IEEE8023-POWER-ETHERNET-MIB DEFINITIONS ::= BEGIN

IMPORTS

MODULE-IDENTITY, OBJECT-TYPE, Integer32,

Gauge32, Counter32, NOTIFICATION-TYPE, org

FROM SNMPv2-SMI

TruthValue

FROM SNMPv2-TC

MODULE-COMPLIANCE, OBJECT-GROUP, NOTIFICATION-GROUP

FROM SNMPv2-CONF

SnmpAdminString

FROM SNMP-FRAMEWORK-MIB;

ieee8023powerEthernetMIB MODULE-IDENTITY

LAST-UPDATED "202307310000Z" – July 31, 2023

ORGANIZATION

"IEEE 802.3 Working Group"

CONTACT-INFO

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DESCRIPTION

"The MIB module for managing Power Source Equipment

(PSE) specified in IEEE Std 802.3 Clause 33."

REVISION "202307310000Z" – July 31, 2023

DESCRIPTION

"Revision, based on an earlier version in IEEE Std 802.3.1-2013

addressing changes from IEEE Std 802.3 revisions 2012, 2015, 2018,

and 2022."

REVISION "201304110000Z" -- April 11, 2013

DESCRIPTION

"Revision, based on an earlier version in IEEE Std 802.3.1-2011."

REVISION "201102020000Z" -- February 2, 2011

DESCRIPTION

"Initial version, based on an earlier version published

as RFC 3621."

::= { org ieee(111) standards-association-numbers-series-standards(2)

lan-man-stds(802) ieee802dot3(3) ieee802dot3dot1mibs(1) 8 }

pethNotifications OBJECT IDENTIFIER ::= { ieee8023powerEthernetMIB 0 }

pethObjects OBJECT IDENTIFIER ::= { ieee8023powerEthernetMIB 1 }

pethConformance OBJECT IDENTIFIER ::= { ieee8023powerEthernetMIB 2 }

-- PSE Objects

pethPsePortTable OBJECT-TYPE

SYNTAX SEQUENCE OF PethPsePortEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"A table of objects that display and control the power

characteristics of power Ethernet ports on a Power Source

Equipment (PSE) device. This group will be implemented in

managed power Ethernet switches and mid-span devices.

Values of all read-write objects in this table are

persistent at restart/reboot."

::= { pethObjects 1 }

pethPsePortEntry OBJECT-TYPE

SYNTAX PethPsePortEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"A set of objects that display and control the power

characteristics of a power Ethernet PSE port."

INDEX { pethPsePortGroupIndex , pethPsePortIndex }

::= { pethPsePortTable 1 }

PethPsePortEntry ::= SEQUENCE {

pethPsePortGroupIndex Integer32,

pethPsePortIndex Integer32,

pethPsePortAdminEnable TruthValue,

pethPsePortPowerPairsControlAbility TruthValue,

pethPsePortPowerPairs INTEGER,

pethPsePortDetectionStatus INTEGER,

pethPsePortPowerPriority INTEGER,

pethPsePortMPSAbsentCounter Counter32,

pethPsePortType SnmpAdminString,

pethPsePortPowerClassifications INTEGER,

pethPsePortInvalidSignatureCounter Counter32,

pethPsePortPowerDeniedCounter Counter32,

pethPsePortOverLoadCounter Counter32,

pethPsePortShortCounter Counter32,

pethPsePortActualPower Integer32,

pethPsePortPowerAccuracy Integer32,

pethPsePortCumulativeEnergy Counter32

}

pethPsePortGroupIndex OBJECT-TYPE

SYNTAX Integer32 (1..2147483647)

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This variable uniquely identifies the group

containing the port to which a power Ethernet PSE is

connected. Group means box in the stack, module in a

rack and the value 1 shall be used for non-modular devices.

Furthermore, the same value shall be used in this variable,

pethMainPseGroupIndex, and pethNotificationControlGroupIndex

to refer to a given box in a stack or module in a rack."

::= { pethPsePortEntry 1 }

pethPsePortIndex OBJECT-TYPE

SYNTAX Integer32 (1..2147483647)

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This variable uniquely identifies the power Ethernet PSE

port within group pethPsePortGroupIndex to which the

power Ethernet PSE entry is connected."

::= { pethPsePortEntry 2 }

pethPsePortAdminEnable OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"true (1) An interface that can provide the PSE functions.

false(2) The interface will act as it would if it had no PSE

function."

REFERENCE

"IEEE Std 802.3, 30.9.1.1.2"

::= { pethPsePortEntry 3 }

pethPsePortPowerPairsControlAbility OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Describes the capability of controlling the power pairs

functionality to switch pins for sourcing power.

The value true indicate that the device has the capability

to control the power pairs. When false the PSE Pinout

Alternative used cannot be controlled through the

PethPsePortAdminEnable attribute."

REFERENCE

"IEEE Std 802.3, 30.9.1.1.3"

::= { pethPsePortEntry 4 }

pethPsePortPowerPairs OBJECT-TYPE

SYNTAX INTEGER {

signal(1),

spare(2)

}

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"Describes or controls the pairs in use. If the value of

pethPsePortPowerPairsControl is true, this object is

writeable.

A value of signal(1) means that the signal pairs

only are in use.

A value of spare(2) means that the spare pairs

only are in use."

REFERENCE

"IEEE Std 802.3, 30.9.1.1.4"

::= { pethPsePortEntry 5 }

pethPsePortDetectionStatus OBJECT-TYPE

SYNTAX INTEGER {

disabled(1),

searching(2),

deliveringPower(3),

fault(4),

test(5),

otherFault(6)

}

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Describes the operational status of the port PD detection.

A value of disabled(1)- indicates that the PSE State diagram

is in the state DISABLED.

A value of deliveringPower(3) - indicates that the PSE State

diagram is in the state POWER\_ON for a duration greater than

tlim max (see IEEE Std 802.3, Table 33-11).

A value of fault(4) - indicates that the PSE State diagram is

in the state TEST\_ERROR.

A value of test(5) - indicates that the PSE State diagram is

in the state TEST\_MODE.

A value of otherFault(6) - indicates that the PSE State

diagram is in the state IDLE due to the variable

error\_conditions.

A value of searching(2)- indicates the PSE State diagram is

in a state other than those listed above."

REFERENCE

"IEEE Std 802.3, 30.9.1.1.5"

::= { pethPsePortEntry 6 }

pethPsePortPowerPriority OBJECT-TYPE

SYNTAX INTEGER {

critical(1),

high(2),

low(3)

}

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"This object controls the priority of the port from the point

of view of a power management algorithm. The priority that

is set by this variable could be used by a control mechanism

that prevents over current situations by disconnecting first

ports with lower power priority. Ports that connect devices

critical to the operation of the network - like the E911

telephones ports - should be set to higher priority."

::= { pethPsePortEntry 7 }

pethPsePortMPSAbsentCounter OBJECT-TYPE

SYNTAX Counter32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This counter is incremented when the PSE state diagram

transitions directly from the state POWER\_ON to the

state IDLE due to tmpdo\_timer\_done being asserted."

REFERENCE

"IEEE Std 802.3, 30.9.1.1.11"

::= { pethPsePortEntry 8 }

pethPsePortType OBJECT-TYPE

SYNTAX SnmpAdminString

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"A manager will set the value of this variable to indicate

the type of powered device that is connected to the port.

The default value supplied by the agent if no value has

ever been set should be a zero-length octet string."

::= { pethPsePortEntry 9 }

pethPsePortPowerClassifications OBJECT-TYPE

SYNTAX INTEGER {

class0(1),

class1(2),

class2(3),

class3(4),

class4(5)

}

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Classification is a way to tag different terminals on the

Power over LAN network according to their power consumption.

Devices such as IP telephones, WLAN access points and others,

will be classified according to their power requirements.

The meaning of the classification labels is defined in the

IEEE specification.

This variable is valid only while a PD is being powered,

that is, while the attribute pethPsePortDetectionStatus

is reporting the enumeration deliveringPower."

REFERENCE

"IEEE Std 802.3, 30.9.1.1.6"

::= { pethPsePortEntry 10 }

pethPsePortInvalidSignatureCounter OBJECT-TYPE

SYNTAX Counter32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This counter is incremented when the PSE state diagram

enters the state SIGNATURE\_INVALID."

REFERENCE

"IEEE Std 802.3, 30.9.1.1.7"

::= { pethPsePortEntry 11 }

pethPsePortPowerDeniedCounter OBJECT-TYPE

SYNTAX Counter32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This counter is incremented when the PSE state diagram

enters the state POWER\_DENIED."

REFERENCE

"IEEE Std 802.3, 30.9.1.1.14"

::= { pethPsePortEntry 12 }

pethPsePortOverLoadCounter OBJECT-TYPE

SYNTAX Counter32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This counter is incremented when the PSE state diagram

enters the state ERROR\_DELAY\_OVER."

REFERENCE

"IEEE Std 802.3, 30.9.1.1.17"

::= { pethPsePortEntry 13 }

pethPsePortActualPower OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"See IEEE Std 802.3, 30.9.1.1.12 aPSEActualPower."

REFERENCE

"IEEE Std 802.3, 30.9.1.1.23"

::= { pethPsePortEntry 15 }

pethPsePortPowerAccuracy OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"See IEEE Std 802.3, 30.9.1.1.13 aPSEPowerAccuracy."

REFERENCE

"IEEE Std 802.3, 30.9.1.1.24"

::= { pethPsePortEntry 16 }

pethPsePortCumulativeEnergy OBJECT-TYPE

SYNTAX Counter32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"See IEEE Std 802.3, 30.9.1.1.14 aPSECumulativeEnergy."

REFERENCE

"IEEE Std 802.3, 30.9.1.1.25"

::= { pethPsePortEntry 17 }

-- Main PSE Objects

pethMainPseObjects OBJECT IDENTIFIER ::= { pethObjects 3 }

pethMainPseTable OBJECT-TYPE

SYNTAX SEQUENCE OF PethMainPseEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"A table of objects that display and control attributes

of the main power source in a PSE device. Ethernet

switches are one example of devices that would support

these objects.

Values of all read-write objects in this table are

persistent at restart/reboot."

::= { pethMainPseObjects 1 }

pethMainPseEntry OBJECT-TYPE

SYNTAX PethMainPseEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"A set of objects that display and control the Main

power of a PSE."

INDEX { pethMainPseGroupIndex }

::= { pethMainPseTable 1 }

PethMainPseEntry ::= SEQUENCE {

pethMainPseGroupIndex

Integer32,

pethMainPsePower

Gauge32 ,

pethMainPseOperStatus

INTEGER,

pethMainPseConsumptionPower

Gauge32,

pethMainPseUsageThreshold

Integer32

}

pethMainPseGroupIndex OBJECT-TYPE

SYNTAX Integer32 (1..2147483647)

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This variable uniquely identifies the group to which

power Ethernet PSE is connected. Group means (box in

the stack, module in a rack) and the value 1 shall be

used for non-modular devices. Furthermore, the same

value shall be used in this variable, pethPsePortGroupIndex,

and pethNotificationControlGroupIndex to refer to a

given box in a stack or module in a rack."

::= { pethMainPseEntry 1 }

pethMainPsePower OBJECT-TYPE

SYNTAX Gauge32 (1..65535)

UNITS "Watts"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The nominal power of the PSE expressed in Watts."

::= { pethMainPseEntry 2 }

pethMainPseOperStatus OBJECT-TYPE

SYNTAX INTEGER {

on(1),

off(2),

faulty(3)

}

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The operational status of the main PSE."

::= { pethMainPseEntry 3 }

pethMainPseConsumptionPower OBJECT-TYPE

SYNTAX Gauge32

UNITS "Watts"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Measured usage power expressed in Watts."

::= { pethMainPseEntry 4 }

pethMainPseUsageThreshold OBJECT-TYPE

SYNTAX Integer32 (1..99)

UNITS "%"

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"The usage threshold expressed in percents for

comparing the measured power and initiating

an alarm if the threshold is exceeded."

::= { pethMainPseEntry 5 }

-- Notification Control Objects

pethNotificationControl OBJECT IDENTIFIER ::= { pethObjects 4 }

pethNotificationControlTable OBJECT-TYPE

SYNTAX SEQUENCE OF PethNotificationControlEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"A table of objects that display and control the

Notification on a PSE device.

Values of all read-write objects in this table are

persistent at restart/reboot."

::= { pethNotificationControl 1 }

pethNotificationControlEntry OBJECT-TYPE

SYNTAX PethNotificationControlEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"A set of objects that control the Notification events."

INDEX { pethNotificationControlGroupIndex }

::= { pethNotificationControlTable 1 }

PethNotificationControlEntry ::= SEQUENCE {

pethNotificationControlGroupIndex

Integer32,

pethNotificationControlEnable

TruthValue

}

pethNotificationControlGroupIndex OBJECT-TYPE

SYNTAX Integer32 (1..2147483647)

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This variable uniquely identifies the group. Group

means box in the stack, module in a rack and the value

1 shall be used for non-modular devices. Furthermore,

the same value shall be used in this variable,

pethPsePortGroupIndex, and

pethMainPseGroupIndex to refer to a given box in a

stack or module in a rack."

::= { pethNotificationControlEntry 1 }

pethNotificationControlEnable OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"This object controls, on a per-group basis, whether

or not notifications from the agent are enabled. The

value true(1) means that notifications are enabled; the

value false(2) means that they are not."

::= { pethNotificationControlEntry 2 }

--

-- Notifications Section

--

--

pethPsePortOnOffNotification NOTIFICATION-TYPE

OBJECTS { pethPsePortDetectionStatus }

STATUS current

DESCRIPTION

"This Notification indicates if Pse Port is delivering or

not power to the PD. This Notification should be sent on

every status change except in the searching mode.

At least 500 msec shall elapse between notifications

being emitted by the same object instance."

::= { pethNotifications 1 }

pethMainPowerUsageOnNotification NOTIFICATION-TYPE

OBJECTS { pethMainPseConsumptionPower }

STATUS current

DESCRIPTION

"This Notification indicate PSE Threshold usage

indication is on, the usage power is above the

threshold. At least 500 msec shall elapse between

notifications being emitted by the same object

instance."

::= { pethNotifications 2 }

pethMainPowerUsageOffNotification NOTIFICATION-TYPE

OBJECTS { pethMainPseConsumptionPower }

STATUS current

DESCRIPTION

"This Notification indicates PSE Threshold usage indication

off, the usage power is below the threshold.

At least 500 msec shall elapse between notifications being

emitted by the same object instance."

::= { pethNotifications 3 }

--

-- Conformance statements

--

pethCompliances OBJECT IDENTIFIER ::= { pethConformance 1 }

pethGroups OBJECT IDENTIFIER ::= { pethConformance 2 }

-- Compliance statements

pethCompliance MODULE-COMPLIANCE

STATUS current

DESCRIPTION

"Describes the requirements for conformance to the

Power Ethernet MIB."

MODULE -- this module

MANDATORY-GROUPS { pethPsePortGroup,

pethPsePortNotificationGroup,

pethNotificationControlGroup

}

GROUP pethMainPseGroup

DESCRIPTION

"The pethMainPseGroup is mandatory for PSE systems

that implement a main power supply."

GROUP pethMainPowerNotificationGroup

DESCRIPTION

"The pethMainPowerNotificationGroup is mandatory for

PSE systems that implement a main power supply."

::= { pethCompliances 1 }

pethPsePortGroup OBJECT-GROUP

OBJECTS {

pethPsePortAdminEnable,

pethPsePortPowerPairsControlAbility,

pethPsePortPowerPairs,

pethPsePortDetectionStatus,

pethPsePortPowerPriority,

pethPsePortMPSAbsentCounter,

pethPsePortInvalidSignatureCounter,

pethPsePortPowerDeniedCounter,

pethPsePortOverLoadCounter,

pethPsePortShortCounter,

pethPsePortType,

pethPsePortPowerClassifications,

pethPsePortActualPower,

pethPsePortPowerAccuracy,

pethPsePortCumulativeEnergy

}

STATUS current

DESCRIPTION

"PSE Port objects."

::= { pethGroups 1 }

pethMainPseGroup OBJECT-GROUP

OBJECTS {

pethMainPsePower,

pethMainPseOperStatus,

pethMainPseConsumptionPower,

pethMainPseUsageThreshold

}

STATUS current

DESCRIPTION

"Main PSE Objects."

::= { pethGroups 2 }

pethNotificationControlGroup OBJECT-GROUP

OBJECTS {

pethNotificationControlEnable

}

STATUS current

DESCRIPTION

"Notification Control Objects."

::= { pethGroups 3 }

pethPsePortNotificationGroup NOTIFICATION-GROUP

NOTIFICATIONS { pethPsePortOnOffNotification}

STATUS current

DESCRIPTION "Pse Port Notifications."

::= { pethGroups 4 }

pethMainPowerNotificationGroup NOTIFICATION-GROUP

NOTIFICATIONS { pethMainPowerUsageOnNotification,

pethMainPowerUsageOffNotification}

STATUS current

DESCRIPTION "Main PSE Notifications."

::= { pethGroups 5 }

END