tivoli Data Warehouse.

Historical group

This attribute group is not part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the PDU Input Output attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
>> The managed system name of the agent.
>
> **Type** String

Timestamp attribute

> **Description**
>> The local time at the agent when the data was collected.
>
> **Type** String

Input Frequency attribute

> **Description**
>> The present frequency reading for the full PDU.
>
> **Type** Integer (Gauge) with enumerated values. 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.

Input VA Demand attribute

> **Description**
>> The present VA input demand of the full PDU 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:
>> • 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.

Input Power attribute

> **Description**
>> The present input power demand of the full PDU 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:
>> • 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.

Input Power Factor attribute

> **Description**
>> The input power factor for the full PDU system. Varies from -1.00 to 1.00, multiplied by 100. If negative values are used, they indicate lagging power factor.
>
> **Type** Integer (Gauge) with enumerated values. 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.

Input Ground Current attribute

> **Description**
>> The present current in 0.1 amps in the PDU's ground phase.
>
> **Type** Integer (Gauge) with enumerated values. 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.

Input Voltage Units attribute

Description

Indicates whether the pduInputPhaseVoltage readings are 'Vrms Line-Line' or 'Vrms Line-Neutral'.

Type String

Input Phases attribute

Description

The number of input phases for this PDU.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Output Kilowatt Hours attribute

Description

The accumulated kilowatt-hour value for the full PDU system since the last reset.

Type Integer (Gauge) with enumerated values. 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.

Output Present VA attribute

Description

The present VA output of the full PDU 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:

- 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.

Output Power attribute

Description

The present output power of the full PDU 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:

- 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.

Output Power Factor attribute

    Description
        The output power factor for the full PDU system. Varies from -1.00
        to 1.00, multiplied by 100. If negative values are used, they indicate
        lagging power factor.

    Type   Integer (Gauge) with enumerated values. 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.

Output Neutral Current attribute

    Description
        The present current in 0.1 amps in the PDU's output neutral phase.

    Type   Integer (Gauge) with enumerated values. 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.

Output Rated Current attribute

    Description
        The rated current value in 0.1 amps for one PDU Output phase at
        full load.

    Type   Integer (Gauge) with enumerated values. 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.

Output Voltage Units attribute

    Description
        Indicates whether the pduOutputPhaseVoltage readings are 'Vrms
        Line-Line' or 'Vrms Line-Neutral'.

    Type   String

Output Phases attribute

    Description
        The number of output phases for this PDU.

    Type   Integer (Numeric Property) with enumerated values. The strings

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Delta Output Kilowatt Hours attribute

Description
The change in accumulated kilowatt-hour value since the last query.

Type Integer (difference between successive values) with enumerated values. 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.

PDU Input Output Table attribute group

Data gathered from PDU Input Table and Output Table groups. If the warehouse default setting is enabled, data for this attribute group is not stored in Tivoli Data Warehouse.

Historical group

This attribute group is not part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the PDU Input Output Table attribute group:

Node attribute - This attribute is a key attribute.

Description
The managed system name of the agent.

Type String

Timestamp attribute

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

Type String

Input Phase attribute - This attribute is a key attribute.

Description
The input line identifier.

Type Integer (Numeric Property) with enumerated values. The strings

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Input Voltage attribute

> **Description**
>> The present input voltage for this phase.
>
> **Type** Integer (Gauge) with enumerated values. 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.

Input Current attribute

> **Description**
>> The present input current in 0.1 amps for this phase.
>
> **Type** Integer (Gauge) with enumerated values. 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.

Input Percent Load attribute

> **Description**
>> The percentage of the power capacity currently being used on this line.
>
> **Type** Integer (Gauge) with enumerated values. 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.

Output Phase attribute - This attribute is a key attribute.

> **Description**
>> The output line identifier.
>
> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>> - Value_Exceeds_Maximum (2147483647)

- Value_Exceeds_Minimum (-2147483648)

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

Output Voltage attribute

Description
The present output voltage for this phase.

Type Integer (Gauge) with enumerated values. 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.

Output Current attribute

Description
The present output current in 0.1 amps for this phase.

Type Integer (Gauge) with enumerated values. 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.

Output Percent Load attribute

Description
The percentage of the power capacity currently being used on this line.

Type Integer (Gauge) with enumerated values. 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.

PDU Input Table attribute group

Data gathered from SNMP Object pduInputTable. If the warehouse default setting is enabled, data for this attribute group is not stored in Tivoli Data Warehouse.

Historical group

This attribute group is not part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the PDU Input Table attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
> The managed system name of the agent.

> **Type** String

Timestamp attribute

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

> **Type** String

Input Phase attribute - This attribute is a key attribute.

> **Description**
> The input line identifier.

> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
> - Value_Exceeds_Maximum (2147483647)
> - Value_Exceeds_Minimum (-2147483648)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Input Voltage attribute

> **Description**
> The present input voltage for this phase.

> **Type** Integer (Gauge) with enumerated values. 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.

Input Current attribute

> **Description**
> The present input current in 0.1 amps for this phase.

> **Type** Integer (Gauge) with enumerated values. 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.

Input Percent Load attribute

Description

The percentage of the power capacity currently being used on this line.

Type Integer (Gauge) with enumerated values. 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.

PDU Nameplate attribute group

Data gathered from SNMP Object pduNameplate. If the warehouse default setting is enabled, data for this attribute group is not stored in Tivoli Data Warehouse.

Historical group

This attribute group is not part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

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

Node attribute - This attribute is a key attribute.

Description

The managed system name of the agent.

Type String

Timestamp attribute

Description

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

Type String

Full VA Rating attribute

Description

The full VA rating of this PDU for all phases.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Nominal Output Voltage attribute

Description

The nominal output voltage of this PDU.

Type Integer (Numeric Property) with enumerated values. The strings

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Phases attribute

Description
The number of lines (phases) for this PDU.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Panels attribute

Description
The number of panels or subfeeds contained in this PDU system.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

PDU Output attribute group

Data gathered from SNMP Object pduOutput. If the warehouse default setting is enabled, data for this attribute group is not stored in Tivoli Data Warehouse.

Historical group

This attribute group is not part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

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

Node attribute - This attribute is a key attribute.

Description
The managed system name of the agent.

Type String

Timestamp attribute

> **Description**
>> The local time at the agent when the data was collected.
>
> **Type** String

Output Kilowatt Hours attribute

> **Description**
>> The accumulated kilowatt-hour value for the full PDU system since the last reset.
>
> **Type** Integer (Gauge) with enumerated values. 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.

Output Present VA attribute

> **Description**
>> The present VA output of the full PDU 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:
>> - 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.

Output Power attribute

> **Description**
>> The present output power of the full PDU 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:
>> - 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.

Output Power Factor attribute

> **Description**
>> The output power factor for the full PDU system. Varies from -1.00 to 1.00, multiplied by 100. If negative values are used, they indicate lagging power factor.
>
> **Type** Integer (Gauge) with enumerated values. 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.

Output Neutral Current attribute

> **Description**
>> The present current in 0.1 amps in the PDU's output neutral phase.
>
> **Type** Integer (Gauge) with enumerated values. 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.

Output Rated Current attribute

> **Description**
>> The rated current value in 0.1 amps for one PDU Output phase at full load.
>
> **Type** Integer (Gauge) with enumerated values. 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.

Output Voltage Units attribute

> **Description**
>> Indicates whether the pduOutputPhaseVoltage readings are 'Vrms Line-Line' or 'Vrms Line-Neutral'.
>
> **Type** String

Output Phases attribute

> **Description**
>> The number of output phases for this PDU.
>
> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>> • Value_Exceeds_Maximum (2147483647)
>>
>> • Value_Exceeds_Minimum (-2147483648)
>
>> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Delta Output Kilowatt Hours attribute

> **Description**
>> The change in accumulated kilowatt-hour value since the last query.
>
> **Type** Integer (difference between successive values) with enumerated values. 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.

PDU Output Table attribute group

Data gathered from SNMP Object pduOutputTable. If the warehouse default
setting is enabled, data for this attribute group is not stored in Tivoli Data
Warehouse.

Historical group

This attribute group is not part of the default historical group, and is eligible for
use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the PDU Output
Table attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
> The managed system name of the agent.

> **Type** String

Timestamp attribute

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

> **Type** String

Output Phase attribute - This attribute is a key attribute.

> **Description**
> The output line identifier.

> **Type** Integer (Numeric Property) with enumerated values. The strings
> are displayed in the Tivoli Enterprise Portal. The warehouse and
> queries return the values shown in parentheses. The following
> values are defined:
> - Value_Exceeds_Maximum (2147483647)
> - Value_Exceeds_Minimum (-2147483648)
>
> Any other values will display the actual value returned by the
> agent in the Tivoli Enterprise Portal.

Output Voltage attribute

> **Description**
> The present output voltage for this phase.

> **Type** Integer (Gauge) with enumerated values. 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.

Output Current attribute

Description
　　　The present output current in 0.1 amps for this phase.

Type Integer (Gauge) with enumerated values. 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.

Output Percent Load attribute

Description
　　　The percentage of the power capacity currently being used on this line.

Type Integer (Gauge) with enumerated values. 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.

PDU Panel Meters Table attribute group

Data gathered from SNMP Object panelMetersTable. If the warehouse default setting is enabled, data for this attribute group is not stored in Tivoli Data Warehouse.

Historical group

This attribute group is not part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the PDU Panel Meters Table attribute group:

Node attribute - This attribute is a key attribute.

Description
　　　The managed system name of the agent.

Type String

Timestamp attribute

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

Type String

Total Kilowatt Hours attribute

Description
The accumulated kilowatt-hours for this panel since it was commissioned and put into service or since the last reset of the system KHW measures.

Type Integer (Gauge) with enumerated values. 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.

Panel attribute - This attribute is a key attribute.

Description
The physical panel number.

Type Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Present VA Demand attribute

Description
The present VA (input) demand of this panel.

Type Integer (Gauge) with enumerated values. 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.

Power attribute

Description
The present power (input) demand of this panel.

Type Integer (Gauge) with enumerated values. 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.

Power Factor attribute

Description

The input power factor for this panel. Varies from -1.00 to 1.00, multiplied by 100. If negative values are used, they indicate lagging power factor.

Type Integer (Gauge) with enumerated values. 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.

Neutral Current attribute

Description

The present neutral phase current in 0.1 amps for this panel.

Type Integer (Gauge) with enumerated values. 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.

Delta Total Kilowatt Hours attribute

Description

The accumulated kilowatt-hours for this panel since it was commissioned and put into service or since the last reset of the system KHW measures.

Type Integer (difference between successive values) with enumerated values. 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.

PDU Panel Phase Meters Table attribute group

Data gathered from SNMP Object panelPhaseMetersTable. If the warehouse default setting is enabled, data for this attribute group is not stored in Tivoli Data Warehouse.

Historical group

This attribute group is not part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the PDU Panel Phase Meters Table attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
>> The managed system name of the agent.

> **Type** String

Timestamp attribute

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

> **Type** String

Panel attribute - This attribute is a key attribute.

> **Description**
>> The physical panel number.

> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>> - Value_Exceeds_Maximum (2147483647)
>> - Value_Exceeds_Minimum (-2147483648)
>>
>> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Phase attribute - This attribute is a key attribute.

> **Description**
>> The line or phase identifier.

> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>> - Value_Exceeds_Maximum (2147483647)
>> - Value_Exceeds_Minimum (-2147483648)
>>
>> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Voltage attribute

> **Description**
>> The present voltage for this phase.

> **Type** Integer (Gauge) with enumerated values. 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.

Current attribute

> **Description**
>> The present current in 0.1 amps for this phase.

> **Type** Integer (Gauge) with enumerated values. 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.

Percent Load attribute

Description
The percentage of the panel power capacity currently being used on this line.

Type Integer (Gauge) with enumerated values. 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.

PDU Panel Ratings Table attribute group

Data gathered from SNMP Object panelRatingsTable. If the warehouse default setting is enabled, data for this attribute group is not stored in Tivoli Data Warehouse.

Historical group

This attribute group is not part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the PDU Panel Ratings Table attribute group:

Node attribute - This attribute is a key attribute.

Description
The managed system name of the agent.

Type String

Timestamp attribute

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

Type String

Panel attribute - This attribute is a key attribute.

Description
The physical panel number.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Rated Voltage attribute

Description
The nominal Voltage of this panel (as distributed to the breakers or subfeeds).

Type Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Rated Breaker Current attribute

Description
The rated current value in 0.1 amps for one panel (input) phase at full load.

Type Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Phases attribute

Description
The number of lines (phases) for this panel.

Type Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Breakers attribute

Description
The number of breakers contained in this panel.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Voltage Units attribute

    Description
        Indicates whether the Phase Voltage readings are 'Vrms Line-Line' or 'Vrms Line-Neutral'.

    Type   String

PDU 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. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the PDU Performance Object Status attribute group:

Node attribute - This attribute is a key attribute.

    Description
        The managed system name of the agent.

    Type   String

Timestamp attribute

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

    Type   String

Query Name attribute - This attribute is a key attribute.

    Description
        The name of the attribute group.

    Type   String

Object Name attribute

    Description
        The name of the performance object.

Type String

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)

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

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.

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)

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

Last Collection Start attribute

> **Description**
>> The most recent time a data collection of this group started
>
> **Type** Timestamp with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>> - NOT COLLECTED (0691231190000000)
>
>> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Last Collection Finished attribute

> **Description**
>> The most recent time a data collection of this group finished
>
> **Type** Timestamp with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>> - NOT COLLECTED (0691231190000000)
>
>> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Last Collection Duration attribute

> **Description**
>> The duration of the most recently completed data collection of this group in seconds
>
> **Type** Integer (Counter)

Average Collection Duration attribute

> **Description**
>> The average duration of all data collections of this group in seconds
>
> **Type** Integer (Counter) with enumerated values. 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 DATA (-100)
>
>> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Refresh Interval attribute

> **Description**
>> The interval at which this group is refreshed in seconds
>
> **Type** Integer (Counter)

Number of Collections attribute

> **Description**
>> The number of times this group has been collected since agent start
>
> **Type**   Integer (Counter)

Cache Hits attribute

> **Description**
>> The number of times an external data request for this group was satisfied from the cache
>
> **Type**   Integer (Counter)

Cache Misses attribute

> **Description**
>> The number of times an external data request for this group was not available in the cache
>
> **Type**   Integer (Counter)

Cache Hit Percent attribute

> **Description**
>> The percentage of external data requests for this group that were satisfied from the cache
>
> **Type**   Integer (Counter)

Intervals Skipped attribute

> **Description**
>> The number of times a background data collection for this group was skipped because the previous collection was still running when the next one was due to start
>
> **Type**   Integer (Counter)

PDU Physical Configuration attribute group

> Data gathered from SNMP Object entPhysicalTable. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the PDU Physical Configuration attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
>> The managed system name of the agent.
>
> **Type**   String

Timestamp attribute

> **Description**
>> The local time at the agent when the data was collected.
>
> **Type**   String

Component attribute - This attribute is a key attribute.

> **Description**
> The index for this entry.

> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
> - Value_Exceeds_Maximum (2147483647)
> - Value_Exceeds_Minimum (-2147483648)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Description attribute

> **Description**
> A textual description of this component.

> **Type** String

Vendor Type attribute

> **Description**
> The vendor type for this component.

> **Type** String

Class attribute

> **Description**
> The general hardware type.

> **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:
> - other (1)
> - unknown (2)
> - chassis (3)
> - backplane (4)
> - container (5)
> - power_supply (6)
> - fan (7)
> - sensor (8)
> - module (9)
> - port (10)
> - stack (11)
> - cpu (12)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Name attribute

> **Description**
> The name of the component.

> **Type** String

Hardware Revision attribute

Description
> The hardware revision string.

Type String

Firmware Revision attribute

Description
> The firmware revision string.

Type String

Software Revision attribute

Description
> The software revision string.

Type String

Serial Number attribute

Description
> The serial number.

Type String

Manufacturer Name attribute

Description
> The name of the manufacturer of this component.

Type String

Model Name attribute

Description
> The model name of this component.

Type String

Asset ID attribute

Description
> User-assigned asset tracking identifier.

Type String

URIs attribute

Description
> Additional identification information about the component.

Type String

Administrative State attribute

Description
> The administrative state for this component.

Type Integer with enumerated values. The strings are displayed in the
Tivoli Enterprise Portal. The warehouse and queries return the
values shown in parentheses. The following values are defined:
> - unknown (1)
> - locked (2)
> - shutting_down (3)
> - unlocked (4)

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

Operational State attribute

> **Description**
> The operational state for this component.
>
> **Type** Integer with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
> - unknown (1)
> - disabled (2)
> - enabled (3)
> - testing (4)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Usage State attribute

> **Description**
> The usage state for this component.
>
> **Type** Integer with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
> - unknown (1)
> - idle (2)
> - active (3)
> - busy (4)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Standby State attribute

> **Description**
> The standby status for this component.
>
> **Type** Integer with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
> - unknown (1)
> - hot_standby (2)
> - cold_standby (3)
> - providing_service (4)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

PDU System Information attribute group

Data gathered from SNMP Object system. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the PDU System Information attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
>> The managed system name of the agent.
>
> **Type**   String

Timestamp attribute

> **Description**
>> The local time at the agent when the data was collected.
>
> **Type**   String

System Description attribute

> **Description**
>> The system description.
>
> **Type**   String

System Up Time attribute

> **Description**
>> The time (in hundredths of a second) since the network management portion of the system was last re-initialized.
>
> **Type**   String

System Contact attribute

> **Description**
>> The system contact.
>
> **Type**   String

System Name attribute

> **Description**
>> The system name.
>
> **Type**   String

System Location attribute

> **Description**
>> The system location.
>
> **Type**   String

PDU URI attribute group

Device URI gathered from SNMP Object entPhysicalTable. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

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

Node attribute - This attribute is a key attribute.

> **Description**
>> The managed system name of the agent.

> **Type** String

Timestamp attribute

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

> **Type** String

URIs attribute

> **Description**
>> Additional identification information about the component.

> **Type** String

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. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and 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

Timestamp attribute

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

Type	String

Query Name attribute - This attribute is a key attribute.

Description
>	The name of the attribute group.

Type	String

Object Name attribute

Description
>	The name of the performance object.

Type	String

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

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.

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)

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

Last Collection Start attribute

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

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

- NOT COLLECTED (0691231190000000)

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

Last Collection Finished attribute

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

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

- NOT COLLECTED (0691231190000000)

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

Last Collection Duration attribute

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

Type Integer (Counter)

Average Collection Duration attribute

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

Type Integer (Counter) with enumerated values. 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 DATA (-100)

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

Refresh Interval attribute

Description
The interval at which this group is refreshed in seconds

Type Integer (Counter)

Number of Collections attribute

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

Type Integer (Counter)

Cache Hits attribute

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

Type Integer (Counter)

Cache Misses attribute

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

Type Integer (Counter)

Cache Hit Percent attribute

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

Type Integer (Counter)

Intervals Skipped attribute

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

Type Integer (Counter)

Thread Pool Status attribute group

The Thread Pool Status attribute group contains information that reflects the status of the internal thread pool used to collect data asynchronously. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the Thread Pool Status attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
> > The managed system name of the agent.
>
> **Type** String

Timestamp attribute

> **Description**
> > The local time at the agent when the data was collected.
>
> **Type** String

Thread Pool Size attribute

> **Description**
> > The number of threads currently existing in the thread pool.
>
> **Type** Integer (Counter) with enumerated values. 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 DATA (-1)
> > - NO DATA (-100)
> >
> > Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Thread Pool Max Size attribute

> **Description**
> > The maximum number of threads allowed to exist in the thread pool.
>
> **Type** Integer (Counter) with enumerated values. 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 DATA (-1)
> > - NO DATA (-100)
> >
> > Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Thread Pool Active Threads attribute

> **Description**
> > The number of threads in the thread pool currently active doing work.
>
> **Type** Integer (Counter) with enumerated values. 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 DATA (-1)
- NO DATA (-100)

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

Thread Pool Avg Active Threads attribute

Description
The average number of threads in the thread pool simultaneously active doing work.

Type   Integer (Counter) with enumerated values. 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 DATA (-1)
- NO DATA (-100)

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

Thread Pool Min Active Threads attribute

Description
The smallest number of threads in the thread pool that have simultaneously been active doing work.

Type   Integer (Counter) with enumerated values. 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 DATA (-1)
- NO DATA (-100)

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

Thread Pool Max Active Threads attribute

Description
The peak number of threads in the thread pool that have simultaneously been active doing work.

Type   Integer (Counter) with enumerated values. 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 DATA (-1)
- NO DATA (-100)

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

Thread Pool Queue Length attribute

Description
The number of jobs currently waiting in the thread pool queue.

Type   Integer (Counter) with enumerated values. 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 DATA (-1)
- NO DATA (-100)

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

Thread Pool Avg Queue Length attribute

Description
The average length of the thread pool queue during this run.

Type   Integer (Counter) with enumerated values. 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 DATA (-1)
- NO DATA (-100)

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

Thread Pool Min Queue Length attribute

Description
The minimum length the thread pool queue has reached.

Type   Integer (Counter) with enumerated values. 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 DATA (-1)
- NO DATA (-100)

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

Thread Pool Max Queue Length attribute

Description
The peak length the thread pool queue has reached.

Type   Integer (Counter) with enumerated values. 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 DATA (-1)
- NO DATA (-100)

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

Thread Pool Avg Job Wait attribute

Description
The average time a job spends waiting on the thread pool queue in seconds.

Type   Integer (Counter) with enumerated values. 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 DATA (-1)
- NO DATA (-100)

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

Thread Pool Total Jobs attribute

> **Description**
> The number of jobs completed by all threads in the pool since
> agent start.

> **Type** Integer (Counter) with enumerated values. 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 DATA (-1)
> - NO DATA (-100)
>
> Any other values will display the actual value returned by the
> agent in the Tivoli Enterprise Portal.

UPS Active Alarms attribute group

Data gathered from SNMP Object activeAlarmsTable in the Eaton PXG MIB. If the
warehouse default setting is enabled, data for this attribute group is not stored in
Tivoli Data Warehouse.

Historical group

This attribute group is not part of the default historical group, and is eligible for
use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the UPS Active
Alarms attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
> The managed system name of the agent.

> **Type** String

Timestamp attribute

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

> **Type** String

Alarm ID attribute - This attribute is a key attribute.

> **Description**
> A unique identifier for the alarm.

> **Type** Integer (Numeric Property) with enumerated values. The strings

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Alarm Sequence Index attribute

Description
A unique identifier for a sequence of alarms using the same alarm 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:

- 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.

Alarm Description attribute

Description
A text description of the event or alarm.

Type String

Alarm Value attribute

Description
A text representation of the source and value of the node that caused the event or alarm.

Type String

Alarm Level attribute

Description
Present level of the alarm.

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:

- critical (1)
- cautionary (2)
- acknowledged (3)
- active (4)
- cleared (5)
- closed (6)
- unknown (7)

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

Alarm Time attribute

Description
>The value of the system's SNMP sysUpTime object when the alarm condition was detected.

Type String

UPS Active Alarms URI attribute group

Data gathered from SNMP Object activeAlarmsTable in the Eaton PXG MIB. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the UPS Active Alarms URI attribute group:

Node attribute - This attribute is a key attribute.

>**Description**
>>The managed system name of the agent.

>**Type** String

Timestamp attribute

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

>**Type** String

URIs attribute

>**Description**
>>Additional identification information about the component.

>**Type** String

Alarm ID attribute - This attribute is a key attribute.

>**Description**
>>A unique identifier for the alarm.

>**Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>>- Value_Exceeds_Maximum (2147483647)
>>- Value_Exceeds_Minimum (-2147483648)
>>
>>Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Alarm Sequence Index attribute

>**Description**
>>A unique identifier for a sequence of alarms using the same alarm 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:

- 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.

Alarm Description attribute

Description
A text description of the event or alarm.

Type String

Alarm Value attribute

Description
A text representation of the source and value of the node that caused the event or alarm.

Type String

Alarm Level attribute

Description
Present level of the alarm.

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:

- critical (1)
- cautionary (2)
- acknowledged (3)
- active (4)
- cleared (5)
- closed (6)
- unknown (7)

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

Alarm Time attribute

Description
The value of the system's SNMP sysUpTime object when the alarm condition was detected.

Type String

UPS Alarms attribute group

Data gathered from SNMP Object alarms in the Eaton PXG MIB. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

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

Node attribute - This attribute is a key attribute.

> **Description**
>> The managed system name of the agent.

> **Type**   String

Timestamp attribute

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

> **Type**   String

Number of Alarms Present attribute

> **Description**
>> The present number of active alarm conditions.

> **Type**   Integer (Gauge) with enumerated values. 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.

UPS Battery attribute group

Data gathered from SNMP Object xupsBattery. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

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

Node attribute - This attribute is a key attribute.

> **Description**
>> The managed system name of the agent.

> **Type**   String

Timestamp attribute

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

> **Type**   String

Time Remaining attribute

Description
Battery run time in seconds before UPS turns off due to low battery.

Type Integer (Gauge) with enumerated values. 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.

Voltage attribute

Description
Battery voltage as reported by the UPS meters.

Type Integer (Gauge) with enumerated values. 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.

Current in Amps attribute

Description
Battery Current in amps as reported by the UPS metering. Current is positive when discharging, and negative when recharging the battery.

Type Integer (Gauge) with enumerated values. 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.

Current attribute

Description
Battery Current in 0.1 amps as reported by the UPS metering. Current is positive when discharging, and negative when recharging the battery.

Type Integer (Gauge) with enumerated values. 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.

Percent Charge attribute

Description
> Battery percent charge.

Type Integer (Gauge) with enumerated values. 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.

Advanced Battery Management Status attribute

Description
> Gives the status of the Advanced Battery Management.

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:
> - battery_charging (1)
> - battery_discharging (2)
> - battery_floating (3)
> - battery_resting (4)
> - unknown (5)

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

Last Replaced Date attribute

Description
> The date when the batteries in this UPS were last replaced.

Type String

UPS Bypass attribute group

Data gathered from SNMP Object xupsBypass. If the warehouse default setting is enabled, data for this attribute group is not stored in Tivoli Data Warehouse.

Historical group

This attribute group is not part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

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

Node attribute - This attribute is a key attribute.

Description
> The managed system name of the agent.

Type String

Timestamp attribute

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

Type String

Frequency attribute

> **Description**
>> The bypass frequency in tenths of hertz.
>
> **Type** Integer (Gauge) with enumerated values. 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.

Phases attribute

> **Description**
>> The number of bypass phases.
>
> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>> • Value_Exceeds_Maximum (2147483647)
>>
>> • Value_Exceeds_Minimum (-2147483648)
>
>> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

UPS Bypass Table attribute group

Data gathered from SNMP Object xupsBypassTable. If the warehouse default setting is enabled, data for this attribute group is not stored in Tivoli Data Warehouse.

Historical group

This attribute group is not part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the UPS Bypass Table attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
>> The managed system name of the agent.
>
> **Type** String

Timestamp attribute

> **Description**
>> The local time at the agent when the data was collected.
>
> **Type** String

Phase attribute - This attribute is a key attribute.

Description
The bypass phase.

Type Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Voltage attribute

Description
The measured bypass voltage in volts.

Type Integer (Gauge) with enumerated values. 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.

UPS Contact Table attribute group

Data gathered from SNMP Object xupsContactSenseTable. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the UPS Contact Table attribute group:

Node attribute - This attribute is a key attribute.

Description
The managed system name of the agent.

Type String

Timestamp attribute

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

Type String

Contact attribute - This attribute is a key attribute.

Description
The contact identifier.

Type Integer (Numeric Property) with enumerated values. The strings

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Contact Type attribute

    Description
        The normal state for this contact.

    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:

- normally_open (1)
- normally_closed (2)
- any_change (3)
- not_used (4)

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

State attribute

    Description
        The current state of the contact input.

    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:

- open (1)
- closed (2)
- open_with_notice (3)
- closed_with_notice (4)

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

Contact Description attribute

    Description
        A label identifying the contact.

    Type   String

UPS Environment attribute group

Data gathered from SNMP Object xupsEnvironment. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

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

Node attribute - This attribute is a key attribute.

>**Description**
>>The managed system name of the agent.

>**Type** String

Timestamp attribute

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

>**Type** String

Ambient Temperature attribute

>**Description**
>>The ambient (intake) temperature.

>**Type** Integer (Gauge) with enumerated values. 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.

Ambient Temperature Lower Limit attribute

>**Description**
>>The lower limit of the ambient temperature.

>**Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>>- Value_Exceeds_Maximum (2147483647)
>>- Value_Exceeds_Minimum (-2147483648)
>>
>>Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Ambient Temperature Upper Limit attribute

>**Description**
>>The upper limit of the ambient temperature.

>**Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>>- Value_Exceeds_Maximum (2147483647)
>>- Value_Exceeds_Minimum (-2147483648)
>>
>>Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Ambient Humidity attribute

Description
The ambient (intake) humidity.

Type Integer (Gauge) with enumerated values. 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.

Remote Temperature attribute

Description
The reading of the remote probe's temperature sensor, if present.

Type Integer (Gauge) with enumerated values. 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.

Remote Humidity attribute

Description
The reading of the remote probe's humidity sensor, if present.

Type Integer (Gauge) with enumerated values. 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.

Contacts attribute

Description
The number of contacts.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Remote Temperature Lower Limit attribute

Description
The lower limit of the remote probe's temperature reading. If the remote temperature sensor reading falls below this value, the xupsRemoteTempBad alarm will occur.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Remote Temperature Upper Limit attribute

Description
The upper limit of the remote probe's temperature reading. If the remote temperature sensor reading rises above this value, the xupsRemoteTempBad alarm will occur.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Remote Humidity Lower Limit attribute

Description
The lower limit of the remote probe's humidity reading. If the remote humidity sensor reading falls below this value, the xupsRemoteHumidityBad alarm will occur.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Remote Humidity Upper Limit attribute

Description
The upper limit of the remote probe's humidity reading. If the remote humidity sensor reading rises above this value, the xupsRemoteHumidityBad alarm will occur.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

UPS ID attribute group

Serial Number, Manufacturer, and Model gathered from SNMP Object entPhysicalTable. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

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

Node attribute - This attribute is a key attribute.

> **Description**
> > The managed system name of the agent.
>
> **Type**   String

Timestamp attribute

> **Description**
> > The local time at the agent when the data was collected.
>
> **Type**   String

Manufacturer attribute

> **Description**
> > The UPS manufacturer name.
>
> **Type**   String

Model attribute

> **Description**
> > The UPS model.
>
> **Type**   String

Serial Number attribute

> **Description**
> > The device name.
>
> **Type**   String

UPS Identification attribute group

Data gathered from SNMP Object xupsIdent. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

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

Node attribute - This attribute is a key attribute.

> **Description**
> > The managed system name of the agent.
>
> **Type**   String

Timestamp attribute

> **Description**
> > The local time at the agent when the data was collected.
>
> **Type**   String

Manufacturer attribute

> **Description**
> > The UPS manufacturer name.
>
> **Type**   String

Model attribute

> **Description**
> > The UPS model.
>
> **Type**   String

Software Version attribute

> **Description**
> > The firmware revision UPS.
>
> **Type**   String

Name attribute

> **Description**
> > The device name.
>
> **Type**   String

UPS Identification URI attribute group

Data gathered from SNMP Object xupsIdent table in the Eaton PXG MIB. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the UPS Identification URI attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
> > The managed system name of the agent.

> **Type** String

Timestamp attribute

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

> **Type** String

URIs attribute

> **Description**
>> Additional identification information about the component.

> **Type** String

Manufacturer attribute

> **Description**
>> The UPS manufacturer name.

> **Type** String

Model attribute

> **Description**
>> The UPS model.

> **Type** String

Software Version attribute

> **Description**
>> The firmware revision UPS.

> **Type** String

Name attribute

> **Description**
>> The device name.

> **Type** String

UPS Input attribute group

Data gathered from SNMP Object xupsInput. If the warehouse default setting is enabled, data for this attribute group is not stored in Tivoli Data Warehouse.

Historical group

This attribute group is not part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

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

Node attribute - This attribute is a key attribute.

> **Description**
>> The managed system name of the agent.

> **Type** String

Timestamp attribute

Description

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

Type String

Input Frequency attribute

Description

The utility line frequency in tenths of hertz.

Type Integer (Gauge) with enumerated values. 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.

Input Line Bads attribute

Description

The number of times the input was out of tolerance in voltage or frequency.

Type Integer (Counter) with enumerated values. 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.

Input Phases attribute

Description

The number of input phases.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Input Source attribute

Description

The present external source of input power.

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:

- other (1)
- none (2)
- primary_utility (3)

- bypass_feed (4)
- secondary_utility (5)
- generator (6)
- flywheel (7)
- fuel_cell (8)

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

Dual Input Status attribute

    Description
    The present status of the sources of input power in a dual source UPS.

    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:
- both_sources_bad (1)
- primary_source_good (2)
- secondary_source_good (3)
- both_sources_good (4)

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

UPS Input Output attribute group

Data from the UPS input and UPS output groups. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the UPS Input Output attribute group:

Node attribute - This attribute is a key attribute.

    Description
    The managed system name of the agent.

    Type   String

Timestamp attribute

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

    Type   String

Input Frequency attribute

    Description
    The utility line frequency in tenths of hertz.

    Type   Integer (Gauge) with enumerated values. 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.

Input Line Bads attribute

> **Description**
>> The number of times the input was out of tolerance in voltage or frequency.

> **Type** Integer (Counter) with enumerated values. 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.

Input Phases attribute

> **Description**
>> The number of input phases.

> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>
> - Value_Exceeds_Maximum (2147483647)
> - Value_Exceeds_Minimum (-2147483648)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Input Source attribute

> **Description**
>> The present external source of input power.

> **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:
>
> - other (1)
> - none (2)
> - primary_utility (3)
> - bypass_feed (4)
> - secondary_utility (5)
> - generator (6)
> - flywheel (7)
> - fuel_cell (8)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Dual Input Status attribute

Description
The present status of the sources of input power in a dual source UPS.

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:

- both_sources_bad (1)
- primary_source_good (2)
- secondary_source_good (3)
- both_sources_good (4)

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

Output Percent Load attribute

Description
The output load in percent of rated 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:

- 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.

Output Frequency attribute

Description
The measured output frequency in tenths of hertz.

Type Integer (Gauge) with enumerated values. 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.

Phases attribute

Description
The number of metered output phases.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Output Source attribute

Description
> The present source of output power.

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:
> - other (1)
> - none (2)
> - normal (3)
> - bypass (4)
> - battery (5)
> - booster (6)
> - reducer (7)
> - parallel_capacity (8)
> - parallel_redundant (9)
> - high_efficiency_mode (10)
> - maintenance_bypass (11)
>
> Any other values will display the actual value returned by the
> agent in the Tivoli Enterprise Portal.

UPS Input Output Table attribute group

Data from the UPS Input Table and UPS Output Table groups. If the warehouse
default setting is enabled, data for this attribute group is stored in Tivoli Data
Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use
with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the UPS Input
Output Table attribute group:

Node attribute - This attribute is a key attribute.

Description
> The managed system name of the agent.

Type String

Timestamp attribute

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

Type String

Input Phase attribute - This attribute is a key attribute.

Description
> The number of the phase. Serves as index for input table.

Type Integer (Numeric Property) with enumerated values. The strings

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Input Voltage attribute

Description
The measured input voltage in volts.

Type Integer (Gauge) with enumerated values. 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.

Input Current in Amps attribute

Description
The measured input current in amps.

Type Integer (Gauge) with enumerated values. 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.

Input Current attribute

Description
The measured input current in 0.1 amps.

Type Integer (Gauge) with enumerated values. 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.

Input Watts attribute

Description
The measured input power in Watts.

Type Integer (Gauge) with enumerated values. 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.

Output Phase attribute - This attribute is a key attribute.

Description
The number of the output phase.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Output Voltage attribute

Description
The measured output voltage in volts.

Type Integer (Gauge) with enumerated values. 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.

Output Current in Amps attribute

Description
The measured output current in amps.

Type Integer (Gauge) with enumerated values. 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.

Output Current attribute

Description
The measured output current in 0.1 amps.

Type Integer (Gauge) with enumerated values. 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.

Output Watts attribute

Description
The measured real output power in Watts.

Type Integer (Gauge) with enumerated values. 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.

UPS Input Table attribute group

Data gathered from SNMP Object xupsInputTable. If the warehouse default setting is enabled, data for this attribute group is not stored in Tivoli Data Warehouse.

Historical group

This attribute group is not part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the UPS Input Table attribute group:

Node attribute - This attribute is a key attribute.

Description
The managed system name of the agent.

Type String

Timestamp attribute

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

Type String

Input Phase attribute - This attribute is a key attribute.

Description
The number of the phase. Serves as index for input table.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Input Voltage attribute

Description
The measured input voltage in volts.

Type Integer (Gauge) with enumerated values. 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.

Input Current in Amps attribute

> **Description**
> The measured input current in amps.
>
> **Type** Integer (Gauge) with enumerated values. 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.

Input Current attribute

> **Description**
> The measured input current in 0.1 amps.
>
> **Type** Integer (Gauge) with enumerated values. 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.

Input Watts attribute

> **Description**
> The measured input power in Watts.
>
> **Type** Integer (Gauge) with enumerated values. 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.

UPS Output attribute group

Data gathered from SNMP Object xupsOutput. If the warehouse default setting is enabled, data for this attribute group is not stored in Tivoli Data Warehouse.

Historical group

This attribute group is not part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

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

Node attribute - This attribute is a key attribute.

> **Description**
>> The managed system name of the agent.
>
> **Type** String

Timestamp attribute

> **Description**
>> The local time at the agent when the data was collected.
>
> **Type** String

Output Percent Load attribute

> **Description**
>> The output load in percent of rated 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:
>> - 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.

Output Frequency attribute

> **Description**
>> The measured output frequency in tenths of hertz.
>
> **Type** Integer (Gauge) with enumerated values. 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.

Phases attribute

> **Description**
>> The number of metered output phases.
>
> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>> - Value_Exceeds_Maximum (2147483647)
>> - Value_Exceeds_Minimum (-2147483648)
>>
>> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Output Source attribute

Description
The present source of output power.

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:
- other (1)
- none (2)
- normal (3)
- bypass (4)
- battery (5)
- booster (6)
- reducer (7)
- parallel_capacity (8)
- parallel_redundant (9)
- high_efficiency_mode (10)
- maintenance_bypass (11)

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

UPS Output Table attribute group

Data gathered from SNMP Object xupsOutputTable. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the UPS Output Table attribute group:

Node attribute - This attribute is a key attribute.

Description
The managed system name of the agent.

Type   String

Timestamp attribute

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

Type   String

Output Phase attribute - This attribute is a key attribute.

Description
The number of the output phase.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Output Voltage attribute

> **Description**
> The measured output voltage in volts.
>
> **Type** Integer (Gauge) with enumerated values. 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.

Output Current in Amps attribute

> **Description**
> The measured output current in amps.
>
> **Type** Integer (Gauge) with enumerated values. 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.

Output Current attribute

> **Description**
> The measured output current in 0.1 amps.
>
> **Type** Integer (Gauge) with enumerated values. 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.

Output Watts attribute

> **Description**
> The measured real output power in Watts.
>
> **Type** Integer (Gauge) with enumerated values. 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.

UPS 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. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the UPS Performance Object Status attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
> > The managed system name of the agent.
>
> **Type** String

Timestamp attribute

> **Description**
> > The local time at the agent when the data was collected.
>
> **Type** String

Query Name attribute - This attribute is a key attribute.

> **Description**
> > The name of the attribute group.
>
> **Type** String

Object Name attribute

> **Description**
> > The name of the performance object.
>
> **Type** String

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)

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

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.

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)

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

Last Collection Start attribute

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

Type   Timestamp with enumerated values. The strings are displayed in

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

- NOT COLLECTED (0691231190000000)

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

Last Collection Finished attribute

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

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

- NOT COLLECTED (0691231190000000)

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

Last Collection Duration attribute

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

Type   Integer (Counter)

Average Collection Duration attribute

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

Type   Integer (Counter) with enumerated values. 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 DATA (-100)

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

Refresh Interval attribute

Description
The interval at which this group is refreshed in seconds

Type   Integer (Counter)

Number of Collections attribute

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

Type   Integer (Counter)

Cache Hits attribute

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

Type   Integer (Counter)

Cache Misses attribute

> **Description**
> The number of times an external data request for this group was not available in the cache
>
> **Type** Integer (Counter)

Cache Hit Percent attribute

> **Description**
> The percentage of external data requests for this group that were satisfied from the cache
>
> **Type** Integer (Counter)

Intervals Skipped attribute

> **Description**
> The number of times a background data collection for this group was skipped because the previous collection was still running when the next one was due to start
>
> **Type** Integer (Counter)

UPS Physical Configuration attribute group

Data gathered from SNMP Object entPhysicalTable. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the UPS Physical Configuration attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
> The managed system name of the agent.
>
> **Type** String

Timestamp attribute

> **Description**
> The local time at the agent when the data was collected.
>
> **Type** String

Component attribute - This attribute is a key attribute.

> **Description**
> The index for this entry.
>
> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
> - Value_Exceeds_Maximum (2147483647)
> - Value_Exceeds_Minimum (-2147483648)

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

Description attribute

> **Description**
> A textual description of this component.
>
> **Type** String

Vendor Type attribute

> **Description**
> The vendor type for this component.
>
> **Type** String

Class attribute

> **Description**
> The general hardware type.
>
> **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:
> - other (1)
> - unknown (2)
> - chassis (3)
> - backplane (4)
> - container (5)
> - power_supply (6)
> - fan (7)
> - sensor (8)
> - module (9)
> - port (10)
> - stack (11)
> - cpu (12)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Name attribute

> **Description**
> The name of the component.
>
> **Type** String

Hardware Revision attribute

> **Description**
> The hardware revision string.
>
> **Type** String

Firmware Revision attribute

> **Description**
> The firmware revision string.
>
> **Type** String

Software Revision attribute

Description
    The software revision string.

Type   String

Serial Number attribute

Description
    The serial number.

Type   String

Manufacturer Name attribute

Description
    The name of the manufacturer of this component.

Type   String

Model Name attribute

Description
    The model name of this component.

Type   String

Asset ID attribute

Description
    User-assigned asset tracking identifier.

Type   String

URIs attribute

Description
    Additional identification information about the component.

Type   String

Administrative State attribute

Description
    The administrative state for this component.

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

- unknown (1)
- locked (2)
- shutting_down (3)
- unlocked (4)

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

Operational State attribute

Description
    The operational state for this component.

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

- unknown (1)
- disabled (2)

- enabled (3)
- testing (4)

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

Usage State attribute

> **Description**
> The usage state for this component.

> **Type** Integer with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>
> - unknown (1)
> - idle (2)
> - active (3)
> - busy (4)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Standby State attribute

> **Description**
> The standby status for this component.

> **Type** Integer with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>
> - unknown (1)
> - hot_standby (2)
> - cold_standby (3)
> - providing_service (4)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

UPS Power Configuration attribute group

Data gathered from SNMP Object xupsConfig. If the warehouse default setting is enabled, data for this attribute group is not stored in Tivoli Data Warehouse.

Historical group

This attribute group is not part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the UPS Power Configuration attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
> The managed system name of the agent.

> **Type** String

Timestamp attribute

Description

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

Type   String

Output Voltage attribute

Description

    The nominal UPS Output voltage per phase in volts.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Input Voltage attribute

Description

    The nominal UPS input voltage per phase in volts.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Output Watts attribute

Description

    The nominal UPS available real power output in Watts.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Output Frequency attribute

Description

    The nominal output frequency in tenths of hertz.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

DateAndTime attribute

> **Description**
> Date and time information for the UPS.

> **Type**   String

Low/Voltage Limit attribute

> **Description**
> The lower limit for acceptable output voltage.

> **Type**   Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
> - Value_Exceeds_Maximum (2147483647)
> - Value_Exceeds_Minimum (-2147483648)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

High/Voltage Limit attribute

> **Description**
> The upper limit for acceptable output voltage.

> **Type**   Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
> - Value_Exceeds_Maximum (2147483647)
> - Value_Exceeds_Minimum (-2147483648)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Install Date attribute

> **Description**
> The date when this UPS was installed.

> **Type**   String

UPS Receptacle Table attribute group

Data gathered from SNMP Object xupsRecepTable. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the UPS Receptacle Table attribute group:

Node attribute - This attribute is a key attribute.

Description
The managed system name of the agent.

Type String

Timestamp attribute

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

Type String

Receptacle attribute - This attribute is a key attribute.

Description
The number of the receptacle.

Type Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Status attribute

Description
The receptacle status.

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:
- on (1)
- off (2)
- pending_off (3)
- pending_on (4)
- unknown (5)
- reserved (6)
- failed_closed (7)
- failed_open (8)

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

Off Delay attribute

Description
The delay until the receptacle is turned off.

Type Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

On Delay attribute

> **Description**
>> The delay until the receptacle is turned on.
>
> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>> - Value_Exceeds_Maximum (2147483647)
>> - Value_Exceeds_Minimum (-2147483648)
>
>> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Auto Off Delay attribute

> **Description**
>> The delay after going on battery until the receptacle is automatically turned off.
>
> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>> - Value_Exceeds_Maximum (2147483647)
>> - Value_Exceeds_Minimum (-2147483648)
>
>> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Auto On Delay attribute

> **Description**
>> Seconds delay after the outlet is signaled to turn on before the output is automatically turned on.
>
> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>> - Value_Exceeds_Maximum (2147483647)
>> - Value_Exceeds_Minimum (-2147483648)
>
>> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

UPS System Information attribute group

Data gathered from SNMP Object system. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the UPS System Information attribute group:

Node attribute - This attribute is a key attribute.

>   **Description**
>   > The managed system name of the agent.
>
>   **Type**   String

Timestamp attribute

>   **Description**
>   > The local time at the agent when the data was collected.
>
>   **Type**   String

System Description attribute

>   **Description**
>   > The system description.
>
>   **Type**   String

System Up Time attribute

>   **Description**
>   > The time (in hundredths of a second) since the network management portion of the system was last re-initialized.
>
>   **Type**   String

System Contact attribute

>   **Description**
>   > The system contact.
>
>   **Type**   String

System Name attribute

>   **Description**
>   > The system name.
>
>   **Type**   String

System Location attribute

>   **Description**
>   > The system location.
>
>   **Type**   String

UPS Test attribute group

Data gathered from SNMP Object xupsTest. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

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

Node attribute - This attribute is a key attribute.

> **Description**
> > The managed system name of the agent.
>
> **Type** String

Timestamp attribute

> **Description**
> > The local time at the agent when the data was collected.
>
> **Type** String

Test Battery Status attribute

> **Description**
> > Battery test status.
>
> **Type** Integer with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
> > - unknown (1)
> > - passed (2)
> > - failed (3)
> > - in_progress (4)
> > - not_supported (5)
> > - inhibited (6)
> > - scheduled (7)
> >
> > Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Last General Test attribute

> **Description**
> > Last test requested.
>
> **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_test_started (2)
> > - test_system (3)
> > - test_secondary_source (4)
> > - flash_lights_test (5)
> >
> > Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Last General Test Result attribute

> **Description**
> > Last test result.
>
> **Type** Integer with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:

- unknown (1)
- passed (2)
- failed (3)
- in_progress (4)
- not_supported (5)
- inhibited (6)
- scheduled (7)

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

UPS Topology attribute group

Data gathered from SNMP Object xupsTopology. If the warehouse default setting is enabled, data for this attribute group is not stored in Tivoli Data Warehouse.

Historical group

This attribute group is not part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

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

Node attribute - This attribute is a key attribute.

> **Description**
> The managed system name of the agent.
>
> **Type** String

Timestamp attribute

> **Description**
> The local time at the agent when the data was collected.
>
> **Type** String

Toplogy Type attribute

> **Description**
> Value that denotes the type of UPS by its power topology.
>
> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
> - Value_Exceeds_Maximum (2147483647)
> - Value_Exceeds_Minimum (-2147483648)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Machine Code attribute

> **Description**
> ID Value that denotes the Powerware model of the UPS for software.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Unit Number attribute

Description
Identifies which unit and what type of data is being reported.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Power Strategy attribute

Description
Value that denotes which Power Strategy is currently set for the UPS.

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:

- high_alert (1)
- standard (2)
- enable_high_efficiency (3)
- immediate_high_efficiency (4)

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

UPS URI attribute group

Device URI gathered from SNMP Object entPhysicalTable. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

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

Node attribute - This attribute is a key attribute.

Description
The managed system name of the agent.

Type String

Timestamp attribute

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

Type String

URIs attribute

Description
Additional identification information about the component.

Type String

WH PDU Breaker Meters Table attribute group

Data gathered from SNMP Object breakerMetersTable with manufacturer, model, and serial number included. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group
This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions
The following list contains information about each attribute in the WH PDU Breaker Meters Table attribute group:

Node attribute - This attribute is a key attribute.

Description
The managed system name of the agent.

Type String

Timestamp attribute

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

Type String

Manufacturer Name attribute

Description
The name of the manufacturer of this component.

Type String

Model Name attribute

Description
The model name of this component.

Type String

Serial Number attribute

Description
The serial number.

Type String

Panel attribute - This attribute is a key attribute.

Description
The physical panel number.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Breaker attribute - This attribute is a key attribute.

Description
The breaker number.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Total Kilowatt Hours attribute

Description
The accumulated kilowatt-hours for this breaker since it was commissioned and put into service or since the last reset of the panel KHW measures.

Type Integer (Gauge) with enumerated values. 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.

Delta Total Kilowatt Hours attribute

Description
The accumulated kilowatt-hours for this breaker since it was commissioned and put into service or since the last reset of the panel KHW measures.

Type Integer (difference between successive values) with enumerated values. 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.

WH PDU Breaker Phase Meters Table attribute group

Data gathered from SNMP Object breakerPhaseMetersTable with manufacturer,
model, and serial number included. If the warehouse default setting is enabled,
data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use
with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the WH PDU
Breaker Phase Meters Table attribute group:

Node attribute - This attribute is a key attribute.

>**Description**
>>The managed system name of the agent.

>**Type**   String

Timestamp attribute

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

>**Type**   String

Manufacturer Name attribute

>**Description**
>>The name of the manufacturer of this component.

>**Type**   String

Model Name attribute

>**Description**
>>The model name of this component.

>**Type**   String

Serial Number attribute

>**Description**
>>The serial number.

>**Type**   String

Panel attribute - This attribute is a key attribute.

>**Description**
>>The physical panel number.

>**Type**   Integer (Numeric Property) with enumerated values. The strings
>>are displayed in the Tivoli Enterprise Portal. The warehouse and
>>queries return the values shown in parentheses. The following
>>values are defined:
>>- Value_Exceeds_Maximum (2147483647)
>>- Value_Exceeds_Minimum (-2147483648)

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

Breaker attribute - This attribute is a key attribute.

Description
The breaker number.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Phase attribute - This attribute is a key attribute.

Description
The line or phase identifier.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Present VA Demand attribute

Description
The present VA (input) demand of this phase on this breaker.

Type Integer (Gauge) with enumerated values. 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.

Power attribute

Description
The present power (input) demand of phase on this breaker.

Type Integer (Gauge) with enumerated values. 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.

Power Factor attribute

Description
>> The input power factor for this phase on this breaker. Varies from -1.00 to 1.00, multiplied by 100. If negative values are used, they indicate lagging power factor.

Type Integer (Gauge) with enumerated values. 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.

Current attribute

Description
>> The present current in 0.1 amps for this phase of this breaker.

Type Integer (Gauge) with enumerated values. 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.

Percent Load attribute

Description
>> The percentage of the breaker power capacity currently being used on this line.

Type Integer (Gauge) with enumerated values. 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.

WH PDU Breaker Ratings Table attribute group

Data gathered from SNMP Object breakerRatingsTable with manufacturer, model, and serial number included. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the WH PDU Breaker Ratings Table attribute group:

Node attribute - This attribute is a key attribute.

Description
    The managed system name of the agent.

Type   String

Timestamp attribute

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

Type   String

Manufacturer Name attribute

Description
    The name of the manufacturer of this component.

Type   String

Model Name attribute

Description
    The model name of this component.

Type   String

Serial Number attribute

Description
    The serial number.

Type   String

Panel attribute - This attribute is a key attribute.

Description
    The physical panel number.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Breaker attribute - This attribute is a key attribute.

Description
    The breaker number.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Name attribute

Description
Name given by the administrator to identify this breaker.

Type String

Rated Current attribute

Description
The rated current value in 0.1 amps of this breaker (for one phase) at full load.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Phases attribute

Description
The number of lines (phases) for this breaker.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

WH PDU Environment attribute group

Data gathered from SNMP Object xupsEnvironment with manufacturer, model and serial number included. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the WH PDU Environment attribute group:

Node attribute - This attribute is a key attribute.

Description
The managed system name of the agent.

Type String

Timestamp attribute

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

Type String

Manufacturer Name attribute

Description
> The name of the manufacturer of this component.

Type String

Model Name attribute

Description
> The model name of this component.

Type String

Serial Number attribute

Description
> The serial number.

Type String

Sensor Temperature attribute

Description
> The reading of the remote probe's temperature sensor, if present.

Type Integer (Gauge) with enumerated values. 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.

Sensor Humidity attribute

Description
> The reading of the remote probe's humidity sensor, if present.

Type Integer (Gauge) with enumerated values. 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.

Contacts attribute

Description
> The number of contacts.

Type Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
> - Value_Exceeds_Maximum (2147483647)
> - Value_Exceeds_Minimum (-2147483648)

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

Sensor Temperature Lower Limit attribute

Description
The lower limit of the remote probe's temperature reading. If the remote temperature sensor reading falls below this value, the xupsRemoteTempBad alarm will occur.

Type Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Sensor Temperature Upper Limit attribute

Description
The upper limit of the remote probe's temperature reading. If the remote temperature sensor reading rises above this value, the xupsRemoteTempBad alarm will occur.

Type Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Sensor Humidity Lower Limit attribute

Description
The lower limit of the remote probe's humidity reading. If the remote humidity sensor reading falls below this value, the xupsRemoteHumidityBad alarm will occur.

Type Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Sensor Humidity Upper Limit attribute

Description
The upper limit of the remote probe's humidity reading. If the remote humidity sensor reading rises above this value, the xupsRemoteHumidityBad alarm will occur.

Type Integer (Numeric Property) with enumerated values. The strings

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

WH PDU Input attribute group

Data gathered from SNMP Object pduInput with manufacturer, model, and serial number included. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the WH PDU Input attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
> > The managed system name of the agent.

> **Type** String

Timestamp attribute

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

> **Type** String

Manufacturer Name attribute

> **Description**
> > The name of the manufacturer of this component.

> **Type** String

Model Name attribute

> **Description**
> > The model name of this component.

> **Type** String

Serial Number attribute

> **Description**
> > The serial number.

> **Type** String

Input Frequency attribute

> **Description**
> > The present frequency reading for the full PDU.

Type Integer (Gauge) with enumerated values. 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.

Input VA Demand attribute

Description
The present VA input demand of the full PDU 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:

- 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.

Input Power attribute

Description
The present input power demand of the full PDU 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:

- 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.

Input Power Factor attribute

Description
The input power factor for the full PDU system. Varies from -1.00 to 1.00, multiplied by 100. If negative values are used, they indicate lagging power factor.

Type Integer (Gauge) with enumerated values. 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.

Input Ground Current attribute

Description
The present current in 0.1 amps in the PDU's ground phase.

Type Integer (Gauge) with enumerated values. 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.

Input Voltage Units attribute

Description
Indicates whether the pduInputPhaseVoltage readings are 'Vrms Line-Line' or 'Vrms Line-Neutral'.

Type String

Input Phases attribute

Description
The number of input phases for this PDU.

Type Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
• Value_Exceeds_Maximum (2147483647)
• Value_Exceeds_Minimum (-2147483648)

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

WH PDU Input Table attribute group

Data gathered from SNMP Object pduInputTable with manufacturer, model, and serial number included. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the WH PDU Input Table attribute group:

Node attribute - This attribute is a key attribute.

Description
The managed system name of the agent.

Type String

Timestamp attribute

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

Type String

Manufacturer Name attribute

Description
The name of the manufacturer of this component.

Type String

Model Name attribute

> **Description**
>> The model name of this component.

> **Type** String

Serial Number attribute

> **Description**
>> The serial number.

> **Type** String

Input Phase attribute - This attribute is a key attribute.

> **Description**
>> The input line identifier.

> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>> - Value_Exceeds_Maximum (2147483647)
>> - Value_Exceeds_Minimum (-2147483648)
>>
>> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Input Voltage attribute

> **Description**
>> The present input voltage for this phase.

> **Type** Integer (Gauge) with enumerated values. 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.

Input Current attribute

> **Description**
>> The present input current in 0.1 amps for this phase.

> **Type** Integer (Gauge) with enumerated values. 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.

Input Percent Load attribute

> **Description**
>> The percentage of the power capacity currently being used on this line.

> **Type** Integer (Gauge) with enumerated values. 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.

WH PDU Nameplate attribute group

Data gathered from SNMP Object pduNameplate with manufacturer, model, and serial number included. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the WH PDU Nameplate attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
> > The managed system name of the agent.
>
> **Type**   String

Timestamp attribute

> **Description**
> > The local time at the agent when the data was collected.
>
> **Type**   String

Manufacturer Name attribute

> **Description**
> > The name of the manufacturer of this component.
>
> **Type**   String

Model Name attribute

> **Description**
> > The model name of this component.
>
> **Type**   String

Serial Number attribute

> **Description**
> > The serial number.
>
> **Type**   String

Full VA Rating attribute

> **Description**
> > The full VA rating of this PDU for all phases.
>
> **Type**   Integer (Numeric Property) with enumerated values. The strings

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Nominal Output Voltage attribute

    Description

        The nominal output voltage of this PDU.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Phases attribute

    Description

        The number of lines (phases) for this PDU.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Panels attribute

    Description

        The number of panels or subfeeds contained in this PDU system.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

WH PDU Output attribute group

Data gathered from SNMP Object pduOutput with manufacturer, model, and serial number included. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the WH PDU Output attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
>> The managed system name of the agent.
>
> **Type** String

Timestamp attribute

> **Description**
>> The local time at the agent when the data was collected.
>
> **Type** String

Manufacturer Name attribute

> **Description**
>> The name of the manufacturer of this component.
>
> **Type** String

Model Name attribute

> **Description**
>> The model name of this component.
>
> **Type** String

Serial Number attribute

> **Description**
>> The serial number.
>
> **Type** String

Output Kilowatt Hours attribute

> **Description**
>> The accumulated kilowatt-hour value for the full PDU system since the last reset.
>
> **Type** Integer (Gauge) with enumerated values. 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.

Output Present VA attribute

> **Description**
>> The present VA output of the full PDU 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:

- 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.

Output Power attribute

Description
The present output power of the full PDU 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:

- 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.

Output Power Factor attribute

Description
The output power factor for the full PDU system. Varies from -1.00 to 1.00, multiplied by 100. If negative values are used, they indicate lagging power factor.

Type   Integer (Gauge) with enumerated values. 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.

Output Neutral Current attribute

Description
The present current in 0.1 amps in the PDU's output neutral phase.

Type   Integer (Gauge) with enumerated values. 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.

Output Rated Current attribute

Description
The rated current value in 0.1 amps for one PDU Output phase at full load.

Type   Integer (Gauge) with enumerated values. 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.

Output Voltage Units attribute

Description
Indicates whether the pduOutputPhaseVoltage readings are 'Vrms Line-Line' or 'Vrms Line-Neutral'.

Type String

Output Phases attribute

Description
The number of output phases for this PDU.

Type Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Delta Output Kilowatt Hours attribute

Description
The change in accumulated kilowatt-hour value since the last query.

Type Integer (difference between successive values) with enumerated values. 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.

WH PDU Output Table attribute group

Data gathered from SNMP Object pduOutputTable with manufacturer, model, and serial number included. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the WH PDU Output Table attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
>> The managed system name of the agent.
>
> **Type**   String

Timestamp attribute

> **Description**
>> The local time at the agent when the data was collected.
>
> **Type**   String

Manufacturer Name attribute

> **Description**
>> The name of the manufacturer of this component.
>
> **Type**   String

Model Name attribute

> **Description**
>> The model name of this component.
>
> **Type**   String

Serial Number attribute

> **Description**
>> The serial number.
>
> **Type**   String

Output Phase attribute - This attribute is a key attribute.

> **Description**
>> The output line identifier.
>
> **Type**   Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>> - Value_Exceeds_Maximum (2147483647)
>> - Value_Exceeds_Minimum (-2147483648)
>>
>> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Output Voltage attribute

> **Description**
>> The present output voltage for this phase.
>
> **Type**   Integer (Gauge) with enumerated values. 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.

Output Current attribute

> **Description**
>> The present output current in 0.1 amps for this phase.

Type Integer (Gauge) with enumerated values. 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.

Output Percent Load attribute

Description
The percentage of the power capacity currently being used on this line.

Type Integer (Gauge) with enumerated values. 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.

WH PDU Panel Meters Table attribute group

Data gathered from SNMP Object panelMetersTable with manufacturer, model, and serial number included. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the WH PDU Panel Meters Table attribute group:

Node attribute - This attribute is a key attribute.

Description
The managed system name of the agent.

Type String

Timestamp attribute

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

Type String

Manufacturer Name attribute

Description
The name of the manufacturer of this component.

Type String

Model Name attribute

Description
> The model name of this component.

Type   String

Serial Number attribute

Description
> The serial number.

Type   String

Total Kilowatt Hours attribute

Description
> The accumulated kilowatt-hours for this panel since it was commissioned and put into service or since the last reset of the system KHW measures.

Type   Integer (Gauge) with enumerated values. 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.

Panel attribute - This attribute is a key attribute.

Description
> The physical panel number.

Type   Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
> - Value_Exceeds_Maximum (2147483647)
> - Value_Exceeds_Minimum (-2147483648)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Present VA Demand attribute

Description
> The present VA (input) demand of this panel.

Type   Integer (Gauge) with enumerated values. 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.

Power attribute

Description
> The present power (input) demand of this panel.

Type   Integer (Gauge) with enumerated values. 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.

Power Factor attribute

> **Description**
> > The input power factor for this panel. Varies from -1.00 to 1.00, multiplied by 100. If negative values are used, they indicate lagging power factor.
>
> **Type** Integer (Gauge) with enumerated values. 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.

Neutral Current attribute

> **Description**
> > The present neutral phase current in 0.1 amps for this panel.
>
> **Type** Integer (Gauge) with enumerated values. 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.

Delta Total Kilowatt Hours attribute

> **Description**
> > The accumulated kilowatt-hours for this panel since it was commissioned and put into service or since the last reset of the system KHW measures.
>
> **Type** Integer (difference between successive values) with enumerated values. 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.

WH PDU Panel Phase Meters Table attribute group

Data gathered from SNMP Object panelPhaseMetersTable with manufacturer, model, and serial number included. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the WH PDU Panel Phase Meters Table attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
>> The managed system name of the agent.
>
> **Type** String

Timestamp attribute

> **Description**
>> The local time at the agent when the data was collected.
>
> **Type** String

Manufacturer Name attribute

> **Description**
>> The name of the manufacturer of this component.
>
> **Type** String

Model Name attribute

> **Description**
>> The model name of this component.
>
> **Type** String

Serial Number attribute

> **Description**
>> The serial number.
>
> **Type** String

Panel attribute - This attribute is a key attribute.

> **Description**
>> The physical panel number.
>
> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>> - Value_Exceeds_Maximum (2147483647)
>> - Value_Exceeds_Minimum (-2147483648)
>>
>> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Phase attribute - This attribute is a key attribute.

> **Description**
>> The line or phase identifier.
>
> **Type** Integer (Numeric Property) with enumerated values. The strings

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Voltage attribute

Description
The present voltage for this phase.

Type   Integer (Gauge) with enumerated values. 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.

Current attribute

Description
The present current in 0.1 amps for this phase.

Type   Integer (Gauge) with enumerated values. 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.

Percent Load attribute

Description
The percentage of the panel power capacity currently being used on this line.

Type   Integer (Gauge) with enumerated values. 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.

WH PDU Panel Ratings Table attribute group

Data gathered from SNMP Object panelRatingsTable with manufacturer, model, and serial number included. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the WH PDU Panel Ratings Table attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
> > The managed system name of the agent.
>
> **Type**   String

Timestamp attribute

> **Description**
> > The local time at the agent when the data was collected.
>
> **Type**   String

Manufacturer Name attribute

> **Description**
> > The name of the manufacturer of this component.
>
> **Type**   String

Model Name attribute

> **Description**
> > The model name of this component.
>
> **Type**   String

Serial Number attribute

> **Description**
> > The serial number.
>
> **Type**   String

Panel attribute - This attribute is a key attribute.

> **Description**
> > The physical panel number.
>
> **Type**   Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
> > - Value_Exceeds_Maximum (2147483647)
> > - Value_Exceeds_Minimum (-2147483648)
> >
> > Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Rated Voltage attribute

> **Description**
> > The nominal Voltage of this panel (as distributed to the breakers or subfeeds).
>
> **Type**   Integer (Numeric Property) with enumerated values. The strings

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Rated Breaker Current attribute

> **Description**
> The rated current value in 0.1 amps for one panel (input) phase at full load.

> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>
> - Value_Exceeds_Maximum (2147483647)
> - Value_Exceeds_Minimum (-2147483648)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Phases attribute

> **Description**
> The number of lines (phases) for this panel.

> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>
> - Value_Exceeds_Maximum (2147483647)
> - Value_Exceeds_Minimum (-2147483648)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Breakers attribute

> **Description**
> The number of breakers contained in this panel.

> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>
> - Value_Exceeds_Maximum (2147483647)
> - Value_Exceeds_Minimum (-2147483648)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Voltage Units attribute

> **Description**
> Indicates whether the Phase Voltage readings are ′Vrms Line-Line′ or ′Vrms Line-Neutral′.

> **Type** String

WH UPS Bypass attribute group

Data gathered from SNMP Object xupsBypass with manufacturer, model, and serial number included. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the WH UPS Bypass attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
>> The managed system name of the agent.
>
> **Type** String

Timestamp attribute

> **Description**
>> The local time at the agent when the data was collected.
>
> **Type** String

Manufacturer attribute

> **Description**
>> The UPS manufacturer name.
>
> **Type** String

Model attribute

> **Description**
>> The UPS model.
>
> **Type** String

Serial Number attribute

> **Description**
>> The device name.
>
> **Type** String

Frequency attribute

> **Description**
>> The bypass frequency in tenths of hertz.
>
> **Type** Integer (Gauge) with enumerated values. 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.

Phases attribute

Description
> The number of bypass phases.

Type   Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
> - Value_Exceeds_Maximum (2147483647)
> - Value_Exceeds_Minimum (-2147483648)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

WH UPS Bypass Table attribute group

Data gathered from SNMP Object xupsBypassTable with manufacturer, model, and serial number included. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the WH UPS Bypass Table attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
> > The managed system name of the agent.
>
> **Type**   String

Timestamp attribute

> **Description**
> > The local time at the agent when the data was collected.
>
> **Type**   String

Manufacturer attribute

> **Description**
> > The UPS manufacturer name.
>
> **Type**   String

Model attribute

> **Description**
> > The UPS model.
>
> **Type**   String

Serial Number attribute

> **Description**
> > The device name.
>
> **Type**   String

Phase attribute - This attribute is a key attribute.

Description
> The bypass phase.

Type Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
> - Value_Exceeds_Maximum (2147483647)
> - Value_Exceeds_Minimum (-2147483648)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Voltage attribute

Description
> The measured bypass voltage in volts.

Type Integer (Gauge) with enumerated values. 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.

WH UPS Environment attribute group

Data gathered from SNMP Object xupsEnvironment with manufacturer, model, and serial number included. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the WH UPS Environment attribute group:

Node attribute - This attribute is a key attribute.

Description
> The managed system name of the agent.

Type String

Timestamp attribute

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

Type String

Manufacturer attribute

Description
> The UPS manufacturer name.

Type String

Model attribute

> **Description**
>> The UPS model.
>
> **Type** String

Serial Number attribute

> **Description**
>> The device name.
>
> **Type** String

Ambient Temperature attribute

> **Description**
>> The ambient (intake) temperature.
>
> **Type** Integer (Gauge) with enumerated values. 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.

Ambient Temperature Lower Limit attribute

> **Description**
>> The lower limit of the ambient temperature.
>
> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>> - Value_Exceeds_Maximum (2147483647)
>> - Value_Exceeds_Minimum (-2147483648)
>>
>> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Ambient Temperature Upper Limit attribute

> **Description**
>> The upper limit of the ambient temperature.
>
> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>> - Value_Exceeds_Maximum (2147483647)
>> - Value_Exceeds_Minimum (-2147483648)
>>
>> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Ambient Humidity attribute

> **Description**
>> The ambient (intake) humidity.
>
> **Type** Integer (Gauge) with enumerated values. 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.

Remote Temperature attribute

Description
> The reading of the remote probe's temperature sensor, if present.

Type Integer (Gauge) with enumerated values. 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.

Remote Humidity attribute

Description
> The reading of the remote probe's humidity sensor, if present.

Type Integer (Gauge) with enumerated values. 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.

Contacts attribute

Description
> The number of contacts.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Remote Temperature Lower Limit attribute

Description
> The lower limit of the remote probe's temperature reading. If the remote temperature sensor reading falls below this value, the xupsRemoteTempBad alarm will occur.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Remote Temperature Upper Limit attribute

> **Description**
> The upper limit of the remote probe's temperature reading. If the remote temperature sensor reading rises above this value, the xupsRemoteTempBad alarm will occur.
>
> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
> - Value_Exceeds_Maximum (2147483647)
> - Value_Exceeds_Minimum (-2147483648)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Remote Humidity Lower Limit attribute

> **Description**
> The lower limit of the remote probe's humidity reading. If the remote humidity sensor reading falls below this value, the xupsRemoteHumidityBad alarm will occur.
>
> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
> - Value_Exceeds_Maximum (2147483647)
> - Value_Exceeds_Minimum (-2147483648)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Remote Humidity Upper Limit attribute

> **Description**
> The upper limit of the remote probe's humidity reading. If the remote humidity sensor reading rises above this value, the xupsRemoteHumidityBad alarm will occur.
>
> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
> - Value_Exceeds_Maximum (2147483647)
> - Value_Exceeds_Minimum (-2147483648)
>
> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

WH UPS Input attribute group

Data gathered from SNMP Object xupsInput with manufacturer, model, and serial number included. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the WH UPS Input attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
>> The managed system name of the agent.
>
> **Type** String

Timestamp attribute

> **Description**
>> The local time at the agent when the data was collected.
>
> **Type** String

Manufacturer attribute

> **Description**
>> The UPS manufacturer name.
>
> **Type** String

Model attribute

> **Description**
>> The UPS model.
>
> **Type** String

Serial Number attribute

> **Description**
>> The device name.
>
> **Type** String

Input Frequency attribute

> **Description**
>> The utility line frequency in tenths of hertz.
>
> **Type** Integer (Gauge) with enumerated values. 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.

Input Line Bads attribute

Description

    The number of times the input was out of tolerance in voltage or frequency.

Type   Integer (Counter) with enumerated values. 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.

Input Phases attribute

Description

    The number of input phases.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Input Source attribute

Description

    The present external source of input power.

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:

- other (1)
- none (2)
- primary_utility (3)
- bypass_feed (4)
- secondary_utility (5)
- generator (6)
- flywheel (7)
- fuel_cell (8)

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

Dual Input Status attribute

Description

    The present status of the sources of input power in a dual source UPS.

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:

- both_sources_bad (1)

- primary_source_good (2)
- secondary_source_good (3)
- both_sources_good (4)

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

WH UPS Input Table attribute group

Data gathered from SNMP Object xupsInputTable with manufacturer, model, and serial number included. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the WH UPS Input Table attribute group:

Node attribute - This attribute is a key attribute.

   Description
       The managed system name of the agent.

   Type   String

Timestamp attribute

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

   Type   String

Manufacturer attribute

   Description
       The UPS manufacturer name.

   Type   String

Model attribute

   Description
       The UPS model.

   Type   String

Serial Number attribute

   Description
       The device name.

   Type   String

Input Phase attribute - This attribute is a key attribute.

   Description
       The number of the phase. Serves as index for input table.

   Type   Integer (Numeric Property) with enumerated values. The strings

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Input Voltage attribute

    Description
        The measured input voltage in volts.

    Type   Integer (Gauge) with enumerated values. 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.

Input Current in Amps attribute

    Description
        The measured input current in amps.

    Type   Integer (Gauge) with enumerated values. 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.

Input Current attribute

    Description
        The measured input current in 0.1 amps.

    Type   Integer (Gauge) with enumerated values. 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.

Input Watts attribute

    Description
        The measured input power in Watts.

    Type   Integer (Gauge) with enumerated values. 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.

WH UPS Output attribute group

Data gathered from SNMP Object xupsOutput with manufacturer, model, and serial number included. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the WH UPS Output attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
> The managed system name of the agent.
>
> **Type** String

Timestamp attribute

> **Description**
> The local time at the agent when the data was collected.
>
> **Type** String

Manufacturer attribute

> **Description**
> The UPS manufacturer name.
>
> **Type** String

Model attribute

> **Description**
> The UPS model.
>
> **Type** String

Serial Number attribute

> **Description**
> The device name.
>
> **Type** String

Output Percent Load attribute

> **Description**
> The output load in percent of rated 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:
> - 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.

Output Frequency attribute

Description
The measured output frequency in tenths of hertz.

Type Integer (Gauge) with enumerated values. 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.

Phases attribute

Description
The number of metered output phases.

Type Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Output Source attribute

Description
The present source of output power.

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:
- other (1)
- none (2)
- normal (3)
- bypass (4)
- battery (5)
- booster (6)
- reducer (7)
- parallel_capacity (8)
- parallel_redundant (9)
- high_efficiency_mode (10)
- maintenance_bypass (11)

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

WH UPS Output Table attribute group

Data gathered from SNMP Object xupsOutputTable with manufacturer, model, and serial number included. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the WH UPS Output Table attribute group:

Node attribute - This attribute is a key attribute.

> **Description**
>> The managed system name of the agent.
>
> **Type** String

Timestamp attribute

> **Description**
>> The local time at the agent when the data was collected.
>
> **Type** String

Manufacturer attribute

> **Description**
>> The UPS manufacturer name.
>
> **Type** String

Model attribute

> **Description**
>> The UPS model.
>
> **Type** String

Serial Number attribute

> **Description**
>> The device name.
>
> **Type** String

Output Phase attribute - This attribute is a key attribute.

> **Description**
>> The number of the output phase.
>
> **Type** Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>> - Value_Exceeds_Maximum (2147483647)
>> - Value_Exceeds_Minimum (-2147483648)
>>
>> Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Output Voltage attribute

> **Description**
> The measured output voltage in volts.

> **Type** Integer (Gauge) with enumerated values. 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.

Output Current in Amps attribute

> **Description**
> The measured output current in amps.

> **Type** Integer (Gauge) with enumerated values. 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.

Output Current attribute

> **Description**
> The measured output current in 0.1 amps.

> **Type** Integer (Gauge) with enumerated values. 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.

Output Watts attribute

> **Description**
> The measured real output power in Watts.

> **Type** Integer (Gauge) with enumerated values. 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.

WH UPS Power Configuration attribute group

Data gathered from SNMP Object xupsConfig with manufacturer, model, and serial number included. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the WH UPS Power Configuration attribute group:

Node attribute - This attribute is a key attribute.

>   **Description**
>   >   The managed system name of the agent.
>
>   **Type**   String

Timestamp attribute

>   **Description**
>   >   The local time at the agent when the data was collected.
>
>   **Type**   String

Manufacturer attribute

>   **Description**
>   >   The UPS manufacturer name.
>
>   **Type**   String

Model attribute

>   **Description**
>   >   The UPS model.
>
>   **Type**   String

Serial Number attribute

>   **Description**
>   >   The device name.
>
>   **Type**   String

Output Voltage attribute

>   **Description**
>   >   The nominal UPS Output voltage per phase in volts.
>
>   **Type**   Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
>   >   - Value_Exceeds_Maximum (2147483647)
>   >   - Value_Exceeds_Minimum (-2147483648)
>
>   >   Any other values will display the actual value returned by the agent in the Tivoli Enterprise Portal.

Input Voltage attribute

>   **Description**
>   >   The nominal UPS input voltage per phase in volts.
>
>   **Type**   Integer (Numeric Property) with enumerated values. The strings

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Output Watts attribute

Description
The nominal UPS available real power output in Watts.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Output Frequency attribute

Description
The nominal output frequency in tenths of hertz.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

DateAndTime attribute

Description
Date and time information for the UPS.

Type String

Low/Voltage Limit attribute

Description
The lower limit for acceptable output voltage.

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

- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

High/Voltage Limit attribute

Description
> The upper limit for acceptable output voltage.

Type Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Install Date attribute

Description
> The date when this UPS was installed.

Type String

WH UPS Topology attribute group

Data gathered from SNMP Object xupsTopology with manufacturer, model, and serial number included. If the warehouse default setting is enabled, data for this attribute group is stored in Tivoli Data Warehouse.

Historical group

This attribute group is part of the default historical group, and is eligible for use with Tivoli Data Warehouse.

Attribute descriptions

The following list contains information about each attribute in the WH UPS Topology attribute group:

Node attribute - This attribute is a key attribute.

Description
> The managed system name of the agent.

Type String

Timestamp attribute

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

Type String

Manufacturer attribute

Description
> The UPS manufacturer name.

Type String

Model attribute

Description
> The UPS model.

Type String

Serial Number attribute

Description
The device name.

Type String

Toplogy Type attribute

Description
Value that denotes the type of UPS by its power topology.

Type Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Machine Code attribute

Description
ID Value that denotes the Powerware model of the UPS for software.

Type Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Unit Number attribute

Description
Identifies which unit and what type of data is being reported.

Type Integer (Numeric Property) with enumerated values. The strings are displayed in the Tivoli Enterprise Portal. The warehouse and queries return the values shown in parentheses. The following values are defined:
- Value_Exceeds_Maximum (2147483647)
- Value_Exceeds_Minimum (-2147483648)

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

Power Strategy attribute

Description
Value that denotes which Power Strategy is currently set for the UPS.

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:
- high_alert (1)
- standard (2)

- enable_high_efficiency (3)
- immediate_high_efficiency (4)

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

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 whose historical data is being collected. Required disk storage is an important factor to consider 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.
- *Attribute group* is the name of the attribute group as it is displayed in the warehouse configuration panel.
- *Bytes per instance (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 instance (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 those 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 instance (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 instances of data that you plan to collect. An attribute group can have single or multiple instances 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 instances is two.

The following table contains capacity planning information for the data logged by IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent.

Table 1. Capacity planning for historical data logged by component IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert

Table	Attribute group	Bytes per instance (agent)	Database bytes per instance (warehouse)	Aggregate bytes per instance (warehouse)
KE8MGDMTR	KE8_MANAGED_METER_SYSTEMS	197	198	235
KE8MGDPDU	KE8_MANAGED_PDU_SYSTEMS	197	198	235
KE8MGDUPS	KE8_MANAGED_UPS_SYSTEMS	197	198	235

Table 1. Capacity planning for historical data logged by component IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert (continued)

Table	Attribute group	Bytes per instance (agent)	Database bytes per instance (warehouse)	Aggregate bytes per instance (warehouse)
KE8MTRACAI	KE8_METER_ACTIVE_ALARMS	662	664	740
KE8MTRACTA	KE8_METER_ACTIVE_ALARMS_URI	726	729	805
KE8MTRALRM	KE8_METER_ALARMS	80	77	153
KE8PWRMET3	KE8_METER_DEMAND_MEASURES	180	187	386
KE8PWRMET2	KE8_METER_ENERGY_MEASURES	156	157	239
KE8PCDMEAS	KE8_METER_MEASURES	162	166	398
KE8PWRMET1	KE8_METER_MIN_AVG_MAX	164	167	399
KE8PCDPHAS	KE8_METER_PHASE_MEASURES	100	102	295
KE8MTRPHYS	KE8_METER_PHYSICAL_CONFIGURATION	1507	1520	1557
KE8MTRPQSA	KE8_METER_POWER_QUALILTY_SAG_SURGE	123	124	191
KE8MTRPOWE	KE8_METER_POWER_QUALITY_MEASURES	168	196	335
KE8PWRMETE	KE8_METER_REALTIME_MEASURES	112	117	466
KE8PWRMET0	KE8_METER_REALTIME_PHASE_MEASURES	112	117	427
KE8MTRSYS	KE8_METER_SYSTEM_INFORMATION	906	907	944
KE8MTRID	KE8_MTR_ID	460	459	496
KE8MTRPOS	KE8_MTR_PERFORMANCE_OBJECT_STATUS	288	289	326
KE8MTRURI	KE8_MTR_URI	140	137	174
KE8PDUACAI	KE8_PDU_ACTIVE_ALARMS	662	664	740
KE8PDUACTA	KE8_PDU_ACTIVE_ALARMS_URI	726	729	805
KE8PDUALRM	KE8_PDU_ALARMS	80	77	153
KE8PDUBMT	KE8_PDU_BREAKER_METERS_TABLE	92	92	207
KE8PDUBPMT	KE8_PDU_BREAKER_PHASE_METERS_TABLE	108	112	344
KE8PDUBRT	KE8_PDU_BREAKER_RATINGS_TABLE	123	124	161
KE8PDUCON	KE8_PDU_CONTACT_SENSOR_TABLE	151	151	188
KE8PDUENV	KE8_PDU_ENVIRONMENT	104	107	222
KE8PDUID	KE8_PDU_ID	460	459	496
KE8PDUINP	KE8_PDU_INPUT	131	134	366
KE8PDUIOT	KE8_PDU_INPUT_OUTPUT	194	206	711
KE8PDUWOUT	KE8_PDU_INPUT_OUTPUT_TABLE	108	112	383
KE8PDUINPT	KE8_PDU_INPUT_TABLE	92	92	246
KE8PDUNAME	KE8_PDU_NAMEPLATE	92	92	129
KE8PDUOUT	KE8_PDU_OUTPUT	139	144	454
KE8PDUOUTT	KE8_PDU_OUTPUT_TABLE	92	92	246
KE8PDUPMT	KE8_PDU_PANEL_METERS_TABLE	104	107	378
KE8PDUPPMT	KE8_PDU_PANEL_PHASE_METERS_TABLE	96	97	251
KE8PDUPRT	KE8_PDU_PANEL_RATINGS_TABLE	127	129	166
KE8PDUPOS	KE8_PDU_PERFORMANCE_OBJECT_STATUS	288	289	326

Table 1. Capacity planning for historical data logged by component IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert (continued)

Table	Attribute group	Bytes per instance (agent)	Database bytes per instance (warehouse)	Aggregate bytes per instance (warehouse)
KE8PDUPHYS	KE8_PDU_PHYSICAL_CONFIGURATION	1507	1520	1557
KE8PDUSYS	KE8_PDU_SYSTEM_INFORMATION	906	907	944
KE8PDUURI	KE8_PDU_URI	140	137	174
KE8POBJST	KE8_PERFORMANCE_OBJECT_STATUS	288	289	326
KE8UPSACAI	KE8_UPS_ACTIVE_ALARMS	662	664	740
KE8UPSACTA	KE8_UPS_ACTIVE_ALARMS_URI	726	729	805
KE8UPSALRM	KE8_UPS_ALARMS	80	77	153
KE8UPSBAT	KE8_UPS_BATTERY	116	119	351
KE8UPSBYP	KE8_UPS_BYPASS	84	82	158
KE8UPSBYPT	KE8_UPS_BYPASS_TABLE	84	82	158
KE8UPSCON	KE8_UPS_CONTACT_TABLE	151	151	188
KE8UPSENV	KE8_UPS_ENVIRONMENT	120	127	320
KE8UPSID	KE8_UPS_ID	201	200	237
KE8UPSIDE	KE8_UPS_IDENTIFICATION	264	264	301
KE8UPSIDU	KE8_UPS_IDENTIFICATION_URI	328	329	366
KE8UPSINP	KE8_UPS_INPUT	96	97	188
KE8UPSIO	KE8_UPS_INPUT_OUTPUT	112	117	286
KE8UPSIOT	KE8_UPS_INPUT_OUTPUT_TABLE	116	122	471
KE8UPSINPT	KE8_UPS_INPUT_TABLE	96	97	290
KE8UPSOUT	KE8_UPS_OUTPUT	92	92	207
KE8UPSOUTT	KE8_UPS_OUTPUT_TABLE	96	97	290
KE8UPSPOS	KE8_UPS_PERFORMANCE_OBJECT_STATUS	288	289	326
KE8UPSPHYS	KE8_UPS_PHYSICAL_CONFIGURATION	1507	1520	1557
KE8UPSCFG	KE8_UPS_POWER_CONFIGURATION	138	142	179
KE8UPSRECT	KE8_UPS_RECEPTACLE_TABLE	100	102	139
KE8UPSSYS	KE8_UPS_SYSTEM_INFORMATION	906	907	944
KE8UPSTES	KE8_UPS_TEST	88	87	124
KE8UPSTOP	KE8_UPS_TOPOLOGY	92	92	129
KE8UPSURI	KE8_UPS_URI	140	137	174
KE8PDUWBMT	KE8_WH_PDU_BREAKER_METERS_TABLE	476	479	594
KE8PDUWBM2	KE8_WH_PDU_BREAKER_PHASE_METERS_TABLE	492	499	731
KE8PDUWBRT	KE8_WH_PDU_BREAKER_RATINGS_TABLE	507	511	548
KE8PDUWENV	KE8_WH_PDU_ENVIRONMENT	488	494	609
KE8PDUWINP	KE8_WH_PDU_INPUT	515	521	753
KE8PDUWINT	KE8_WH_PDU_INPUT_TABLE	476	479	633
KE8PDUWNAM	KE8_WH_PDU_NAMEPLATE	476	479	516
KE8PDUIO	KE8_WH_PDU_OUTPUT	523	531	841

Table 1. Capacity planning for historical data logged by component IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert (continued)

Table	Attribute group	Bytes per instance (agent)	Database bytes per instance (warehouse)	Aggregate bytes per instance (warehouse)
KE8PDUWOTT	KE8_WH_PDU_OUTPUT_TABLE	476	479	633
KE8PDUWPMT	KE8_WH_PDU_PANEL_METERS_TABLE	488	494	765
KE8PDUWPM2	KE8_WH_PDU_PANEL_PHASE_METERS_TABLE	480	484	638
KE8PDUWPRT	KE8_WH_PDU_PANEL_RATINGS_TABLE	511	516	553
KE8UPSWBYP	KE8_WH_UPS_BYPASS	209	210	286
KE8UPSWBYT	KE8_WH_UPS_BYPASS_TABLE	209	210	286
KE8UPSWENV	KE8_WH_UPS_ENVIRONMENT	245	255	448
KE8UPSWINP	KE8_WH_UPS_INPUT	221	225	316
KE8UPSWINT	KE8_WH_UPS_INPUT_TABLE	221	225	418
KE8UPSWOUT	KE8_WH_UPS_OUTPUT	217	220	335
KE8UPSWOTT	KE8_WH_UPS_OUTPUT_TABLE	221	225	418
KE8UPSWCFG	KE8_WH_UPS_POWER_CONFIGURATION	263	270	307
KE8UPSWTOP	KE8_WH_UPS_TOPOLOGY	217	220	257

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 situations from Tivoli Enterprise Portal by using the Situation Editor.

The monitoring agents that you use to monitor your system environment are delivered with a set of predefined situations that you can use as-is or you can create new situations to meet your requirements. Predefined situations contain attributes that check for system conditions common to many enterprises.

Using predefined situations can improve the speed with which you can begin using the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent. You can examine and, if necessary, change the conditions or values being monitored by a predefined situation to those 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 new 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 of the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert 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

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

More information about situations

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

For a list of the predefined situations 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.

Agent level navigator items
- Eaton Power Xpert
  - Not applicable
- Managed Systems
  - Not applicable

UPS Endpoints (UPS) subnode
- UPS Endpoints
  - Not applicable
- UPS Alarms
  - KE8_UPS_Critical_Alarm_Active
  - KE8_UPS_Caution_Alarm_Active
- UPS Battery Status
  - KE8_UPS_Battery_Time_Low
  - KE8_UPS_Battery_Time_Critical
- UPS Device Configuration
  - KE8_UPS_Receptacle_Failed
- UPS Device Status
  - Not applicable
- UPS Environmental Summary
  - KE8_UPS_Ambient_Temp_High
  - KE8_UPS_Remote_Temp_High
  - KE8_UPS_Remote_Humidity_High
  - KE8_UPS_Remote_Humidity_Low
- UPS Power Summary
  - KE8_UPS_Dual_Input_Status_Bad
  - KE8_UPS_On_Battery
  - KE8_UPS_On_Bypass
  - KE8_UPS_Off_Battery
  - KE8_UPS_High_Efficiency_Mode

PDU Endpoints (PDU) subnode
- PDU Endpoints
  - Not applicable
- PDU Alarms
  - KE8_PDU_Critical_Alarm_Active
  - KE8_PDU_Caution_Alarm_Active
- PDU Device Configuration
  - Not applicable
- PDU Device Status
  - Not applicable
- PDU Environmental Summary

- – KE8_PDU_Remote_Temp_High
- – KE8_PDU_Remote_Humidity_High
- – KE8_PDU_Remote_Humidity_Low
- PDU Metering Data
  - – Not applicable
- PDU Power Summary
  - – KE8_PDU_Output_Load_High
  - – KE8_PDU_Output_Load_Critical
  - – KE8_PDU_Panel_Load_High
  - – KE8_PDU_Panel_Load_Critical
  - – KE8_PDU_Breaker_Load_High
  - – KE8_PDU_Breaker_Load_Critical

MTR Endpoints (MTR) subnode
- MTR Endpoints
  - – Not applicable
- Meter Alarms
  - – KE8_MTR_Critical_Alarm_Active
  - – KE8_MTR_Caution_Alarm_Active
- Meter Device Configuration
  - – Not applicable
- Meter Device Status
  - – Not applicable
- Power Measurements
  - – Not applicable
- Power Quality
  - – KE8_MTR_Caution_Power_Quality
  - – KE8_MTR_Alert_Power_Quality
  - – KE8_MTR_Unknown_Power_Quality

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

Run at startup
>Whether the situation is automatically distributed to instances of the agent or is available for manual distribution

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 1 means 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.

Eaton Power Xpert Navigator item

There are no predefined situations for this Navigator item.

Managed Systems Navigator item

There are no predefined situations for this Navigator item.

UPS Endpoints subnode

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

UPS Endpoints Navigator item

There are no predefined situations for this Navigator item.

UPS Alarms Navigator item

KE8_UPS_Critical_Alarm_Active situation

Description: A critical alarm is active on the device.

The situation will be evaluated for each distinct value of Description.

Formula: `*IF *VALUE KE8_UPS_ACTIVE_ALARMS.Level *EQ critical`

See "Attribute groups and attributes for the IBM Tivoli Monitoring for Energy
Management: Eaton Power Xpert Agent" on page 25 for descriptions of the
attributes in this formula.

Run at startup: This situation is automatically distributed to instances of this
agent.

Sampling interval: 2 minutes

Situation persistence: The number of times the conditions of the situation must
occur for the situation to be true is 1.

Severity: Critical

Clearing conditions: The situation clears when the condition becomes false.

KE8_UPS_Caution_Alarm_Active situation

Description: A caution alarm is active on the device.

The situation will be evaluated for each distinct value of Description.

Formula: `*IF *VALUE KE8_UPS_ACTIVE_ALARMS.Level *EQ cautionary`

See "Attribute groups and attributes for the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent" on page 25 for descriptions of the attributes in this formula.

Run at startup: This situation is automatically distributed to instances of this agent.

Sampling interval: 2 minutes

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.

UPS Battery Status Navigator item

KE8_UPS_Battery_Time_Low situation

Description: The battery time remaining is low.

The situation will be evaluated for the table.

Formula: `*IF *VALUE KE8_UPS_BATTERY.TimeRemaining *LT 600`

See "Attribute groups and attributes for the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent" on page 25 for descriptions of the attributes in this formula.

Run at startup: This situation is automatically distributed to instances of this agent.

Sampling interval: 2 minutes

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.

KE8_UPS_Battery_Time_Critical situation

Description: The battery time remaining is critically low.

The situation will be evaluated for the table.

Formula: `*IF *VALUE KE8_UPS_BATTERY.TimeRemaining *LT 300`

See "Attribute groups and attributes for the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent" on page 25 for descriptions of the attributes in this formula.

Run at startup: This situation is automatically distributed to instances of this agent.

Sampling interval: 1 minute

Situation persistence: The number of times the conditions of the situation must occur for the situation to be true is 1.

Severity: Critical

Clearing conditions: The situation clears when the condition becomes false.

UPS Device Configuration Navigator item

KE8_UPS_Receptacle_Failed situation

Description: The receptacle failed

The situation will be evaluated for each distinct value of the UPSRIDX attribute.

Formula: `*IF ( ( *VALUE KE8_UPS_RECEPTACLE_TABLE.Status *EQ failed_closed ) *OR ( *VALUE KE8_UPS_RECEPTACLE_TABLE.Status *EQ failed_open ) )`

See "Attribute groups and attributes for the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent" on page 25 for descriptions of the attributes in this formula.

Run at startup: This situation is automatically distributed to instances of this agent.

Sampling interval: 15 minutes

Situation persistence: The number of times the conditions of the situation must occur for the situation to be true is 1.

Severity: Critical

Clearing conditions: The situation clears when the condition becomes false.

UPS Device Status Navigator item

There are no predefined situations for this Navigator item.

UPS Environmental Summary Navigator item

KE8_UPS_Ambient_Temp_High situation

Description: The ambient temperature is above the limit.

The situation will be evaluated for each distinct value of the UPSCONTACT attribute.

Formula: `*IF *VALUE KE8_UPS_ENVIRONMENT.AmbientTemp *GT 28`

See "Attribute groups and attributes for the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent" on page 25 for descriptions of the attributes in this formula.

Run at startup: This situation is automatically distributed to instances of this agent.

Sampling interval: 5 minutes

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.

KE8_UPS_Remote_Temp_High situation

Description: The remote sensor temperature is above the limit.

The situation will be evaluated for each distinct value of the UPSCONTACT attribute.

Formula: *IF *VALUE KE8_UPS_ENVIRONMENT.RemoteTemp *GT 28

See "Attribute groups and attributes for the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent" on page 25 for descriptions of the attributes in this formula.

Run at startup: This situation is automatically distributed to instances of this agent.

Sampling interval: 5 minutes

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.

KE8_UPS_Remote_Humidity_High situation

Description: The remote sensor humidity is above the limit.

The situation will be evaluated for each distinct value of the UPSCONTACT attribute.

Formula: *IF *VALUE KE8_UPS_ENVIRONMENT.RemoteHumidity *GT 60

See "Attribute groups and attributes for the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent" on page 25 for descriptions of the attributes in this formula.

Run at startup: This situation is available for distribution.

Sampling interval: 5 minutes

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.

KE8_UPS_Remote_Humidity_Low situation

Description: The remote sensor humidity is below the limit.

The situation will be evaluated for each distinct value of the UPSCONTACT attribute.

Formula: `*IF *VALUE KE8_UPS_ENVIRONMENT.RemoteHumidity *LT 40`

See "Attribute groups and attributes for the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent" on page 25 for descriptions of the attributes in this formula.

Run at startup: This situation is available for distribution.

Sampling interval: 5 minutes

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.

UPS Power Summary Navigator item

KE8_UPS_Dual_Input_Status_Bad situation

Description: Both input sources on the device are bad.

The situation will be evaluated for each distinct value of the UPSIPHASE attribute.

Formula: `*IF *VALUE KE8_UPS_INPUT.Dual_Input_Status *EQ both_sources_bad`

See "Attribute groups and attributes for the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent" on page 25 for descriptions of the attributes in this formula.

Run at startup: This situation is automatically distributed to instances of this agent.

Sampling interval: 10 minutes

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.

KE8_UPS_On_Battery situation

Description: The device is on battery.

The situation will be evaluated for each distinct value of the UPSOPHASE attribute.

Formula: `*IF *VALUE KE8_UPS_OUTPUT.Output_Source *EQ battery`

See "Attribute groups and attributes for the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent" on page 25 for descriptions of the attributes in this formula.

Run at startup: This situation is automatically distributed to instances of this agent.

Sampling interval: 1 minute

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.

KE8_UPS_On_Bypass situation

Description: The device is on bypass.

The situation will be evaluated for each distinct value of the UPSOPHASE attribute.

Formula: `*IF *VALUE KE8_UPS_OUTPUT.Output_Source *EQ bypass`

See "Attribute groups and attributes for the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent" on page 25 for descriptions of the attributes in this formula.

Run at startup: This situation is automatically distributed to instances of this agent.

Sampling interval: 3 minutes

Situation persistence: The number of times the conditions of the situation must occur for the situation to be true is 1.

Severity: Warning

Clearing conditions: The situation clears when the condition becomes false.

KE8_UPS_Off_Battery situation

Description: The device is off battery.

The situation will be evaluated for each distinct value of the UPSOPHASE attribute.

Formula: `*IF *VALUE KE8_UPS_OUTPUT.Output_Source *NE battery *UNTIL ( *TTL 0:00:10:00 )`

See "Attribute groups and attributes for the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent" on page 25 for descriptions of the attributes in this formula.

Run at startup: This situation is automatically distributed to instances of this agent.

Sampling interval: 3 minutes

Situation persistence: The number of times the conditions of the situation must occur for the situation to be true is 1.

Severity: Informational

Clearing conditions: The situation clears when the condition becomes false.

KE8_UPS_High_Efficiency_Mode situation

Description: The device is in high efficiency mode.

The situation will be evaluated for each distinct value of the UPSOPHASE attribute.

Formula: `*IF *VALUE KE8_UPS_OUTPUT.Output_Source *EQ high_efficiency_mode`

See "Attribute groups and attributes for the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent" on page 25 for descriptions of the attributes in this formula.

Run at startup: This situation is automatically distributed to instances of this agent.

Sampling interval: 15 minutes

Situation persistence: The number of times the conditions of the situation must occur for the situation to be true is 1.

Severity: Informational

Clearing conditions: The situation clears when the condition becomes false.

PDU Endpoints subnode

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

PDU Endpoints Navigator item

There are no predefined situations for this Navigator item.

PDU Alarms Navigator item

KE8_PDU_Critical_Alarm_Active situation

Description: A critical alarm is active on the device.

The situation will be evaluated for each distinct value of Description.

Formula: `*IF *VALUE KE8_PDU_ACTIVE_ALARMS.Level *EQ critical`

See "Attribute groups and attributes for the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent" on page 25 for descriptions of the attributes in this formula.

Run at startup: This situation is automatically distributed to instances of this agent.

Sampling interval: 2 minutes

Situation persistence: The number of times the conditions of the situation must occur for the situation to be true is 1.

Severity: Critical

Clearing conditions: The situation clears when the condition becomes false.

KE8_PDU_Caution_Alarm_Active situation

Description: A caution alarm is active on the device.

The situation will be evaluated for each distinct value of Description.

Formula: `*IF *VALUE KE8_PDU_ACTIVE_ALARMS.Level *EQ cautionary`

See "Attribute groups and attributes for the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent" on page 25 for descriptions of the attributes in this formula.

Run at startup: This situation is automatically distributed to instances of this agent.

Sampling interval: 2 minutes

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.

PDU Device Configuration Navigator item

There are no predefined situations for this Navigator item.

PDU Device Status Navigator item

There are no predefined situations for this Navigator item.

PDU Environmental Summary Navigator item

KE8_PDU_Remote_Temp_High situation

Description: The remote sensor temperature is above the limit.

The situation will be evaluated for each distinct value of the PDUCONTACT attribute.

Formula: `*IF *VALUE KE8_PDU_ENVIRONMENT.RemoteTemp *GT 28`

See "Attribute groups and attributes for the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent" on page 25 for descriptions of the attributes in this formula.

Run at startup: This situation is automatically distributed to instances of this agent.

Sampling interval: 5 minutes

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.

KE8_PDU_Remote_Humidity_High situation

Description: The remote sensor humidity is above the limit.

The situation will be evaluated for each distinct value of the PDUCONTACT attribute.

Formula: `*IF *VALUE KE8_PDU_ENVIRONMENT.RemoteHumidity *GT 60`

See "Attribute groups and attributes for the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent" on page 25 for descriptions of the attributes in this formula.

Run at startup: This situation is available for distribution.

Sampling interval: 5 minutes

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.

KE8_PDU_Remote_Humidity_Low situation

Description: The remote sensor humidity is below the limit.

The situation will be evaluated for each distinct value of the PDUCONTACT attribute.

Formula: `*IF *VALUE KE8_PDU_ENVIRONMENT.RemoteHumidity *LT 40`

See "Attribute groups and attributes for the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent" on page 25 for descriptions of the attributes in this formula.

Run at startup: This situation is available for distribution.

Sampling interval: 5 minutes

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.

PDU Metering Data Navigator item

There are no predefined situations for this Navigator item.

PDU Power Summary Navigator item

KE8_PDU_Output_Load_High situation

Description: The output load on the PDU is high.

The situation will be evaluated for each distinct value of the PDUOPHINDX attribute.

Formula: `*IF *VALUE KE8_PDU_OUTPUT_TABLE.outputPercentLoad *GT 70`

See "Attribute groups and attributes for the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent" on page 25 for descriptions of the attributes in this formula.

Run at startup: This situation is automatically distributed to instances of this agent.

Sampling interval: 15 minutes

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.

KE8_PDU_Output_Load_Critical situation

Description: The output load on the PDU is critically high.

The situation will be evaluated for each distinct value of the PDUOPHINDX attribute.

Formula: `*IF *VALUE KE8_PDU_OUTPUT_TABLE.outputPercentLoad *GT 90`

See "Attribute groups and attributes for the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent" on page 25 for descriptions of the attributes in this formula.

Run at startup: This situation is automatically distributed to instances of this agent.

Sampling interval: 15 minutes

Situation persistence: The number of times the conditions of the situation must occur for the situation to be true is 1.

Severity: Critical

Clearing conditions: The situation clears when the condition becomes false.

KE8_PDU_Panel_Load_High situation

Description: The load on the panel is high.

The situation will be evaluated for each distinct value of the PNLNUM attribute.

Formula: `*IF *VALUE KE8_PDU_PANEL_PHASE_METERS_TABLE.PercentLoad *GT 70`

See "Attribute groups and attributes for the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent" on page 25 for descriptions of the attributes in this formula.

Run at startup: This situation is automatically distributed to instances of this agent.

Sampling interval: 15 minutes

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.

KE8_PDU_Panel_Load_Critical situation

Description: The load on the panel is critically high.

The situation will be evaluated for each distinct value of the PNLNUM attribute.

Formula: `*IF *VALUE KE8_PDU_PANEL_PHASE_METERS_TABLE.PercentLoad *GT 90`

See "Attribute groups and attributes for the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent" on page 25 for descriptions of the attributes in this formula.

Run at startup: This situation is automatically distributed to instances of this agent.

Sampling interval: 15 minutes

Situation persistence: The number of times the conditions of the situation must occur for the situation to be true is 1.

Severity: Critical

Clearing conditions: The situation clears when the condition becomes false.

KE8_PDU_Breaker_Load_High situation

Description: The load on the breaker is high.

The situation will be evaluated for each distinct value of the PNLNUM attribute.

Formula: `*IF *VALUE KE8_PDU_BREAKER_PHASE_METERS_TABLE.PercentLoad *GT 70`

See "Attribute groups and attributes for the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent" on page 25 for descriptions of the attributes in this formula.

Run at startup: This situation is automatically distributed to instances of this agent.

Sampling interval: 15 minutes

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.

KE8_PDU_Breaker_Load_Critical situation

Description: The load on the breaker is critically high.

The situation will be evaluated for each distinct value of the PNLNUM attribute.

Formula: `*IF *VALUE KE8_PDU_BREAKER_PHASE_METERS_TABLE.PercentLoad *GT 90`

See "Attribute groups and attributes for the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent" on page 25 for descriptions of the attributes in this formula.

Run at startup: This situation is automatically distributed to instances of this agent.

Sampling interval: 15 minutes

Situation persistence: The number of times the conditions of the situation must occur for the situation to be true is 1.

Severity: Critical

Clearing conditions: The situation clears when the condition becomes false.

MTR Endpoints subnode

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

MTR Endpoints Navigator item

There are no predefined situations for this Navigator item.

Meter Alarms Navigator item

KE8_MTR_Critical_Alarm_Active situation

Description: A critical alarm is active on the device.

The situation will be evaluated for each distinct value of Description.

Formula: `*IF *VALUE KE8_METER_ACTIVE_ALARMS.Level *EQ critical`

See "Attribute groups and attributes for the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent" on page 25 for descriptions of the attributes in this formula.

Run at startup: This situation is automatically distributed to instances of this agent.

Sampling interval: 2 minutes

Situation persistence: The number of times the conditions of the situation must occur for the situation to be true is 1.

Severity: Critical

Clearing conditions: The situation clears when the condition becomes false.

KE8_MTR_Caution_Alarm_Active situation

Description: A caution alarm is active on the device.

The situation will be evaluated for each distinct value of Description.

Formula: `*IF *VALUE KE8_METER_ACTIVE_ALARMS.Level *EQ cautionary`

See "Attribute groups and attributes for the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent" on page 25 for descriptions of the attributes in this formula.

Run at startup: This situation is automatically distributed to instances of this agent.

Sampling interval: 2 minutes

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.

Meter Device Configuration Navigator item

There are no predefined situations for this Navigator item.

Meter Device Status Navigator item

There are no predefined situations for this Navigator item.

Power Measurements Navigator item

There are no predefined situations for this Navigator item.

Power Quality Navigator item

KE8_MTR_Caution_Power_Quality situation

Description: The power quality has reached a cautionary level.

The situation will be evaluated for each distinct value of Description.

Formula: `*IF *VALUE KE8_METER_POWER_QUALITY_MEASURES.PresentQualityRaw *EQ caution`

See "Attribute groups and attributes for the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent" on page 25 for descriptions of the attributes in this formula.

Run at startup: This situation is automatically distributed to instances of this agent.

Sampling interval: 2 minutes

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.

KE8_MTR_Alert_Power_Quality situation

Description: The power quality has reached an alert level.

The situation will be evaluated for each distinct value of Description.

Formula: `*IF *VALUE KE8_METER_POWER_QUALITY_MEASURES.PresentQualityRaw *EQ alert`

See "Attribute groups and attributes for the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent" on page 25 for descriptions of the attributes in this formula.

Run at startup: This situation is automatically distributed to instances of this agent.

Sampling interval: 2 minutes

Situation persistence: The number of times the conditions of the situation must occur for the situation to be true is 1.

Severity: Critical

Clearing conditions: The situation clears when the condition becomes false.

KE8_MTR_Unknown_Power_Quality situation

Description: The power quality is unknown.

The situation will be evaluated for each distinct value of Description.

Formula: `*IF *VALUE KE8_METER_POWER_QUALITY_MEASURES.PresentQualityRaw *EQ unknown`

See "Attribute groups and attributes for the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent" on page 25 for descriptions of the attributes in this formula.

Run at startup: This situation is automatically distributed to instances of this agent.

Sampling interval: 2 minutes

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.

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, Tivoli Enterprise Portal receives return code feedback, and advanced automation logic responds with subsequent activities prescribed by the feedback.

A basic Take Action command displays the return code of the operation in a message box that is displayed after the action completes 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 *IBM Tivoli Monitoring User's Guide*.

Predefined Take Action commands

The IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert 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, 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 *IBM Tivoli Monitoring 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 IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent does not provide predefined policies.

Chapter 8. Troubleshooting

This chapter provides agent-specific troubleshooting information. See the *IBM Tivoli Monitoring Troubleshooting Guide* for general troubleshooting information. Also see "Support for problem solving" on page 251 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 3.

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 238 for lists of all trace log files and their locations. See the *IBM Tivoli Monitoring User's Guide* for general information about the IBM Tivoli Monitoring environment.
Eaton Power Xpert Devices information	• Version number and patch level
Operating system	Operating system version number and patch level
Messages	Messages and other information displayed on the screen
Version numbers for IBM Tivoli Monitoring	Version number of the following members of the monitoring environment: • IBM Tivoli Monitoring. Also provide the patch level, if available. • IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert 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 *install_dir*/bin directory, where *install_dir* is the directory where you installed the monitoring agent.

Upload files for review to the following FTP site: ftp.emea.ibm.com. Log in as **anonymous** and place your files in the directory that corresponds to the IBM Tivoli Monitoring component that you use. See "Contacting IBM Software Support" on page 253 for more information about working with IBM Software Support.

Built-in troubleshooting features

The primary troubleshooting feature in the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent is logging. *Logging* refers to the text messages and trace data generated by the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert 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" on page 238 for more information.

Problem classification

The following types of problems might occur with the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert 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, as well as describing 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 intended. The principal log type is the RAS (Reliability, Availability, and Serviceability) trace log. These logs are in the English language only. The RAS trace log mechanism is available for all components of IBM Tivoli Monitoring. Most logs are 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 239
- "Examples: using trace logs" on page 240
- "Setting RAS trace parameters" on page 241

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

Windows systems
> *hostname_productcode_program_HEXtimestamp-nn*.log

Linux and UNIX systems
> *hostname_productcode_HEXtimestamp-nn*.log

where:

- *hostname* is the host name of the computer where the monitoring component is running.
- *productcode* is the two-character product code. For IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent, the product code is e8.
- *program* is the name of the program being run.
- *HEXtimestamp* is a hexadecimal time stamp representing the time at which the program started.

- *nn* is a 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	• **Windows:** The file in the *install_dir*\InstallITM path • **UNIX:** The candle_installation.log file in the *install_dir*/logs path	Provides details about products that are installed. **Note:** Trace logging is enabled by default. A configuration step is not required to enable this tracing.
	The `Warehouse_Configuration.log` file is in the following location on Windows systems: *install_dir*\InstallITM	Provides details about the configuration of data warehousing for historical reporting.
	The name of the RAS log file is as follows: • **Windows:** *install_dir*\logs\ *hostname*_ms_*timestamp-nn*.log • **UNIX:** *install_dir*/logs/ hostname_productcode_timestamp.log **Note:** File names for RAS1 logs include a hexadecimal time stamp. Also on UNIX, a log with a decimal time stamp is provided: *hostname_productcode_timestamp*.log and *hostname_productcode_ timestamp*.pid*nnnnn* in the *install_dir*/logs path, where nnnnn is the process ID number.	Traces activity on the monitoring server.
On the Tivoli Enterprise Portal Server	The name of the RAS log file is as follows: • **Windows:** *install_dir*\logs\ hostname_cq_HEXtimestamp-nn.log • **UNIX®:** *install_dir*/logs/ *hostname*_cq_HEXtimestamp-nn.log **Note:** File names for RAS1 logs include a hexadecimal time stamp. Also on UNIX, a log with a decimal time stamp is provided: *hostname_productcode_timestamp*.log and *hostname_productcode_ timestamp*.pid*nnnnn* in the *install_dir*/logs path, where nnnnn is the process ID number.	Traces activity on the portal server.
	The `teps_odbc.log` file is located in the following path • **Windows**: *install_dir*\InstallITM path. • **UNIX**: *install_dir*/logs	When you enable historical reporting, this log file traces the status of the warehouse proxy agent.

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

System where log is located	File name and path	Description
On the computer that hosts the monitoring agent	The RAS1 log files are as follows: • **Windows:** hostname_e8_ke8agent _HEXtimestamp-nn.log in the *install_dir*\tmaitm6\logs directory • **UNIX:** hostname_e8_HEXtimestamp-nn.log in the *install_dir*/logs directory These logs are in the following directories: • **Windows:** *install_dir*\tmaitm6\logs • **UNIX:** *install_dir*/logs	Traces activity of the monitoring agent.
	The agent operations log files are as follows: *instance_hostname*_E8.LG0 is the current log created when the agent was started *instance_hostname*_E8.LG1 is the backup of the previous log These logs are in the following directory depending on the operating system that you are using: • **Windows:** *install_dir*\tmaitm6\logs • **UNIX:** *install_dir*/logs	Shows whether the agent was able to connect to the monitoring server. Shows which situations are started and stopped, and shows other events while the agent is running. A new version of this file is generated every time the agent is restarted. IBM Tivoli Monitoring generates one backup copy of the *.LG0 file with the tag .LG1. View .LG1 to learn the following details regarding the *previous* monitoring session: • Status of connectivity with the monitoring server. • Situations that were running. • The success or failure status of Take Action commands.
	The Take Action command log files are as follows: • *host*_e8_*takeactioncommand*.log The logs are in the following directories: • **Windows:** *install_dir*\tmaitm6\logs • **UNIX:** *install_dir*/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 start_command.log file.

Definitions of variables:

timestamp is time stamp whose format includes year (y), month (m), day (d), hour (h), and minute (m), as follows: **yyyymmdd hhmm**

HEXtimestamp is a hexadecimal representation of the time at which the process was started.

install_dir represents the directory path where you installed the IBM Tivoli Monitoring component. *install_dir* can represent a path on the computer that host the monitoring system, the monitoring agent, or the portal.

instance refers to the name of the database instance that you are monitoring.

hostname refers to the name of the computer on which the IBM Tivoli Monitoring component runs.

nn represents the circular sequence in which logs are rotated. Ranges from 1-5, by default, though the first is always retained, because it includes configuration parameters.

productcode specifies the product codes, for example, um for Universal Agent or nt for Windows.

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

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

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

```
(42C039F9.0000-6A4:kpxreqhb.cpp,649,"HeartbeatInserter") Remote node SERVER5B:E8 is ON-LINE.
. . .
(42C3079B.0000-6A4:kpxreqhb.cpp,644,"HeartbeatInserter") Remote node SERVER5B:E8 is OFF-LINE.
```

>Key points regarding the preceding excerpt:
>- The monitoring server appends the **E8** product code to the server name to form a unique name (SERVER5B:E8) for this instance of the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent. This unique name enables you to 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" provide these entries.

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

1. In the Windows **Start** menu, choose **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 select **Advanced > View Trace Log** in the pop-up menu. For example, if you want to view the trace log of the Eaton Power Xpert Devices agent, right-click the name of the 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 IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent uses RAS1 tracing and generates the logs described in Table 3 on page 239. The default RAS1 trace level is ERROR.

Before you begin

See "Overview of log file management" on page 238 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 to 60 MB for each agent that is running on a computer. For example, each database instance that you monitor can generate 45 to 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 239 that include a process ID number (PID).

Consider using 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 them only temporarily, while you are troubleshooting problems. Otherwise, the logs can occupy excessive amounts of hard disk space.

Procedure

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

1. Open the Manage Tivoli Enterprise Monitoring Services window.
2. Right-click the icon of the monitoring agent whose logging you want to modify.
3. Select **Advanced** > **Edit Trace Parms**. The Tivoli Enterprise Monitoring Server Trace Parameters window is displayed.
4. Select a new trace setting in the pull-down menu in the **Enter RAS1 Filters** field or type a valid string.

   The selections are as follows:
   - General error tracing. `KBB_RAS1=ERROR`
   - Intensive error tracing. `KBB_RAS1=ERROR (UNIT:kqz ALL)`
   - Maximum error tracing. `KBB_RAS1=ERROR (UNIT:kqz ALL) (UNIT:kra ALL)`

      Notes: As this example shows, you can set multiple RAS tracing options in a single statement.
5. Modify the value for 'Maximum Log Size Per File (MB)" to change the log file size (changes LIMIT value).
6. Modify the value for 'Maximum Number of Log Files Per Session" to change the number of log files per startup of a program (changes COUNT value).
7. Modify the value for 'Maximum Number of Log Files Total" to change the number of log files for all startups of a program (changes MAXFILES value).

8. (*Optional*) Click Y (Yes) in the **KDC_DEBUG Setting** menu to log information that can help you diagnose communications and connectivity problems between the monitoring agent and the monitoring server.

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

9. Click **OK**. You see a message reporting a restart of the monitoring agent so that your changes take effect.

You can also manually edit the RAS1 trace logging parameters using this method:

1. Open the trace options file:

   Windows: *install_dir*\tmaitm6\KE8ENV

   UNIX: *install_dir*/config/e8.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. Default value is 9.
   - LIMIT: the maximum size, in megabytes (MB) of a RAS1 log file. Default value is 5.
   - IBM Software Support might guide you to modify the following parameters:
     – COUNT: the number of log files to keep in the rolling cycle of one program startup. Default is 3.
     – PRESERVE: the number of files that are not to be reused in the rolling cycle of one program startup. Default value is 1.

   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 IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent:

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 3.

This 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
A problem can arise when you install and configure a new monitoring agent to a computer where other agents are running as described in this example: • Agents are running on computer and communicating with a Tivoli Enterprise Monitoring Server, called **TEMS1**. • You install a new agent on the same computer and you want this agent to communicate with a different monitoring server, called **TEMS2**. • When you configure the new agent to communicate with **TEMS2**, all the existing agents are re-configured to communicate with **TEMS2**.	You must reconfigure the previously existing agents to restore their communication connection with **TEMS1**. For example, you can right-click the row for a specific agent in the Manage Tivoli Enterprise Monitoring Services, and select **Reconfigure**. See the *IBM Tivoli Monitoring Installation and Setup Guide* for more information on reconfiguration.
Diagnosing problems with product browse settings (Windows systems only).	When you have problems with browse settings, perform the following steps: 1. Click **Start > Programs > IBM Tivoli Monitoring > Manage Tivoli Enterprise Monitoring Services**. The Manage Tivoli Enterprise Monitoring Services window is displayed. 2. Right-click the Windows agent and select **Browse Settings**. A text window is displayed. 3. Click **Save As** and save the information in the text file. If requested, you can forward this file to IBM Software Support for analysis.
A message similar to "Unable to find running CMS on CT_CMSLIST" in the log file is displayed.	If a message similar to "Unable to find running CMS on CT_CMSLIST" is displayed in the Log file, the agent is not able to connect to the monitoring server. Confirm the following points: • Do multiple network interface cards (NICs) exist on the system? • If multiple NICs exist on the system, find out which one is configured for the monitoring server. Ensure that you specify the correct host name and port settings for communication in the IBM Tivoli Monitoring environment.

Problem	Solution
The system is experiencing high CPU usage.	**Agent process:** View the memory usage of the KE8CMA process. If CPU usage seems to be excessive, recycle the monitoring agent. **Network Cards:** The network card configurations can decrease the performance of a system. Each of the stream of packets that a network card receives (assuming it is a broadcast or destined for the under-performing system) must generate a CPU interrupt and transfer the data through the I/O bus. If the network card in question is a bus-mastering card, work can be off-loaded and a data transfer between memory and the network card can continue without using CPU processing power. Bus-mastering cards are generally 32-bit and are based on PCI or EISA bus architectures.

Table 5. General problems and solutions for uninstallation

Problem	Solution

On Windows, uninstallation of IBM Tivoli Monitoring fails to uninstall the entire environment.	Be sure that you follow the general uninstallation process described in the *IBM Tivoli Monitoring Installation and Setup Guide*:
	1. Remove Tivoli Enterprise Monitoring Server Application support by completing the following steps:
	  a. Use Manage Tivoli Enterprise Monitoring Services.
	  b. Select **Tivoli Enterprise Monitoring Server**.
	  c. Right-click and select **Advanced**.
	  d. Select **Remove TEMS application support**.
	  e. Select the agent to remove its application support.
	2. Uninstall monitoring agents first, as in the following examples:
	  • Uninstall a single monitoring agent for a specific database.
	    -OR-
	  • Uninstall all instances of a monitoring product, such as IBM Tivoli Monitoring for Databases.
	3. Uninstall IBM Tivoli Monitoring.

The way to remove inactive managed systems (systems whose status is OFFLINE) from the Navigator tree in the portal is not obvious.	Use the following steps to remove, but not uninstall, an offline managed system from the Navigator tree: 1. Click the Enterprise icon in the Navigator tree. 2. Right-click, then click **Workspace** > **Managed System Status**. 3. Right-click the offline managed system, and select **Clear offline entry**. If you also want to uninstall the monitoring agent, use the procedure described in the *IBM Tivoli Monitoring Installation and Setup Guide*.

Remote deployment troubleshooting

Table 6 on page 246 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.

Table 6. Remote deployment problems and solutions

Problem	Solution
While you are using the remote deployment feature to install the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert 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 *IBM Tivoli Monitoring Installation and Setup Guide* for more information on 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 241. The trace options settings that you can set on the `KBB_RAS1=` and `KDC_DEBUG=` lines potentially generate large amounts of data.
When using the F1 key or selecting Help --> Contents and Index, you receive a message in your Microsoft Internet Explorer browser which states, "It seems javascript is disabled in your browser, please enable it and reload again, or click here to view without javascript." If you select 'here', the Tivoli Enterprise Portal V6.1 Help is displayed, but the agent help is not.	Ensure that the local site is added to the trusted site for the browser, and then enable the javascript.
If you want to receive multiple trace logs for separate invocations of the same Take Action command, leaving this setting on permanently fills the available disk space.	Do not leave this setting on permanently. By doing so, you create a new log file for each invocation of the Take Action command and ALL of them are left on the agent system.
When using the itmcmd agent commands to start or stop this monitoring agent, you receive the following error message: `KCIIN0201E Specified product is not configured.`	Include the command option **-o** to specify the instance to start or stop. The instance name must match the name used for configuring the agent. For example: **./itmcmd agent -o SNMP start** For information about using the itmcmd commands, see the *IBM Tivoli Monitoring Command Reference*.

Workspace troubleshooting

Table 8 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.	This problem occurs because the **PerfProc** performance object is disabled. When this condition exists, IBM Tivoli Monitoring cannot collect performance data for this process. Do the following to confirm that this problem exists and resolve it:
	
	1. Choose **Run** in the Windows **Start** menu.
	2. Type perfmon.exe in the **Open** field of the Run window. The Performance window is displayed.
	3. Click the plus sign (+) in the tool bar located above the right pane. The Add Counters window is displayed.
	4. Look for **Process** in the **Performance object** pull-down menu.
	5. Perform one of the following actions:
	   • If you see **Process** in the pull-down 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 pull-down menu, use the Microsoft utility from the following Web site to enable the **PerfProc** performance object:
	   `http://www.microsoft.com/windows2000/techinfo /reskit/tools/existing /exctrlst-o.asp`
	
	   The **Process** performance object becomes visible in the **Performance object** pull-down 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.	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.
You start collection of historical data but the data cannot be seen.	Managing options for historical data collection: • Basic historical data collection populates the Warehouse with raw data. This type of data collection is turned off by default. See the *IBM Tivoli Monitoring Administrator's Guide* for information on managing this feature including how to set the interval at which data is collected. By setting a more frequent interval for data collection you reduce the load on the system incurred every time data is uploaded. • You use the Summarization and Pruning monitoring agent to collect specific amounts and types of historical data. Be aware that historical data is not displayed until the Summarization and Pruning monitoring agent begins collecting the data. By default, this agent begins collection at 2 AM daily. At that point, data is visible in the workspace view. See the *IBM Tivoli Monitoring Administrator's Guide* to learn how to modify the default collection settings.

Table 8. Workspace problems and solutions (continued)

Problem	Solution
Historical data collection is unavailable because of incorrect queries in the Tivoli Enterprise Portal.	The column, Sort By, Group By, and First/Last functions are not compatible with the historical data collection feature. Use of these advanced functions makes a query ineligible for historical data collection. Even if data collection has been started, you cannot use the time span feature if the query for the chart or table includes column functions or advanced query options (Sort By, Group By, First / Last). To ensure support of historical data collection, do not use the Sort By, Group By, or First/Last functions in your queries. See the *IBM Tivoli Monitoring Administrator's Guide* or the Tivoli Enterprise Portal online help for information about the Historical Data Collection function.
When you use a long process name in the situation, the process name is truncated.	Truncation of process or service names for situations in the Availability table in the portal display is the expected behavior. 100 bytes is the maximum name length.
Regular (non-historical) monitoring data fails to be displayed.	Check the formation of the queries you use to gather data. For example, look for invalid SQL statements.
No row of data for 64-bit applications is displayed in the workspaces when the monitoring agent is running on a 64-bit operating system.	The Tivoli Enterprise Portal shows data only for 32-bit applications. There is no solution for this problem at this time.
Navigator items and workspace titles are labeled with internal names such as `Kr6:KR60000` or `Knt:KNT0000` rather than the correct names (such as Disk).	Ensure application support has been added on the monitoring server, portal server, and portal client. For more information and instruction on installing application support see "Installing and enabling application support" in the *IBM Tivoli Monitoring Installation and Setup Guide*.

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 241. 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 210 describes the performance impact of specific attribute groups. If possible, decrease your use of the attribute groups that require greater system resources.

Table 9. General situation problems and solutions (continued)

Problem	Solution
A formula that uses mathematical operators appears to be incorrect. For example, if you were monitoring Linux, a formula that calculates when **Free Memory** falls under 10 percent of **Total Memory** does not work: LT #'Linux_VM_Stats.Total_Memory' / 10	This formula is incorrect because situation predicates support only logical operators. Your formulas cannot have mathematical operators. **Note:** The Situation Editor provides alternatives to math operators. Regarding the example, you can select **% Memory Free** attribute and avoid the need for math operators.
You want to change the appearance of situations when they are displayed in the Navigation tree.	1. Right-click an item in the Navigation tree. 2. Select **Situations** in the pop-up menu. The Situation Editor window is displayed. 3. Select the situation that you want to modify. 4. Use the **State** pull-down 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.	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.

Problems with configuration of situations

Table 10 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
Note: To get started with the solutions in this section, perform these steps: 1. Launch the Tivoli Enterprise Portal. 2. Click **Edit > Situation Editor**. 3. In the tree view, 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 absent, confirm that the monitoring server has been seeded for the agent. If not, seed the server, as described in the *IBM Tivoli Monitoring Installation and Setup Guide.*
The monitoring interval is too long.	Access the Situation Editor view for the situation that you want to modify. Check the **Sampling interval** area in the **Formula** tab. Adjust the time interval as needed.

Table 10. Problems with configuring situations that you solve in the Situation Editor (continued)

Problem	Solution
The situation did not activate at startup.	Manually recycle the situation as follows: 1. Right-click the situation and choose **Stop Situation**. 2. Right-click the situation and choose **Start Situation**. **Note:** You can permanently avoid this problem by placing a check mark in the **Run at Startup** option of the Situation Editor view for a specific situation.
The situation is not 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 has not occurred even though the predicate has been properly specified.	Check the logs, reports, and workspaces.
A situation fires on an unexpected managed object.	Confirm that you have 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.
The situation does not fire.	This problem can be caused when incorrect predicates are present in the formula that defines the situation. For example, the managed object shows a state that normally triggers a monitoring event, but the situation is not true because the wrong attribute is specified in the formula. In the **Formula** tab, analyze predicates as follows: 1. Click the *fx* icon in the upper-right corner of the Formula area. The Show formula window is displayed. a. Confirm the following details in the **Formula** area at the top of the window: • The attributes that you intend to monitor are specified in the formula. • The situations that you intend to monitor are specified in the formula. • The logical operators in the formula match your monitoring goal. • The numerical values in the formula match your monitoring goal. b. (*Optional*) Click the **Show detailed formula** check box in the lower left of the window to see the original names of attributes in the application or operating system that you are monitoring. c. Click **OK** to dismiss the Show formula window. 2. (*Optional*) In the Formula area of the **Formula** tab, temporarily assign numerical values that immediately trigger a monitoring event. The triggering of the event confirms that other predicates in the formula are valid. **Note:** After you complete this test, you must restore the numerical values to valid levels so that you do not generate excessive monitoring data based on your temporary settings. See the *IBM Tivoli Monitoring Troubleshooting Guide* for additional information about situations that do not fire.

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.	Associate the situation with a workspace. **Note:** The situation does not need to be displayed in the workspace. It is sufficient that the situation be associated with any workspace.

Table 11. Problems with configuration of situations that you solve in the Workspace area (continued)

Problem	Solution
You do not have access to a situation.	**Note:** You must have administrator privileges to perform these steps. 1. Select **Edit** > **Administer Users** to access the Administer Users window. 2. In the **Users** area, select the user whose privileges you want to modify. 3. In the **Permissions** tab, **Applications** tab, and **Navigator Views** tab, select the permissions or privileges that correspond to the user role. 4. Click **OK**.
A managed system seems to be offline.	1. Select Physical View and highlight the Enterprise Level of the navigator tree. 2. Select **View** > **Workspace** > **Managed System Status** to see a list of managed systems and their status. 3. If a system is offline, check network connectivity and the status of the specific system or application.

Take Action commands troubleshooting

Table 12 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 239. 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 pop-up 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 248. If the Take Action command fails, see *IBM Tivoli Monitoring Troubleshooting Guide* for general information on troubleshooting Take Action commands.

Support for problem solving

If you have a problem with your IBM software, you want to resolve it quickly. This section describes the following options for obtaining support for IBM software products:

- "Using IBM Support Assistant"
- "Obtaining fixes" on page 252
- "Receiving weekly support updates" on page 252
- "Contacting IBM Software Support" on page 253

Using IBM Support Assistant

The IBM Support Assistant is a free, stand-alone application that you can install on most workstations and also use to perform remote troubleshooting of other workstations. You can enhance the application by installing product-specific add-ons for the IBM products you use.

The IBM Support Assistant saves you the time it takes to search product, support, and educational resources. Several troubleshooting features are provided, including the ability to perform guided troubleshooting to aid in problem resolution and the ability to collect diagnostic information. The collected diagnostic information can then be used to self-diagnose the problem, or it can be included in an *Electronic Service Request* (ESR) submitted to IBM Support engineers. The ESR tool is used to open, update, and report on PMRs (Problem Management Records) online. See http://www.ibm.com/software/support/help.html for assistance in using the ESR tool.

For more information, and to download the IBM Support Assistant, see http://www.ibm.com/software/support/isa. Currently, the add-on for this product requires IBM Support Assistant V4.0.1 or later. After you download and install the IBM Support Assistant, follow these steps to install the IBM Support Assistant add-on for the IBM Tivoli Monitoring product that you are using:

1. Start the IBM Support Assistant application.
2. From the **Update** menu, select **Find New** and **Product Add-ons**.
3. Under **Tivoli**, select your product, read the description, and then click **Next**.

   If your product is not included in the list under **Tivoli**, no add-on is available yet for the product.
4. Read the license and description, and if you comply, select **I accept the terms in the license agreements** and click **Next**.
5. Click **Finish** to proceed with the installation, and when prompted, restart the IBM Support Assistant to complete the installation.

Obtaining fixes

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

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

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

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

For more information about the types of fixes that are available, see the *IBM Software Support Handbook* at http://techsupport.services.ibm.com/guides/handbook.html.

Receiving weekly support updates

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

1. Go to the IBM Software Support Web site at http://www.ibm.com/software/support.
2. Click **My support** in the far upper-right corner of the page under **Personalized support**.

3. If you have already registered for **My support**, sign in and skip to the next step. If you have not registered, click **register now**. Complete the registration form using your e-mail address as your IBM ID and click **Submit**.

4. The **Edit profile** tab is displayed.

5. In the first list under **Products**, select **Software**. In the second list, select a product category (for example, **Systems and Asset Management**). In the third list, select a product sub-category (for example, **Application Performance & Availability** or **Systems Performance**). A list of applicable products is displayed.

6. Select the products for which you want to receive updates.

7. Click **Add products**.

8. After selecting all products that are of interest to you, click **Subscribe to email** on the **Edit profile** tab.

9. In the **Documents** list, select **Software**.

10. Select **Please send these documents by weekly email**.

11. Update your e-mail address as needed.

12. Select the types of documents you want to receive.

13. Click **Update**.

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

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

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

Contacting IBM Software Support

IBM Software Support provides assistance with product defects. The easiest way to obtain that assistance is to open a PMR or ETR directly from the IBM Support Assistant (see "Using IBM Support Assistant" on page 251).

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

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

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

  By phone
  > For the phone number to call in your country, go to the IBM Software Support Web site at http://techsupport.services.ibm.com/guides/ contacts.html and click the name of your geographic region.

- For customers with Subscription and Support (S & S) contracts, go to the Software Service Request Web site at https://techsupport.services.ibm.com/ssr/ login.

- For customers with IBMLink™, CATIA, Linux, OS/390®, iSeries®, pSeries®, zSeries®, and other support agreements, go to the IBM Support Line Web site at http://www.ibm.com/services/us/index.wss/so/its/a1000030/dt006.
- For IBM eServer™ software products (including, but not limited to, DB2 and WebSphere products that run in zSeries, pSeries, and iSeries environments), you can purchase a software maintenance agreement by working directly with an IBM sales representative or an IBM Business Partner. For more information about support for eServer software products, go to the IBM Technical Support Advantage Web site at http://www.ibm.com/servers/eserver/techsupport.html.

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

To contact IBM Software support, follow these steps:
1. "Determining the business impact"
2. "Describing problems and gathering information"
3. "Submitting problems" on page 255

Determining the business impact

When you report a problem to IBM, you are asked to supply a severity level. Use the following criteria to understand and assess the business impact of the problem that you are reporting:

Severity 1
> The problem has a *critical* business impact. You are unable to use the program, resulting in a critical impact on operations. This condition requires an immediate solution.

Severity 2
> The problem has a *significant* business impact. The program is usable, but it is severely limited.

Severity 3
> The problem has *some* business impact. The program is usable, but less significant features (not critical to operations) are unavailable.

Severity 4
> The problem has *minimal* business impact. The problem causes little impact on operations, or a reasonable circumvention to the problem was implemented.

Describing problems and gathering information

When describing a problem to IBM, be as specific as possible. Include all relevant background information so that IBM Software Support specialists can help you solve the problem efficiently. To save time, know the answers to these questions:
- Which software versions were you running when the problem occurred?
- Do you have logs, traces, and messages that are related to the problem symptoms? IBM Software Support is likely to ask for this information.
- Can you re-create the problem? If so, what steps were performed to re-create the problem?
- Did you make any changes to the system? For example, did you make changes to the hardware, operating system, networking software, and so on.

- Are you currently using a workaround for the problem? If so, be prepared to explain the workaround when you report the problem.

Submitting problems

You can submit your problem to IBM Software Support in one of two ways:

Online

> Click **Submit and track problems** on the IBM Software Support site at http://www.ibm.com/software/support/probsub.html. Type your information into the appropriate problem submission form.

By phone

> For the phone number to call in your country, go to the contacts page of the *IBM Software Support Handbook* at http://techsupport.services.ibm.com/ guides/contacts.html and click the name of your geographic region.

If the problem you submit is for a software defect or for missing or inaccurate documentation, IBM Software Support creates an Authorized Program Analysis Report (APAR). The APAR describes the problem in detail. Whenever possible, IBM Software Support provides a workaround that you can implement until the APAR is resolved and a fix is delivered. IBM publishes resolved APARs on the Software Support Web site daily, so that other users who experience the same problem can benefit from the same resolution.

Appendix 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 rulebase. See the *IBM Tivoli Monitoring Installation and Setup Guide* for details.

Each of the event classes is a child of KE8_Base and is defined in the ke8.baroc file. The KE8_Base event class can be used for generic rules processing for any event from the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent.

For events generated by situations in the Managed Meter Systems attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_MANAGED_METER_SYSTEMS class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- subnode_msn: STRING
- subnode_affinity: STRING
- subnode_type: STRING
- subnode_resource_name: STRING
- subnode_version: STRING

For events generated by situations in the Managed PDU Systems attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_MANAGED_PDU_SYSTEMS class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- subnode_msn: STRING
- subnode_affinity: STRING
- subnode_type: STRING
- subnode_resource_name: STRING
- subnode_version: STRING

For events generated by situations in the Managed UPS Systems attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_MANAGED_UPS_SYSTEMS class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- subnode_msn: STRING
- subnode_affinity: STRING
- subnode_type: STRING
- subnode_resource_name: STRING
- subnode_version: STRING

For events generated by situations in the Meter Active Alarms attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_METER_ACTIVE_ALARMS class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- id: INTEGER
- sequenceindex: INTEGER
- description: STRING
- alarmvalue: STRING
- level: INTEGER
- level_enum: STRING
- time: STRING

For events generated by situations in the Meter Active Alarms URI attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_METER_ACTIVE_ALARMS_URI class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- uris: STRING
- id: INTEGER
- sequenceindex: INTEGER
- description: STRING
- alarmvalue: STRING
- level: INTEGER
- level_enum: STRING
- time: STRING

For events generated by situations in the Meter Alarms attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_METER_ALARMS class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- numalarmspresent: INTEGER

For events generated by situations in the Meter Demand Measures attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_METER_DEMAND_MEASURES class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- intervaltype: INTEGER
- intervaltype_enum: STRING
- meterindex: INTEGER
- demandinterval: INTEGER
- subinterval: INTEGER
- kilowatts: INTEGER
- peakkilowatts: INTEGER
- kva: INTEGER
- peakkva: INTEGER
- kvar: INTEGER
- peakkvar: INTEGER
- lastpeakreset: STRING

For events generated by situations in the Meter Energy Measures attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_METER_ENERGY_MEASURES class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- kilowatthours: INTEGER
- meterindex: INTEGER
- kilovahours: INTEGER
- kilovarhours: INTEGER
- lastenergyreset: STRING

For events generated by situations in the Meter Measures attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_METER_MEASURES class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- meterindex: INTEGER
- mainvoltage: INTEGER
- mainvoltagetype: STRING
- secondvoltage: INTEGER
- secondvoltagetype: STRING
- current: INTEGER
- percentload: INTEGER
- frequency: INTEGER

For events generated by situations in the Meter Min Avg Max attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_METER_MIN_AVG_MAX class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- meterindex: INTEGER
- minavgmaxtag: STRING
- voltageln: INTEGER
- linecurrent: INTEGER
- neutralcurrent: INTEGER
- frequency: INTEGER
- powerfactor: INTEGER

For events generated by situations in the Meter Phase Measures attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_METER_PHASE_MEASURES class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- meterindex: INTEGER
- phaseindex: INTEGER
- voltagell: INTEGER
- voltageln: INTEGER
- current: INTEGER
- percentload: INTEGER

For events generated by situations in the Meter Physical Configuration attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_METER_PHYSICAL_CONFIGURATION class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- component: INTEGER
- description: STRING
- vendortype: STRING
- ke8_class: INTEGER
- ke8_class_enum: STRING
- name: STRING
- hardwarerev: STRING
- firmwarerev: STRING
- softwarerev: STRING
- serialnum: STRING
- mfgname: STRING
- modelname: STRING
- assetid: STRING
- uris: STRING
- adminstate: INTEGER
- adminstate_enum: STRING
- operstate: INTEGER
- operstate_enum: STRING

- usagestate: INTEGER
- usagestate_enum: STRING
- standbystate: INTEGER
- standbystate_enum: STRING

For events generated by situations in the Meter Power Qualilty Sag Surge attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_METER_POWER_QUALILTY_SAG_SURGE class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- meterindex: INTEGER
- sagsurgeindex: INTEGER
- sagsurgelevel: STRING
- sagcount: INTEGER
- surgecount: INTEGER

For events generated by situations in the Meter Power Quality Measures attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_METER_POWER_QUALITY_MEASURES class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- meterindex: INTEGER
- presentqualityraw: INTEGER
- presentqualityraw_enum: STRING
- last24qualityraw: INTEGER
- last24qualityraw_enum: STRING
- voltagethd: INTEGER
- currenttdd: INTEGER
- lastsagsurgereset: STRING
- presentquality: INTEGER
- presentquality_enum: STRING
- last24quality: INTEGER
- last24quality_enum: STRING

For events generated by situations in the Meter Realtime Measures attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_METER_REALTIME_MEASURES class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- meterindex: INTEGER
- neutralcurrent: INTEGER
- groundcurrent: INTEGER
- totalwatts: INTEGER
- totalva: INTEGER
- totalvar: INTEGER

- powerfactor: INTEGER
- frequency: INTEGER
- btuperhour: INTEGER

For events generated by situations in the Meter Realtime Phase Measures attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_METER_REALTIME_PHASE_MEASURES class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- meterindex: INTEGER
- phaseindex: INTEGER
- voltagell: INTEGER
- voltageln: INTEGER
- current: INTEGER
- watts: INTEGER
- va: INTEGER
- var: INTEGER
- powerfactor: INTEGER

For events generated by situations in the Meter System Information attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_METER_SYSTEM_INFORMATION class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- sysdescription: STRING
- sysuptime: STRING
- syscontact: STRING
- sysname: STRING
- syslocation: STRING

For events generated by situations in the MTR ID attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_MTR_ID class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- manufacturer: STRING
- model: STRING
- serialnumber: STRING

For events generated by situations in the MTR Performance Object Status attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_MTR_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
- last_collection_start: STRING
- last_collection_finished: STRING
- last_collection_duration: INTEGER
- average_collection_duration: INTEGER
- refresh_interval: INTEGER
- number_of_collections: INTEGER
- cache_hits: INTEGER
- cache_misses: INTEGER
- cache_hit_percent: INTEGER
- intervals_skipped: INTEGER

For events generated by situations in the MTR URI attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_MTR_URI class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- uris: STRING

For events generated by situations in the PDU Active Alarms attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_PDU_ACTIVE_ALARMS class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- id: INTEGER
- sequenceindex: INTEGER
- description: STRING
- alarmvalue: STRING
- level: INTEGER
- level_enum: STRING
- time: STRING

For events generated by situations in the PDU Active Alarms URI attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_PDU_ACTIVE_ALARMS_URI class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- uris: STRING
- id: INTEGER
- sequenceindex: INTEGER
- description: STRING

- alarmvalue: STRING
- level: INTEGER
- level_enum: STRING
- time: STRING

For events generated by situations in the PDU Alarms attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_PDU_ALARMS class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- numalarmspresent: INTEGER

For events generated by situations in the PDU Breaker Meters Table attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_PDU_BREAKER_METERS_TABLE class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- panel: INTEGER
- breaker: INTEGER
- totalkilowatthours: INTEGER
- totalkilowatthoursdelta: INTEGER

For events generated by situations in the PDU Breaker Phase Meters Table attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_PDU_BREAKER_PHASE_METERS_TABLE class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- panel: INTEGER
- breaker: INTEGER
- phase: INTEGER
- breakerphaseva: INTEGER
- power: INTEGER
- powerfactor: INTEGER
- current: INTEGER
- percentload: INTEGER

For events generated by situations in the PDU Breaker Ratings Table attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_PDU_BREAKER_RATINGS_TABLE class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- panel: INTEGER
- breaker: INTEGER
- breakername: STRING
- ratedcurrent: INTEGER
- numphases: INTEGER

For events generated by situations in the PDU Contact Sensor Table attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_PDU_CONTACT_SENSOR_TABLE class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- contact: INTEGER
- type: INTEGER
- type_enum: STRING
- state: INTEGER
- state_enum: STRING
- description: STRING

For events generated by situations in the PDU Environment attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_PDU_ENVIRONMENT class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- remotetemp: INTEGER
- remotehumidity: INTEGER
- numcontacts: INTEGER
- remotetemplowerlimit: INTEGER
- remotetempupperlimit: INTEGER
- remotehumiditylowerlimit: INTEGER
- remotehumidityupperlimit: INTEGER

For events generated by situations in the PDU ID attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_PDU_ID class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- manufacturer: STRING
- model: STRING
- serialnumber: STRING

For events generated by situations in the PDU Input attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_PDU_INPUT class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- inputfrequency: INTEGER
- inputva: INTEGER
- inputpower: INTEGER
- inputpowerfactor: INTEGER
- inputgroundcurrent: INTEGER
- inputvoltageunits: STRING
- inputnumphases: INTEGER

For events generated by situations in the PDU Input Output attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_PDU_INPUT_OUTPUT class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- inputfrequency: INTEGER
- inputva: INTEGER
- inputpower: INTEGER
- inputpowerfactor: INTEGER
- inputgroundcurrent: INTEGER
- inputvoltageunits: STRING
- inputnumphases: INTEGER
- outputkilowatthours: INTEGER
- outputva: INTEGER
- outputpower: INTEGER
- outputpowerfactor: INTEGER
- outputneutralcurrent: INTEGER
- outputcurrent: INTEGER
- outputvoltageunits: STRING
- outputnumphases: INTEGER
- outputkilowatthoursdelta: INTEGER

For events generated by situations in the PDU Input Output Table attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_PDU_INPUT_OUTPUT_TABLE class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- inputphase: INTEGER
- inputphasevoltage: INTEGER
- inputphasecurrent: INTEGER
- inputphasepercentload: INTEGER
- outputphase: INTEGER
- outputvoltage: INTEGER
- outputcurrent: INTEGER
- outputpercentload: INTEGER

For events generated by situations in the PDU Input Table attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_PDU_INPUT_TABLE class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- inputphase: INTEGER
- inputphasevoltage: INTEGER
- inputphasecurrent: INTEGER
- inputphasepercentload: INTEGER

For events generated by situations in the PDU Nameplate attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_PDU_NAMEPLATE class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- ratingva: INTEGER
- nominaloutputvoltage: INTEGER
- numphases: INTEGER
- numpanels: INTEGER

For events generated by situations in the PDU Output attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_PDU_OUTPUT class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- outputkilowatthours: INTEGER
- outputva: INTEGER
- outputpower: INTEGER
- outputpowerfactor: INTEGER
- outputneutralcurrent: INTEGER
- outputcurrent: INTEGER
- outputvoltageunits: STRING
- outputnumphases: INTEGER
- outputkilowatthoursdelta: INTEGER

For events generated by situations in the PDU Output Table attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_PDU_OUTPUT_TABLE class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- outputphase: INTEGER
- outputvoltage: INTEGER
- outputcurrent: INTEGER
- outputpercentload: INTEGER

For events generated by situations in the PDU Panel Meters Table attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_PDU_PANEL_METERS_TABLE class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- totalkilowatthours: INTEGER
- panel: INTEGER
- panelva: INTEGER
- power: INTEGER
- powerfactor: INTEGER
- neutralcurrent: INTEGER
- totalkilowatthoursdelta: INTEGER

For events generated by situations in the PDU Panel Phase Meters Table attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_PDU_PANEL_PHASE_METERS_TABLE class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- panel: INTEGER
- phase: INTEGER
- voltage: INTEGER
- current: INTEGER
- percentload: INTEGER

For events generated by situations in the PDU Panel Ratings Table attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_PDU_PANEL_RATINGS_TABLE class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- panel: INTEGER
- ratedvoltage: INTEGER
- ratedbreakercurrent: INTEGER
- numphases: INTEGER
- numbreakers: INTEGER
- voltageunits: STRING

For events generated by situations in the PDU Performance Object Status attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_PDU_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
- last_collection_start: STRING
- last_collection_finished: STRING
- last_collection_duration: INTEGER
- average_collection_duration: INTEGER
- refresh_interval: INTEGER
- number_of_collections: INTEGER
- cache_hits: INTEGER
- cache_misses: INTEGER

- cache_hit_percent: INTEGER
- intervals_skipped: INTEGER

For events generated by situations in the PDU Physical Configuration attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_PDU_PHYSICAL_CONFIGURATION class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- component: INTEGER
- description: STRING
- vendortype: STRING
- ke8_class: INTEGER
- ke8_class_enum: STRING
- name: STRING
- hardwarerev: STRING
- firmwarerev: STRING
- softwarerev: STRING
- serialnum: STRING
- mfgname: STRING
- modelname: STRING
- assetid: STRING
- uris: STRING
- adminstate: INTEGER
- adminstate_enum: STRING
- operstate: INTEGER
- operstate_enum: STRING
- usagestate: INTEGER
- usagestate_enum: STRING
- standbystate: INTEGER
- standbystate_enum: STRING

For events generated by situations in the PDU System Information attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_PDU_SYSTEM_INFORMATION class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- sysdescription: STRING
- sysuptime: STRING
- syscontact: STRING
- sysname: STRING
- syslocation: STRING

For events generated by situations in the PDU URI attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_PDU_URI class. This class contains the following slots:
- node: STRING

- timestamp: STRING
- uris: STRING

For events generated by situations in the Performance Object Status attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_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
- last_collection_start: STRING
- last_collection_finished: STRING
- last_collection_duration: INTEGER
- average_collection_duration: INTEGER
- refresh_interval: INTEGER
- number_of_collections: INTEGER
- cache_hits: INTEGER
- cache_misses: INTEGER
- cache_hit_percent: INTEGER
- intervals_skipped: INTEGER

For events generated by situations in the Thread Pool Status attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_THREAD_POOL_STATUS class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- thread_pool_size: INTEGER
- thread_pool_max_size: INTEGER
- thread_pool_active_threads: INTEGER
- thread_pool_avg_active_threads: INTEGER
- thread_pool_min_active_threads: INTEGER
- thread_pool_max_active_threads: INTEGER
- thread_pool_queue_length: INTEGER
- thread_pool_avg_queue_length: INTEGER
- thread_pool_min_queue_length: INTEGER
- thread_pool_max_queue_length: INTEGER
- thread_pool_avg_job_wait: INTEGER
- thread_pool_total_jobs: INTEGER

For events generated by situations in the UPS Active Alarms attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_UPS_ACTIVE_ALARMS class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- id: INTEGER
- sequenceindex: INTEGER
- description: STRING
- alarmvalue: STRING
- level: INTEGER
- level_enum: STRING
- time: STRING

For events generated by situations in the UPS Active Alarms URI attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_UPS_ACTIVE_ALARMS_URI class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- uris: STRING
- id: INTEGER
- sequenceindex: INTEGER
- description: STRING
- alarmvalue: STRING
- level: INTEGER
- level_enum: STRING
- time: STRING

For events generated by situations in the UPS Alarms attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_UPS_ALARMS class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- numalarmspresent: INTEGER

For events generated by situations in the UPS Battery attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_UPS_BATTERY class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- timeremaining: INTEGER
- voltage: INTEGER
- current_amps: INTEGER
- current: INTEGER
- capacity: INTEGER
- abmstatus: INTEGER
- abmstatus_enum: STRING
- lastreplaceddate: STRING

For events generated by situations in the UPS Bypass attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_UPS_BYPASS class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- bypassfrequency: INTEGER
- bypassnumphases: INTEGER

For events generated by situations in the UPS Bypass Table attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_UPS_BYPASS_TABLE class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- bypassphase: INTEGER
- bypassvoltage: INTEGER

For events generated by situations in the UPS Contact Table attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_UPS_CONTACT_TABLE class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- contact: INTEGER
- type: INTEGER
- type_enum: STRING
- state: INTEGER
- state_enum: STRING
- xupscontactdescr: STRING

For events generated by situations in the UPS Environment attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_UPS_ENVIRONMENT class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- ambienttemp: INTEGER
- ambientlowerlimit: INTEGER
- ambientupperlimit: INTEGER
- ambienthumidity: INTEGER
- remotetemp: INTEGER
- remotehumidity: INTEGER
- numcontacts: INTEGER
- remotetemplowerlimit: INTEGER
- remotetempupperlimit: INTEGER
- remotehumiditylowerlimit: INTEGER
- remotehumidityupperlimit: INTEGER

For events generated by situations in the UPS ID attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_UPS_ID class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- manufacturer: STRING
- model: STRING
- serialnumber: STRING

For events generated by situations in the UPS Identification attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_UPS_IDENTIFICATION class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- manufacturer: STRING
- model: STRING
- softwareversion: STRING
- name: STRING

For events generated by situations in the UPS Identification URI attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_UPS_IDENTIFICATION_URI class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- uris: STRING
- manufacturer: STRING
- model: STRING
- softwareversion: STRING
- name: STRING

For events generated by situations in the UPS Input attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_UPS_INPUT class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- inputfrequency: INTEGER
- inputlinebads: INTEGER
- inputnumphases: INTEGER
- input_source: INTEGER
- input_source_enum: STRING
- dual_input_status: INTEGER
- dual_input_status_enum: STRING

For events generated by situations in the UPS Input Output attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_UPS_INPUT_OUTPUT class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- inputfrequency: INTEGER
- inputlinebads: INTEGER

- inputnumphases: INTEGER
- input_source: INTEGER
- input_source_enum: STRING
- dual_input_status: INTEGER
- dual_input_status_enum: STRING
- outputload: INTEGER
- outputfrequency: INTEGER
- outputnumphases: INTEGER
- output_source: INTEGER
- output_source_enum: STRING

For events generated by situations in the UPS Input Output Table attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_UPS_INPUT_OUTPUT_TABLE class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- inputphase: INTEGER
- inputvoltage: INTEGER
- inputcurrentamps: INTEGER
- inputcurrent: INTEGER
- inputwatts: INTEGER
- outputphase: INTEGER
- outputvoltage: INTEGER
- outputcurrentamps: INTEGER
- outputcurrent: INTEGER
- outputwatts: INTEGER

For events generated by situations in the UPS Input Table attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_UPS_INPUT_TABLE class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- inputphase: INTEGER
- inputvoltage: INTEGER
- inputcurrentamps: INTEGER
- inputcurrent: INTEGER
- inputwatts: INTEGER

For events generated by situations in the UPS Output attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_UPS_OUTPUT class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- outputload: INTEGER
- outputfrequency: INTEGER
- outputnumphases: INTEGER

- output_source: INTEGER
- output_source_enum: STRING

For events generated by situations in the UPS Output Table attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_UPS_OUTPUT_TABLE class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- outputphase: INTEGER
- outputvoltage: INTEGER
- outputcurrentamps: INTEGER
- outputcurrent: INTEGER
- outputwatts: INTEGER

For events generated by situations in the UPS Performance Object Status attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_UPS_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
- last_collection_start: STRING
- last_collection_finished: STRING
- last_collection_duration: INTEGER
- average_collection_duration: INTEGER
- refresh_interval: INTEGER
- number_of_collections: INTEGER
- cache_hits: INTEGER
- cache_misses: INTEGER
- cache_hit_percent: INTEGER
- intervals_skipped: INTEGER

For events generated by situations in the UPS Physical Configuration attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_UPS_PHYSICAL_CONFIGURATION class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- component: INTEGER
- description: STRING
- vendortype: STRING

- ke8_class: INTEGER
- ke8_class_enum: STRING
- name: STRING
- hardwarerev: STRING
- firmwarerev: STRING
- softwarerev: STRING
- serialnum: STRING
- mfgname: STRING
- modelname: STRING
- assetid: STRING
- uris: STRING
- adminstate: INTEGER
- adminstate_enum: STRING
- operstate: INTEGER
- operstate_enum: STRING
- usagestate: INTEGER
- usagestate_enum: STRING
- standbystate: INTEGER
- standbystate_enum: STRING

For events generated by situations in the UPS Power Configuration attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_UPS_POWER_CONFIGURATION class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- outputvoltage: INTEGER
- inputvoltage: INTEGER
- outputwatts: INTEGER
- outputfreq: INTEGER
- dateandtime: STRING
- lowoutputvoltagelimit: INTEGER
- highoutputvoltagelimit: INTEGER
- installdate: STRING

For events generated by situations in the UPS Receptacle Table attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_UPS_RECEPTACLE_TABLE class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- receptacle: INTEGER
- ke8_status: INTEGER
- ke8_status_enum: STRING
- offdelaysecs: INTEGER
- ondelaysecs: INTEGER
- autooffdelay: INTEGER
- autoondelay: INTEGER

For events generated by situations in the UPS System Information attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_UPS_SYSTEM_INFORMATION class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- sysdescription: STRING
- sysuptime: STRING
- syscontact: STRING
- sysname: STRING
- syslocation: STRING

For events generated by situations in the UPS Test attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_UPS_TEST class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- batterystatus: INTEGER
- batterystatus_enum: STRING
- lastgeneraltest: INTEGER
- lastgeneraltest_enum: STRING
- lastgeneraltestresult: INTEGER
- lastgeneraltestresult_enum: STRING

For events generated by situations in the UPS Topology attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_UPS_TOPOLOGY class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- type: INTEGER
- machinecode: INTEGER
- unitnumber: INTEGER
- powerstrategy: INTEGER
- powerstrategy_enum: STRING

For events generated by situations in the UPS URI attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_UPS_URI class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- uris: STRING

For events generated by situations in the WH PDU Breaker Meters Table attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_WH_PDU_BREAKER_METERS_TABLE class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- manufacturer: STRING

- model: STRING
- serialnumber: STRING
- panel: INTEGER
- breaker: INTEGER
- totalkilowatthours: INTEGER
- totalkilowatthoursdelta: INTEGER

For events generated by situations in the WH PDU Breaker Phase Meters Table attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_WH_PDU_BREAKER_PHASE_METERS_TABLE class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- manufacturer: STRING
- model: STRING
- serialnumber: STRING
- panel: INTEGER
- breaker: INTEGER
- phase: INTEGER
- breakerphaseva: INTEGER
- power: INTEGER
- powerfactor: INTEGER
- current: INTEGER
- percentload: INTEGER

For events generated by situations in the WH PDU Breaker Ratings Table attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_WH_PDU_BREAKER_RATINGS_TABLE class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- manufacturer: STRING
- model: STRING
- serialnumber: STRING
- panel: INTEGER
- breaker: INTEGER
- breakername: STRING
- ratedcurrent: INTEGER
- numphases: INTEGER

For events generated by situations in the WH PDU Environment attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_WH_PDU_ENVIRONMENT class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- manufacturer: STRING
- model: STRING
- serialnumber: STRING

- remotetemp: INTEGER
- remotehumidity: INTEGER
- numcontacts: INTEGER
- remotetemplowerlimit: INTEGER
- remotetempupperlimit: INTEGER
- remotehumiditylowerlimit: INTEGER
- remotehumidityupperlimit: INTEGER

For events generated by situations in the WH PDU Input attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_WH_PDU_INPUT class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- manufacturer: STRING
- model: STRING
- serialnumber: STRING
- inputfrequency: INTEGER
- inputva: INTEGER
- inputpower: INTEGER
- inputpowerfactor: INTEGER
- inputgroundcurrent: INTEGER
- inputvoltageunits: STRING
- inputnumphases: INTEGER

For events generated by situations in the WH PDU Input Table attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_WH_PDU_INPUT_TABLE class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- manufacturer: STRING
- model: STRING
- serialnumber: STRING
- inputphase: INTEGER
- inputphasevoltage: INTEGER
- inputphasecurrent: INTEGER
- inputphasepercentload: INTEGER

For events generated by situations in the WH PDU Nameplate attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_WH_PDU_NAMEPLATE class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- manufacturer: STRING
- model: STRING
- serialnumber: STRING
- ratingva: INTEGER
- nominaloutputvoltage: INTEGER

- numphases: INTEGER
- numpanels: INTEGER

For events generated by situations in the WH PDU Output attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_WH_PDU_OUTPUT class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- manufacturer: STRING
- model: STRING
- serialnumber: STRING
- outputkilowatthours: INTEGER
- outputva: INTEGER
- outputpower: INTEGER
- outputpowerfactor: INTEGER
- outputneutralcurrent: INTEGER
- outputcurrent: INTEGER
- outputvoltageunits: STRING
- outputnumphases: INTEGER
- outputkilowatthoursdelta: INTEGER

For events generated by situations in the WH PDU Output Table attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_WH_PDU_OUTPUT_TABLE class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- manufacturer: STRING
- model: STRING
- serialnumber: STRING
- outputphase: INTEGER
- outputvoltage: INTEGER
- outputcurrent: INTEGER
- outputpercentload: INTEGER

For events generated by situations in the WH PDU Panel Meters Table attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_WH_PDU_PANEL_METERS_TABLE class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- manufacturer: STRING
- model: STRING
- serialnumber: STRING
- totalkilowatthours: INTEGER
- panel: INTEGER
- panelva: INTEGER
- power: INTEGER

- powerfactor: INTEGER
- neutralcurrent: INTEGER
- totalkilowatthoursdelta: INTEGER

For events generated by situations in the WH PDU Panel Phase Meters Table attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_WH_PDU_PANEL_PHASE_METERS_TABLE class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- manufacturer: STRING
- model: STRING
- serialnumber: STRING
- panel: INTEGER
- phase: INTEGER
- voltage: INTEGER
- current: INTEGER
- percentload: INTEGER

For events generated by situations in the WH PDU Panel Ratings Table attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_WH_PDU_PANEL_RATINGS_TABLE class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- manufacturer: STRING
- model: STRING
- serialnumber: STRING
- panel: INTEGER
- ratedvoltage: INTEGER
- ratedbreakercurrent: INTEGER
- numphases: INTEGER
- numbreakers: INTEGER
- voltageunits: STRING

For events generated by situations in the WH UPS Bypass attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_WH_UPS_BYPASS class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- manufacturer: STRING
- model: STRING
- serialnumber: STRING
- bypassfrequency: INTEGER
- bypassnumphases: INTEGER

For events generated by situations in the WH UPS Bypass Table attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_WH_UPS_BYPASS_TABLE class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- manufacturer: STRING
- model: STRING
- serialnumber: STRING
- bypassphase: INTEGER
- bypassvoltage: INTEGER

For events generated by situations in the WH UPS Environment attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_WH_UPS_ENVIRONMENT class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- manufacturer: STRING
- model: STRING
- serialnumber: STRING
- ambienttemp: INTEGER
- ambientlowerlimit: INTEGER
- ambientupperlimit: INTEGER
- ambienthumidity: INTEGER
- remotetemp: INTEGER
- remotehumidity: INTEGER
- numcontacts: INTEGER
- remotetemplowerlimit: INTEGER
- remotetempupperlimit: INTEGER
- remotehumiditylowerlimit: INTEGER
- remotehumidityupperlimit: INTEGER

For events generated by situations in the WH UPS Input attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_WH_UPS_INPUT class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- manufacturer: STRING
- model: STRING
- serialnumber: STRING
- inputfrequency: INTEGER
- inputlinebads: INTEGER
- inputnumphases: INTEGER
- input_source: INTEGER
- input_source_enum: STRING
- dual_input_status: INTEGER
- dual_input_status_enum: STRING

For events generated by situations in the WH UPS Input Table attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_WH_UPS_INPUT_TABLE class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- manufacturer: STRING
- model: STRING
- serialnumber: STRING
- inputphase: INTEGER
- inputvoltage: INTEGER
- inputcurrentamps: INTEGER
- inputcurrent: INTEGER
- inputwatts: INTEGER

For events generated by situations in the WH UPS Output attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_WH_UPS_OUTPUT class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- manufacturer: STRING
- model: STRING
- serialnumber: STRING
- outputload: INTEGER
- outputfrequency: INTEGER
- outputnumphases: INTEGER
- output_source: INTEGER
- output_source_enum: STRING

For events generated by situations in the WH UPS Output Table attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_WH_UPS_OUTPUT_TABLE class. This class contains the following slots:

- node: STRING
- timestamp: STRING
- manufacturer: STRING
- model: STRING
- serialnumber: STRING
- outputphase: INTEGER
- outputvoltage: INTEGER
- outputcurrentamps: INTEGER
- outputcurrent: INTEGER
- outputwatts: INTEGER

For events generated by situations in the WH UPS Power Configuration attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_WH_UPS_POWER_CONFIGURATION class. This class contains the following slots:

- node: STRING
- timestamp: STRING

- manufacturer: STRING
- model: STRING
- serialnumber: STRING
- outputvoltage: INTEGER
- inputvoltage: INTEGER
- outputwatts: INTEGER
- outputfreq: INTEGER
- dateandtime: STRING
- lowoutputvoltagelimit: INTEGER
- highoutputvoltagelimit: INTEGER
- installdate: STRING

For events generated by situations in the WH UPS Topology attribute group, Tivoli Enterprise Console events are sent using the ITM_KE8_WH_UPS_TOPOLOGY class. This class contains the following slots:
- node: STRING
- timestamp: STRING
- manufacturer: STRING
- model: STRING
- serialnumber: STRING
- type: INTEGER
- machinecode: INTEGER
- unitnumber: INTEGER
- powerstrategy: INTEGER
- powerstrategy_enum: STRING

Appendix B. Documentation library

This appendix contains information about the publications related to the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent. These publications are listed in the following categories:

- IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent library
- Prerequisite publications
- Related publications

See the *IBM Tivoli Monitoring and OMEGAMON XE products: Documentation Guide*, SC23-8816, for information about accessing and using publications. You can find the *Documentation Guide* in the IBM Tivoli Monitoring and OMEGAMON® XE Information Center at http://publib.boulder.ibm.com/infocenter/tivihelp/v15r1/.

To find a list of new and changed publications, click **What's new** on the Welcome page of the IBM Tivoli Monitoring and OMEGAMON XE Information Center. To find publications from the previous version of a product, click **Previous information centers** on the Welcome page for the product.

IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent library

There is one document specific to the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent: *IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert Agent User's Guide*. This publication provides agent-specific information for configuring, using, and troubleshooting the IBM Tivoli Monitoring for Energy Management: Eaton Power Xpert 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 *IBM Tivoli Monitoring User's Guide* to monitor Eaton Power Xpert Devices resources.

Prerequisite publications

To use the information in this publication effectively, you must have some prerequisite knowledge, which you can obtain from the following IBM Tivoli Monitoring 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 User's Guide*
- *IBM Tivoli Monitoring: i5/OS® Agent User's Guide*
- *IBM Tivoli Monitoring: Linux OS Agent User's Guide*
- *IBM Tivoli Monitoring: UNIX Log 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*

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 Tivoli Monitoring and OMEGAMON XE products from the following sources:
- IBM Tivoli Open Process Automation Library (OPAL)

  http://www.ibm.com/software/tivoli/opal

  OPAL is an online catalog that contains integration documentation as well as other downloadable product extensions. This library is updated daily.
- Redbooks

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

  IBM Redbooks®, Redpapers, and Redbooks Technotes provide information about products from platform and solution perspectives.
- Technotes

  You can find Technotes through the IBM Software Support Web site at http://www.ibm.com/software/support/probsub.html, or more directly through your product Web site, which contains a link to Technotes (under **Solve a problem**).

  Technotes provide the latest information about known product limitations and workarounds.

Appendix C. 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 on 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 D. Notices

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