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Precision Time Protocol Version 2 (PTPv2)  
Management Information Base  
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Abstract

This memo defines a portion of the Management Information Base (MIB) for use with network management protocols in TCP/IP-based internets. In particular, it defines objects for managing networks using Precision Time Protocol, specified in IEEE Std. 1588(TM)-2008.

This memo specifies a MIB module in a manner that is both compliant to the SNMPv2 SMI, and semantically identical to the peer SNMPv1 definitions.

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1. Introduction

This memo defines a portion of the Management Information Base (MIB) for use with network management protocols in the Internet Community. In particular, it describes managed objects used for managing PTP devices including the ordinary clock, transparent clock, boundary clocks.

This MIB is restricted to reading standard PTP data elements, as described in [IEEE 1588-2008]. This enables it to monitor the operation of PTP clocks within the network. It is envisioned this MIB will complement other managed objects to be defined that will provide more detailed information on the performance of PTP clocks

supporting the Telecom Profile defined in [G.8265.1], and any future profiles that may be defined. Those objects are considered out of scope for the current draft.

Similarly, this MIB is read-only and not intended to provide the ability to configure PTP clocks. Since PTP clocks are often embedded in other network elements such as routers, switches and gateways, this ability is generally provided via the configuration interface for the network element.

### 1.1. Relationship to other Profiles and MIBs

This MIB is intended to be used with the default PTP profile described in [IEEE 1588-2008] when running over the IP network layer. As stated above, it is envisioned this MIB will complement other managed objects to be defined to monitor and measure the performance of PTP clocks supporting specific PTP profiles, e.g. the Telecom Profile defined in [G.8265.1].

Some other PTP profiles have their own MIBs defined as part of the profile, and this MIB is not intended to replace those MIBs.

### 1.2. Change Log

This section tracks changes made to the revisions of the Internet Drafts of this document. It will be *\*deleted\** when the document is published as an RFC.

draft-vinay-tictoc-ntp-mib

-00 Mar 11 Initial version; showed structure of MIB

draft-ietf-tictoc-ntp-mib

-00 Jul 11 First full, syntactically correct and compileable MIB

-01 Jan 12 Revised following comments from Bert Wijnen:  
- revised introduction to clarify the scope, and the relationship to other MIBs and profiles  
- changed name to "ptpbase"  
- corrected some data types  
- corrected references and typos

-02 Jul 12 Revised following comment at IETF83:  
- changed "ptpbaseClockPortRunningIPversion" to the more generic "ptpbaseClockPortRunningTransport", covering all transport types defined in [IEEE 1588-2008] (i.e. IPv4, IPv6, Ethernet, DeviceNet and ControlNet).  
- changed addresses associated with transports from

"InetAddress" (for the IP transport) to a string, to allow for the different transport types.

- 03 Jul 12 Minor changes following comments from Andy Bierman:
  - corrected some compilation errors
  - moved OBJECT-GROUP and MODULE-COMPLIANCE macros to the end
  
- 04 Jan 13 Changes:
  - Use of 'AutonomousType' import
  - Display hint being specified for ClockIdentity, ClockInterval, ClockPortTransportTypeAddress Textual Conventions
  - Removal of the Textual convention ClockPortTransportType, replaced with the wellKnownTransportTypes
  - Modified ptpbaseClockPortCurrentPeerAddressType, ptpbaseClockPortRunningTransport, ptpbaseClockPortAssociateAddressType, to use AutonomousType.
  - various textual changes to descriptive text in response to comments
  
- 05 Feb 13 Several changes in response to comments from Alun Luchuk and Kevin Gross:
  - Modified the use of wellKnownTransportTypes and wellKnownEncapsulationTypes
  - changed ptpbaseClockPortSyncOneStep to ptpbaseClockPortSyncTwoStep to match IEEE1588 semantics
  - Re-ordered textual conventions to be alphabetic
  - Changed some types from Integer32 to use defined textual conventions
  - various minor descriptive text changes
  
- 06 Mar 14 Updated author information, and fixed typos

## 2. The SNMP Management Framework

The SNMP Management Framework presently consists of five major components:

- o An overall architecture, described in STD62, [RFC 3411].
- o Mechanisms for describing and naming objects and events for the purpose of management. The first version of this Structure of Management Information (SMI) is called SMIv1 and described in

STD 16: [RFC 1155], [RFC 1212] and [RFC 1215].

The second version, called SMIV2, is described in STD 58: [RFC 2578], [RFC 2579] and [RFC 2580].

- o Message protocols for transferring management information. The first version of the SNMP message protocol is called SNMPv1 and described in STD 15 [RFC 1157]. A second version of the SNMP message protocol, which is not an Internet standards track protocol, is called SNMPv2c and described in [RFC 1901] and [RFC 1906]. The third version of the message protocol is called SNMPv3 and described in STD62: [RFC 3417], [RFC 3412] and [RFC 3414].
- o Protocol operations for accessing management information. The first set of protocol operations and associated PDU formats is described in STD 15 [RFC 1157]. A second set of protocol operations and associated PDU formats is described in STD 62 [RFC 3416].
- o A set of fundamental applications described in STD 62 [RFC 3413] and the view-based access control mechanism described in STD 62 [RFC 3415].

Managed objects are accessed via a virtual information store, termed the Management Information Base or MIB. Objects in the MIB are defined using the mechanisms defined in the SMI.

This memo specifies a MIB module that is compliant to the SMIV2. A MIB conforming to the SMIV1 can be produced through the appropriate translations. The resulting translated MIB must be semantically equivalent, except where objects or events are omitted because no translation is possible (e.g., use of Counter64). Some machine readable information in SMIV2 will be converted into textual descriptions in SMIV1 during the translation process. However, this loss of machine readable information is not considered to change the semantics of the MIB.

### 3. Overview

The objects defined in this MIB are to be used when describing the Precision Time Protocol (PTPv2).

## 4. IETF PTP MIB Definition

```
PTPBASE-MIB DEFINITIONS ::= BEGIN
```

```
IMPORTS
```

```
    MODULE-IDENTITY,  
    OBJECT-TYPE,  
    OBJECT-IDENTITY,  
    Gauge32,  
    Unsigned32,  
    Counter32,  
    Counter64,  
    mib-2,  
    Integer32  
        FROM SNMPv2-SMI  
    OBJECT-GROUP,  
    MODULE-COMPLIANCE  
        FROM SNMPv2-CONF  
    TEXTUAL-CONVENTION,  
    TruthValue,  
    DisplayString,  
    AutonomousType  
        FROM SNMPv2-TC  
    InterfaceIndexOrZero  
        FROM IF-MIB;
```

```
ptpbaseMIB MODULE-IDENTITY
```

```
    LAST-UPDATED      "201207230000Z"  
    ORGANIZATION      "TICTOC Working Group"  
    CONTACT-INFO  
        "WG Email: tictoc@ietf.org
```

```
        Vinay Shankarkumar  
        Cisco Systems,  
        Email: vinays@cisco.com
```

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Microsemi Inc.,  
Email: greg.dowd@microsemi.com"

#### DESCRIPTION

"The MIB module for PTP version 2 (IEEE Std. 1588(TM)-2008)

Overview of PTP version 2 (IEEE Std. 1588(TM)-2008)

[IEEE 1588-2008] defines a protocol enabling precise synchronization of clocks in measurement and control systems implemented with packet-based networks, the Precision Time Protocol Version 2 (PTPv2). This MIB does not address the earlier version IEEE Std. 1588(TM)-2002 (PTPv1). The protocol is applicable to network elements communicating using IP. The protocol enables heterogeneous systems that include clocks of various inherent precision, resolution, and stability to synchronize to a grandmaster clock.

The protocol supports system-wide synchronization accuracy in the sub-microsecond range with minimal network and local clock computing resources. [IEEE 1588-2008] uses UDP/IP or Ethernet and can be adapted to other mappings. It includes formal mechanisms for message extensions, higher sampling rates, correction for asymmetry, a clock type to reduce error accumulation in large topologies, and specifications on how to incorporate the resulting additional data into the synchronization protocol. The [IEEE 1588-2008] defines conformance and management capability also.

#### MIB description

This MIB is to support the Precision Time Protocol version 2 (PTPv2, hereafter designated as PTP) features of network element system devices, when using the default PTP profile described in [IEEE 1588-2008] when running over the IP network layer.

It is envisioned this MIB will complement other managed objects to be defined to monitor and measure the performance of the PTP devices and telecom clocks supporting specific PTP profiles.

Some other PTP profiles have their own MIBs defined as part of the profile, and this MIB is not intended to replace those MIBs.

#### Acronyms:

ARB	Arbitrary Timescale
E2E	End-to-End
EUI	Extended Unique Identifier.
GPS	Global Positioning System
IANA	Internet Assigned Numbers Authority
IP	Internet Protocol
MAC	Media Access Control according to [IEEE 802.3-2008]
NIST	National Institute of Standards and Technology
NTP	Network Time Protocol (see IETF [RFC 5905])
OUI	Organizational Unique Identifier (allocated by the IEEE)
P2P	Peer-to-Peer
PTP	Precision Time Protocol
TAI	International Atomic Time
TC	Transparent Clock
UDP	User Datagram Protocol
UTC	Coordinated Universal Time

#### References:

[IEEE 1588-2008] IEEE Standard for A Precision Clock Synchronization Protocol for Networked Measurement and Control Systems, IEEE Std. 1588(TM)-2008, 24 July 2008.

As defined in [IEEE 1588-2008]:

#### Accuracy:

The mean of the time or frequency error between the clock under test and a perfect reference clock, over an ensemble of measurements. Stability is a measure of how the mean varies with respect to variables such as time, temperature, and so on, while the precision is a measure of the deviation of the error from the mean.

#### Atomic process:

A process is atomic if the values of all inputs to the process are not permitted to change until all of the results of the



process are instantiated, and the outputs of the process are not visible to other processes until the processing of each output is complete.

**Boundary clock:**

A clock that has multiple Precision Time Protocol (PTP) ports in a domain and maintains the timescale used in the domain. It may serve as the source of time, i.e., be a master clock, and may synchronize to another clock, i.e., be a slave clock.

**Boundary node clock:**

A clock that has multiple Precision Time Protocol (PTP) ports in a domain and maintains the timescale used in the domain. It differs from a boundary clock in that the clock roles can change.

**Clock:**

A node participating in the Precision Time Protocol (PTP) that is capable of providing a measurement of the passage of time since a defined epoch.

**Domain:**

A logical grouping of clocks that synchronize to each other using the protocol, but that are not necessarily synchronized to clocks in another domain.

**End-to-end transparent clock:**

A transparent clock that supports the use of the end-to-end delay measurement mechanism between slave clocks and the master clock. Each node must measure the residence time of PTP event messages and accumulate it in Correction Field.

**Epoch:**

The origin of a timescale.

**Event:**

An abstraction of the mechanism by which signals or conditions are generated and represented.

**Foreign master:**

An ordinary or boundary clock sending Announce messages to another clock that is not the current master recognized by the other clock.

**Grandmaster clock:**

Within a domain, a clock that is the ultimate source of time for clock synchronization using the protocol.

**Holdover:**

A clock previously synchronized/synchronized to another clock (normally a primary reference or a master clock) but now free-running based on its own internal oscillator, whose frequency is being adjusted using data acquired while it had been synchronized/synchronized to the other clock. It is said to be in holdover or in the holdover mode, as long as it is within its accuracy requirements.

**Link:**

A network segment between two Precision Time Protocol ports supporting the peer delay mechanism of this standard. The peer delay mechanism is designed to measure the propagation time over such a link.

**Management node:**

A device that configures and monitors clocks.

**Master clock:**

In the context of a single Precision Time Protocol communication path, a clock that is the source of time to which all other clocks on that path synchronize.

**Message timestamp point:**

A point within a Precision Time Protocol event message serving as a reference point in the message. A timestamp is defined by the instant a message timestamp point passes the reference plane of a clock.

**Multicast communication:**

A communication model in which each Precision Time Protocol message sent from any PTP port is capable of being received and processed by all PTP ports on the same PTP communication path.

**Node:**

A device that can issue or receive Precision Time Protocol communications on a network.

**One-step clock:**

A clock that provides time information using a single event message.

**On-pass support:**

Indicates that each node in the synchronization chain from master to slave can support IEEE-1588.

**Ordinary clock:**

A clock that has a single Precision Time Protocol port in a domain and maintains the timescale used in the domain. It may serve as a source of time, i.e., be a master clock, or may synchronize to another clock, i.e., be a slave clock.

**Parent clock:**

The master clock to which a clock is synchronized.

**Peer-to-peer transparent clock:**

A transparent clock that, in addition to providing Precision Time Protocol event transit time information, also provides corrections for the propagation delay of the link connected to the port receiving the PTP event message. In the presence of peer-to-peer transparent clocks, delay measurements between slave clocks and the master clock are performed using the peer-to-peer delay measurement mechanism.

**Phase change rate:**

The observed rate of change in the measured time with respect to the reference time. The phase change rate is equal to the fractional frequency offset between the measured frequency and the reference frequency.

**PortNumber:**

An index identifying a specific Precision Time Protocol port on a PTP node.

**Primary reference:**

A source of time and or frequency that is traceable to international standards.

**Profile:**

The set of allowed Precision Time Protocol features applicable to a device.

**Precision Time Protocol communication:**  
Information used in the operation of the protocol, transmitted in a PTP message over a PTP communication path.

**Precision Time Protocol communication path:**  
The signaling path portion of a particular network enabling direct communication among ordinary and boundary clocks.

**Precision Time Protocol node:**  
PTP ordinary, boundary, or transparent clock or a device that generates or parses PTP messages.

**Precision Time Protocol port:**  
A logical access point of a clock for PTP communications to the communications network.

**Recognized standard time source:**  
A recognized standard time source is a source external to Precision Time Protocol that provides time and/or frequency as appropriate that is traceable to the international standards laboratories maintaining clocks that form the basis for the International Atomic Time and Universal Coordinated Time timescales. Examples of these are GPS, NTP, and NIST timeservers.

**Requestor:**  
The port implementing the peer-to-peer delay mechanism that initiates the mechanism by sending a Pdelay\_Req message.

**Responder:**  
The port responding to the receipt of a Pdelay\_Req message as part of the operation of the peer-to-peer delay mechanism.

**Synchronized clocks:**  
Two clocks are synchronized to a specified uncertainty if they have the same epoch and their measurements of the time of a single event at an arbitrary time differ by no more than that uncertainty.

**Syntonzized clocks:**  
Two clocks are syntonzized if the duration of the second is the same on both, which means the time as measured by each advances

at the same rate. They may or may not share the same epoch.

**Timeout:**

A mechanism for terminating requested activity that, at least from the requester's perspective, does not complete within the specified time.

**Timescale:**

A linear measure of time from an epoch.

**Traceability:**

A property of the result of a measurement or the value of a standard whereby it can be related to stated references, usually national or international standards, through an unbroken chain of comparisons all having stated uncertainties.

**Translation device:**

A boundary clock or, in some cases, a transparent clock that translates the protocol messages between regions implementing different transport and messaging protocols, between different versions of [IEEE 1588-2008], or different PTP profiles.

**Transparent clock:**

A device that measures the time taken for a Precision Time Protocol event message to transit the device and provides this information to clocks receiving this PTP event message.

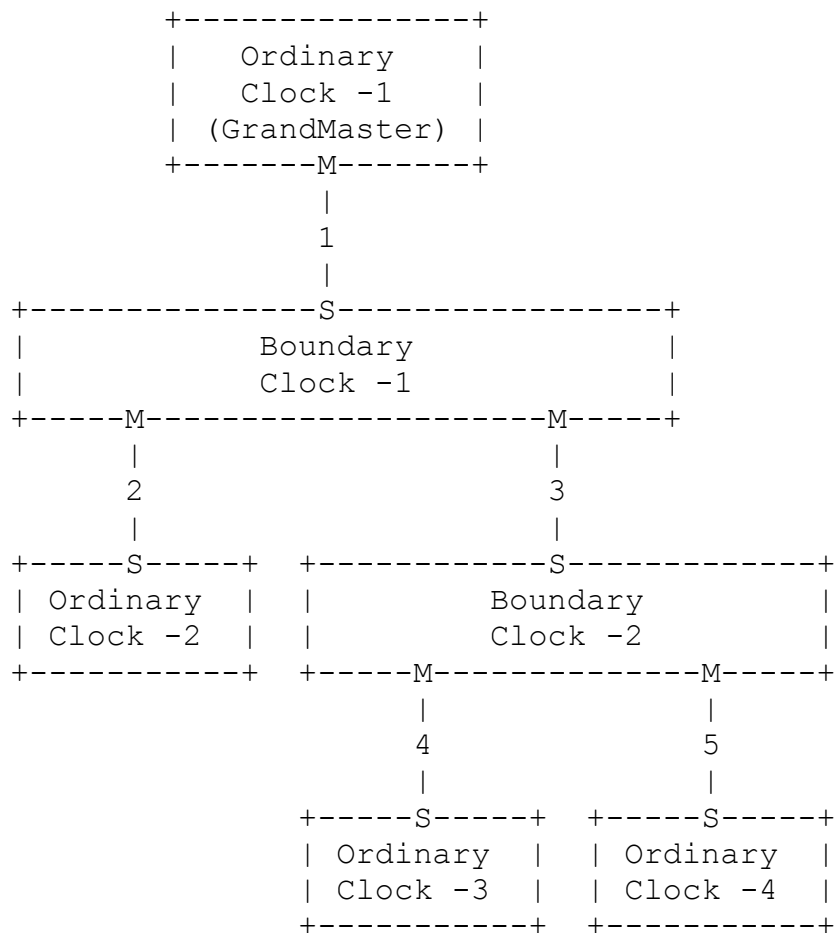
**Two-step clock:**

A clock that provides time information using the combination of an event message and a subsequent general message.

The below table specifies the object formats of the various textual conventions used.

Data type mapping	Textual Convention	SYNTAX
5.3.2 TimeInterval	ClockTimeInterval	OCTET STRING(SIZE(1..255))
5.3.3 Timestamp	ClockTimestamp	OCTET STRING(SIZE(6))
5.3.4 ClockIdentity	ClockIdentity	OCTET STRING(SIZE(1..255))
5.3.5 PortIdentity	ClockPortNumber	INTEGER(1..65535)
5.3.7 ClockQuality	ClockQualityClassType	

Simple master-slave hierarchy, section 6.6.2.4 [IEEE 1588-2008]:



Grandmaster

Boundary Clock(0-N) Ordinary Clocks(0-N)

Ordinary Clocks(0-N)

Relationship cardinality:

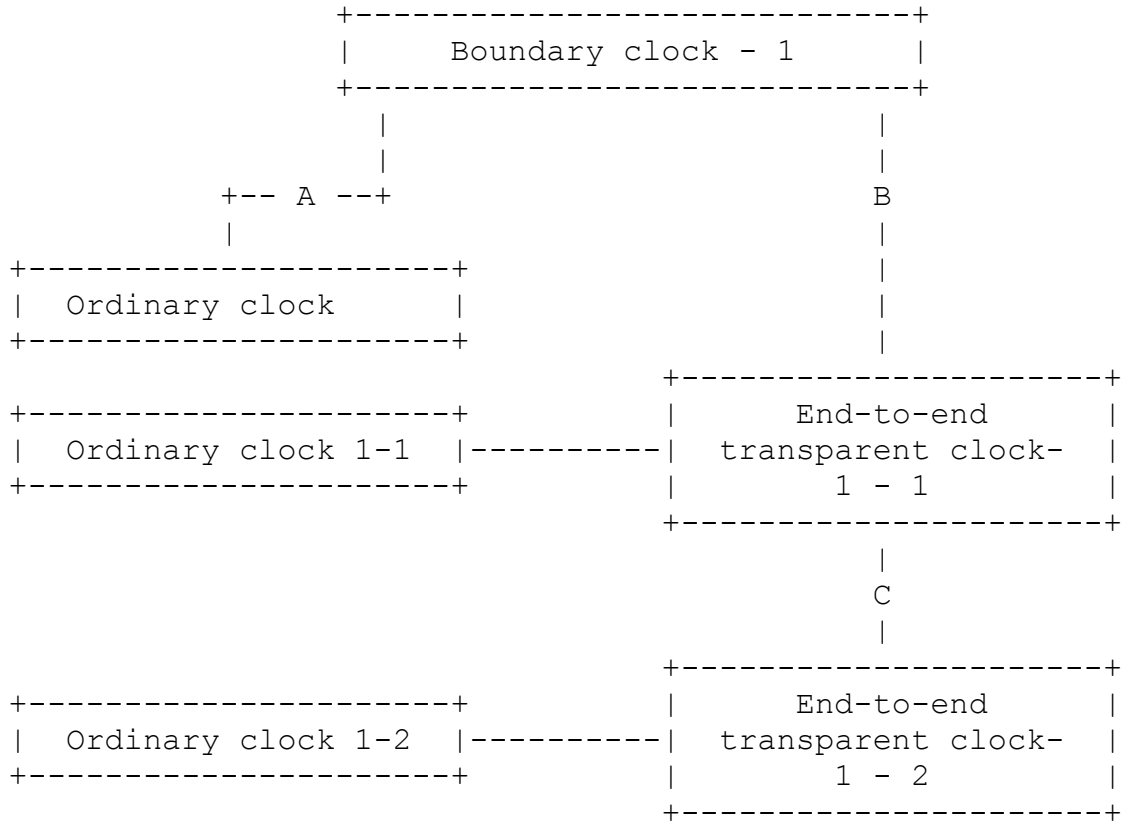
PTP system 1 : N PTP Clocks

PTP Clock 1 : 1 Domain

PTP Clock 1 : N PTP Ports

PTP Ports N : M Physical Ports (interface in IF-MIB)

Transparent clock diagram, section 6.7.1.3 of [IEEE 1588-2008]:



The MIB refers to the sections of [IEEE 1588-2008]."

-- revision log

::= { mib-2 XXX } -- XXX to be assigned by IANA

-- Textual Conventions

ClockDomainType ::= TEXTUAL-CONVENTION

DISPLAY-HINT "d"

STATUS current

DESCRIPTION

"The Domain is identified by an integer, the domainNumber, in the range of 0 to 255. An integer value that is used to assign each PTP device to a particular domain. The following values

define the valid domains.

Value	Definition
-----	-----
0	Default domain
1	Alternate domain 1
2	Alternate domain 2
3	Alternate domain 3
4 - 127	User-defined domains
128 - 255	Reserved"

REFERENCE "Section 7.1 Domains, Table 2 of [IEEE 1588-2008]"

SYNTAX Unsigned32 (0..255)

ClockIdentity ::= TEXTUAL-CONVENTION

DISPLAY-HINT "255a"

STATUS current

DESCRIPTION

"The clock Identity is an 8-octet array and will be presented in the form of a character array. Network byte order is assumed.

The value of the ClockIdentity should be taken from the IEEE EUI-64 individual assigned numbers as indicated in Section 7.5.2.2.2 of [IEEE 1588-2008].

The EUI-64 address is divided into the following fields:

OUI bytes (0-2)

Extension identifier bytes (3-7)

The clock identifier can be constructed from existing EUI-48 assignments and here is an abbreviated example extracted from section 7.5.2.2.2 [IEEE 1588-2008].

Company EUI-48 = 0xACDE4823456716

EUI-64 = ACDE48FFFE23456716

It is important to note the IEEE Registration Authority has deprecated the use of MAC-48 in any new design."

REFERENCE "Section 7.5.2.2.1 of [IEEE 1588-2008]"

SYNTAX OCTET STRING (SIZE (1..255))



ClockInstanceType ::= TEXTUAL-CONVENTION

DISPLAY-HINT "d"

STATUS current

DESCRIPTION

"The instance of the Clock of a given clock type in a given domain."

SYNTAX Unsigned32 (0..255)

ClockIntervalBase2 ::= TEXTUAL-CONVENTION

DISPLAY-HINT "d"

STATUS current

DESCRIPTION

"The interval included in message types Announce, Sync, Delay\_Req, and Pdelay\_Req as indicated in section 7.7.2.1 of [IEEE 1588-2008].

The mean time interval between successive messages shall be represented as the logarithm to the base 2 of this time interval measured in seconds on the local clock of the device sending the message. The values of these logarithmic attributes shall be selected from integers in the range -128 to 127 subject to further limits established in an applicable PTP profile."

REFERENCE "Section 7.7.2.1 General interval specification of [IEEE 1588-2008]"

SYNTAX Integer32 (-128..127)

ClockMechanismType ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"The clock type based on whether End to End or peer to peer mechanisms are used. The mechanism used to calculate the Mean Path Delay as indicated in Table 9 of [IEEE 1588-2008].

Delay mechanism	Value(hex)	Specification
-----	-----	-----
E2E	01	The port is configured to use the delay request-response mechanism.
P2P	02	The port is configured to use the peer delay mechanism.
DISABLED	FE	The port does not implement the delay mechanism."

REFERENCE "Sections 8.2.5.4.4, 6.6.4, 7.4.2 of [IEEE 1588-2008]."

SYNTAX INTEGER {  
     e2e(1),  
     p2p(2),  
     disabled(254)  
 }

ClockPortNumber ::= TEXTUAL-CONVENTION

DISPLAY-HINT "d"

STATUS current

DESCRIPTION

"An index identifying a specific Precision Time Protocol (PTP) port on a PTP node."

REFERENCE "Sections 7.5.2.3 and 5.3.5 of [IEEE 1588-2008]"

SYNTAX Unsigned32 (0..65535)

ClockPortState ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"This is the value of the current state of the protocol engine associated with this port.

Port state	Value	Description
initializing	1	In this state a port initializes its data sets, hardware, and communication facilities.
faulty	2	The fault state of the protocol.
disabled	3	The port shall not place any messages on its communication path.
listening	4	The port is waiting for the announceReceiptTimeout to expire or to receive an Announce message from a master.
preMaster	5	The port shall behave in all respects as though it were in the MASTER state except that it shall not place any messages on its communication path except for Pdelay_Req, Pdelay_Resp, Pdelay_Resp_Follow_Up, signaling, or management messages.
master	6	The port is behaving as a master port.
passive	7	The port shall not place any messages

on its communication path except for Pdelay\_Req, Pdelay\_Resp, Pdelay\_Resp\_Follow\_Up, or signaling messages, or management messages that are a required response to another management message

uncalibrated	8	The local port is preparing to synchronize to the master port.
slave	9	The port is synchronizing to the selected master port."

REFERENCE "Section 8.2.5.3.1 portState and 9.2.5 of [IEEE 1588-2008]"

SYNTAX INTEGER {  
initializing(1),  
faulty(2),  
disabled(3),  
listening(4),  
preMaster(5),  
master(6),  
passive(7),  
uncalibrated(8),  
slave(9)  
}

ClockPortTransportTypeAddress ::= TEXTUAL-CONVENTION

DISPLAY-HINT "255a"  
STATUS current  
DESCRIPTION

"The Clock port transport protocol address used for this communication between the clock nodes. This is a string corresponding to the address type as specified by the Transport type used. The transport types can be defined elsewhere, in addition to the ones defined in this document. This can be address of type IP version 4, IP version 6, Ethernet, DeviceNET, ControlNET and IEC61158."

REFERENCE "Annex D (IPv4), Annex E (IPv6), Annex F (Ethernet), Annex G (DeviceNET), Annex H (ControlNET) and Annex I (IEC61158) of [IEEE 1588-2008]"

SYNTAX OCTET STRING (SIZE (1..255))

ClockProfileType ::= TEXTUAL-CONVENTION

STATUS current  
DESCRIPTION  
"Clock Profile used. A profile is the set of allowed Precision Time Protocol (PTP) features applicable to a device."  
REFERENCE "Section 3.1.30 and 19.3 PTP profiles of [IEEE 1588-2008]"  
SYNTAX INTEGER {  
    default(1),  
    telecom(2),  
    vendorspecific(3)  
}

ClockQualityAccuracyType ::= TEXTUAL-CONVENTION

STATUS current  
DESCRIPTION  
"The ClockQuality as specified in section 5.3.7, 7.6.2.5 and Table 6 of [IEEE 1588-2008].

The following values are not represented in the enumerated values.

0x01-0x1F Reserved  
0x32-0x7F Reserved

It is important to note that section 7.1.1 RFC2578 allows for gaps and enumerate values to start with zero when indicated by the protocol."

REFERENCE "Section 5.3.7, 7.6.2.5 and Table 6 of [IEEE 1588-2008]"  
SYNTAX INTEGER {  
    reserved00(0:31), -- 0x00 to 0x1F  
    nanoSecond25(32), -- 0x20  
    nanoSecond100(33), -- 0x21  
    nanoSecond250(34), -- 0x22  
    microSec1(35), -- 0x23  
    microSec2dot5(36), -- 0x24  
    microSec10(37), -- 0x25  
    microSec25(38), -- 0x26  
    microSec100(39), -- 0x27  
    microSec250(40), -- 0x28  
    milliSec1(41), -- 0x29

```

        milliSec2dot5(42),    -- 0x2A
        milliSec10(43),      -- 0x2B
        milliSec25(44),      -- 0x2C
        milliSec100(45),     -- 0x2D
        milliSec250(46),     -- 0x2E
        second1(47),         -- 0x2F
        second10(48),        -- 0x30
        secondGreater10(49), -- 0x31
        unknown(254),        -- 0xFE
        reserved255(255)     -- 0xFF
    }

```

ClockQualityClassType ::= TEXTUAL-CONVENTION

```

    DISPLAY-HINT    "d"
    STATUS          current
    DESCRIPTION

```

"The ClockQuality as specified in section 5.3.7, 7.6.2.4 and Table 5 of [IEEE 1588-2008].

Value	Description
0	Reserved to enable compatibility with future versions.
1-5	Reserved
6	Shall designate a clock that is synchronized to a primary reference time source. The timescale distributed shall be PTP. A clockClass 6 clock shall not be a slave to another clock in the domain.
7	Shall designate a clock that has previously been designated as clockClass 6 but that has lost the ability to synchronize to a primary reference time source and is in holdover mode and within holdover specifications. The timescale distributed shall be PTP. A clockClass 7 clock shall not be a slave to another clock in the domain.
8	Reserved.
9-10	Reserved to enable compatibility with future versions.
11-12	Reserved.
13	Shall designate a clock that is synchronized to an application-specific source of time.

- The timescale distributed shall be ARB. A clockClass 13 clock shall not be a slave to another clock in the domain.
- 14 Shall designate a clock that has previously been designated as clockClass 13 but that has lost the ability to synchronize to an application-specific source of time and is in holdover mode and within holdover specifications. The timescale distributed shall be ARB. A clockClass 14 clock shall not be a slave to another clock in the domain.
- 15-51 Reserved.
- 52 Degradation alternative A for a clock of clockClass 7 that is not within holdover specification. A clock of clockClass 52 shall not be a slave to another clock in the domain.
- 53-57 Reserved.
- 58 Degradation alternative A for a clock of clockClass 14 that is not within holdover specification. A clock of clockClass 58 shall not be a slave to another clock in the domain.
- 59-67 Reserved.
- 68-122 For use by alternate PTP profiles.
- 123-127 Reserved.
- 128-132 Reserved.
- 133-170 For use by alternate PTP profiles.
- 171-186 Reserved.
- 187 Degradation alternative B for a clock of clockClass 7 that is not within holdover specification. A clock of clockClass 187 may be a slave to another clock in the domain.
- 188-192 Reserved.
- 193 Degradation alternative B for a clock of clockClass 14 that is not within holdover specification. A clock of clockClass 193 may be a slave to another clock in the domain.
- 194-215 Reserved.
- 216-232 For use by alternate PTP profiles.
- 233-247 Reserved.
- 248 Default. This clockClass shall be used if none of the other clockClass definitions apply.

249-250 Reserved.  
 251 Reserved for version 1 compatibility; see Clause 18.  
 252-254 Reserved.  
 255 Shall be the clockClass of a slave-only clock; see 9.2.2."

REFERENCE "Section 5.3.7, 7.6.2.4 and Table 5 of [IEEE 1588-2008]."

SYNTAX Unsigned32 (0..255)

ClockRoleType ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"The Clock Role. The protocol generates a Master Slave relationship among the clocks in the system.

Clock Role	Value	Description
Master clock	1	A clock that is the source of time to which all other clocks on that path synchronize.
Slave clock	2	A clock which synchronizes to another clock (master)."

SYNTAX INTEGER {  
 master(1),  
 slave(2)  
 }

ClockStateType ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"The clock state returned by PTP engine.

Clock State	Value	Description
Freerun state	1	Applies to a slave device that is not locked to a master. This is the initial state a slave starts out with when it is not getting any PTP packets from the master or because of some other input error (erroneous packets, etc).

- Holdover state 2 In this state the slave device is locked to a master but communication with the master has been lost or the timestamps in the ptp packets are incorrect. Since the slave was locked to the master, it can run in this state, with similar accuracy for some time. If communication with the master is not restored for an extended period (dependent on the clock implementation), the device should move to the FREERUN state.
- Acquiring state 3 The slave device is receiving packets from a master and is trying to acquire a lock.
- Freq\_locked state 4 Slave device is locked to the Master with respect to frequency, but not phase aligned
- Phase\_aligned state 5 Locked to the master with respect to frequency and phase."

```
SYNTAX          INTEGER {
                    freerun(1),
                    holdover(2),
                    acquiring(3),
                    frequencyLocked(4),
                    phaseAligned(5)
                }
```

ClockTimeInterval ::= TEXTUAL-CONVENTION

```
DISPLAY-HINT    "255a"
STATUS          current
DESCRIPTION
```

"This textual convention corresponds to the TimeInterval structure indicated in section 5.3.2 of [IEEE 1588-2008]. It will be presented in the form of a character array. Network byte order is assumed.

The TimeInterval type represents time intervals.

```
struct TimeInterval
```



```
{
    Integer64 scaledNanoseconds;
};
```

The scaledNanoseconds member is the time interval expressed in units of nanoseconds and multiplied by 2\*\*16.

Positive or negative time intervals outside the maximum range of this data type shall be encoded as the largest positive and negative values of the data type, respectively.

For example, 2.5 ns is expressed as 0000 0000 0002 8000 in Base16."

#### REFERENCE

"Section 5.3.2 and section 7.7.2.1 Timer interval specification of [IEEE 1588-2008]"

SYNTAX OCTET STRING (SIZE (1..255))

ClockTimeSourceType ::= TEXTUAL-CONVENTION

STATUS current

#### DESCRIPTION

"The ClockQuality as specified in section 5.3.7, 7.6.2.6 and Table 7 of [IEEE 1588-2008].

The following values are not represented in the enumerated values.

0xF0-0xFE For use by alternate PTP profiles

0xFF Reserved

It is important to note that section 7.1.1 RFC2578 allows for gaps and enumerate values to start with zero when indicated by the protocol."

REFERENCE "Section 5.3.7, 7.6.2.6 and Table 7 of [IEEE 1588-2008]."

SYNTAX INTEGER {  
 atomicClock(16), -- 0x10  
 gps(32), -- 0x20  
 terrestrialRadio(48), -- 0x22  
 ptp(64), -- 0x40  
 ntp(80), -- 0x50

```
        handSet(96), -- 0x60
        other(144), -- 0x90
        internalOscillator(160) -- 0xA0
    }
```

ClockTxModeType ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"Transmission mode.

Unicast: Using unicast communication channel.

Multicast: Using Multicast communication channel.

multicast-mix: Using multicast-unicast communication channel"

SYNTAX INTEGER {  
 unicast(1),  
 multicast(2),  
 multicastmix(3)  
}

ClockType ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"The clock types as defined in the MIB module description."

REFERENCE "Section 6.5.1 of [IEEE 1588-2008]."

SYNTAX INTEGER {  
 ordinaryClock(1),  
 boundaryClock(2),  
 transparentClock(3),  
 boundaryNode(4)  
}

ptpbaseMIBNotifs OBJECT IDENTIFIER

::= { ptpbaseMIB 0 }

ptpbaseMIBObjects OBJECT IDENTIFIER

::= { ptpbaseMIB 1 }

ptpbaseMIBConformance OBJECT IDENTIFIER

::= { ptpbaseMIB 2 }

ptpbaseMIBSystemInfo OBJECT IDENTIFIER

::= { ptpbaseMIBObjects 1 }

```
ptpbasesMIBClockInfo OBJECT IDENTIFIER
 ::= { ptpbasesMIBObjects 2 }
```

```
ptpbasesSystemTable OBJECT-TYPE
 SYNTAX          SEQUENCE OF PtpbasesSystemEntry
 MAX-ACCESS      not-accessible
 STATUS          current
 DESCRIPTION
   "Table of count information about the PTP system for all
   domains."
 ::= { ptpbasesMIBSystemInfo 1 }
```

```
ptpbasesSystemEntry OBJECT-TYPE
 SYNTAX          PtpbasesSystemEntry
 MAX-ACCESS      not-accessible
 STATUS          current
 DESCRIPTION
   "An entry in the table, containing count information about a
   single domain. New row entries are added when the PTP clock for
   this domain is configured, while the unconfiguration of the PTP
   clock removes it."
 INDEX          {
                ptpDomainIndex,
                ptpInstanceIndex
              }
 ::= { ptpbasesSystemTable 1 }
```

```
PtpbasesSystemEntry ::= SEQUENCE {
    ptpDomainIndex          ClockDomainType,
    ptpInstanceIndex        ClockInstanceType,
    ptpDomainClockPortsTotal Gauge32
}
```

```
ptpDomainIndex OBJECT-TYPE
 SYNTAX          ClockDomainType
 MAX-ACCESS      not-accessible
 STATUS          current
 DESCRIPTION
   "This object specifies the domain number used to create logical
   group of PTP devices. The Clock Domain is a logical group of
   clocks and devices that synchronize with each other using the
```

PTP protocol.

0           Default domain  
1           Alternate domain 1  
2           Alternate domain 2  
3           Alternate domain 3  
4 - 127     User-defined domains  
128 - 255   Reserved"

::= { ptpbaseSystemEntry 1 }

ptpInstanceIndex OBJECT-TYPE

SYNTAX           ClockInstanceType

MAX-ACCESS       not-accessible

STATUS           current

DESCRIPTION

"This object specifies the instance of the Clock for this domain."

::= { ptpbaseSystemEntry 2 }

ptpDomainClockPortsTotal OBJECT-TYPE

SYNTAX           Gauge32

UNITS            "ptp ports"

MAX-ACCESS       read-only

STATUS           current

DESCRIPTION

"This object specifies the total number of clock ports configured within a domain in the system."

::= { ptpbaseSystemEntry 3 }

ptpbaseSystemDomainTable OBJECT-TYPE

SYNTAX           SEQUENCE OF PtpbaseSystemDomainEntry

MAX-ACCESS       not-accessible

STATUS           current

DESCRIPTION

"Table of information about the PTP system for all clock modes -- ordinary, boundary or transparent."

::= { ptpbaseMIBSystemInfo 2 }

ptpbaseSystemDomainEntry OBJECT-TYPE

SYNTAX           PtpbaseSystemDomainEntry

MAX-ACCESS       not-accessible

```
STATUS          current
DESCRIPTION
    "An entry in the table, containing information about a single
    clock mode for the PTP system. A row entry gets added when PTP
    clocks are configured on the router."
INDEX           { ptpbaseSystemDomainClockTypeIndex }
 ::= { ptpbaseSystemDomainTable 1 }
```

```
PtpbaseSystemDomainEntry ::= SEQUENCE {
    ptpbaseSystemDomainClockTypeIndex ClockType,
    ptpbaseSystemDomainTotals         Unsigned32
}
```

```
ptpbaseSystemDomainClockTypeIndex OBJECT-TYPE
SYNTAX          ClockType
MAX-ACCESS      not-accessible
STATUS          current
DESCRIPTION
    "This object specifies the clock type as defined in the
    Textual convention description."
 ::= { ptpbaseSystemDomainEntry 1 }
```

```
ptpbaseSystemDomainTotals OBJECT-TYPE
SYNTAX          Unsigned32
UNITS           "domains"
MAX-ACCESS      read-only
STATUS          current
DESCRIPTION
    "This object specifies the total number of PTP domains for this
    particular clock type configured in this node."
 ::= { ptpbaseSystemDomainEntry 2 }
```

```
ptpbaseSystemProfile OBJECT-TYPE
SYNTAX          ClockProfileType
MAX-ACCESS      read-only
STATUS          current
DESCRIPTION
    "This object specifies the PTP Profile implemented on the
    system."
REFERENCE       "Section 19.3 PTP profiles of [IEEE 1588-2008]"
 ::= { ptpbaseMIBSystemInfo 3 }
```

## ptpbasedClockCurrentDSTable OBJECT-TYPE

SYNTAX SEQUENCE OF PtpbasedClockCurrentDSEntry

MAX-ACCESS not-accessible

STATUS current

## DESCRIPTION

"Table of information about the PTP clock Current Datasets for all domains."

::= { ptpbasedMIBClockInfo 1 }

## ptpbasedClockCurrentDSEntry OBJECT-TYPE

SYNTAX PtpbasedClockCurrentDSEntry

MAX-ACCESS not-accessible

STATUS current

## DESCRIPTION

"An entry in the table, containing information about a single PTP clock Current Datasets for a domain."

## REFERENCE

"1588 Version 2.0 Section 8.2.2 currentDS data set member specifications of [IEEE 1588-2008]"

INDEX {  
    ptpbasedClockCurrentDSDomainIndex,  
    ptpbasedClockCurrentDSClockTypeIndex,  
    ptpbasedClockCurrentDSInstanceIndex  
}

::= { ptpbasedClockCurrentDSTable 1 }

PtpbasedClockCurrentDSEntry ::= SEQUENCE {

ptpbasedClockCurrentDSDomainIndex	ClockDomainType,
ptpbasedClockCurrentDSClockTypeIndex	ClockType,
ptpbasedClockCurrentDSInstanceIndex	ClockInstanceType,
ptpbasedClockCurrentDSStepsRemoved	Unsigned32,
ptpbasedClockCurrentDSOffsetFromMaster	ClockTimeInterval,
ptpbasedClockCurrentDSMeanPathDelay	ClockTimeInterval

}

## ptpbasedClockCurrentDSDomainIndex OBJECT-TYPE

SYNTAX ClockDomainType

MAX-ACCESS not-accessible

STATUS current

## DESCRIPTION

"This object specifies the domain number used to create logical group of PTP devices."

```
::= { ptpbaseClockCurrentDSEntry 1 }
```

```
ptpbaseClockCurrentDSClockTypeIndex OBJECT-TYPE
```

```
SYNTAX          ClockType
MAX-ACCESS      not-accessible
STATUS          current
```

```
DESCRIPTION
```

```
"This object specifies the clock type as defined in the
Textual convention description."
```

```
::= { ptpbaseClockCurrentDSEntry 2 }
```

```
ptpbaseClockCurrentDSInstanceIndex OBJECT-TYPE
```

```
SYNTAX          ClockInstanceType
MAX-ACCESS      not-accessible
STATUS          current
```

```
DESCRIPTION
```

```
"This object specifies the instance of the clock for this clock
type in the given domain."
```

```
::= { ptpbaseClockCurrentDSEntry 3 }
```

```
ptpbaseClockCurrentDSStepsRemoved OBJECT-TYPE
```

```
SYNTAX          Unsigned32
UNITS           "Steps"
MAX-ACCESS      read-only
STATUS          current
```

```
DESCRIPTION
```

```
"The current clock dataset StepsRemoved value.
```

```
This object specifies the distance measured by the number of
Boundary clocks between the local clock and the Foreign master
as indicated in the stepsRemoved field of Announce messages."
```

```
REFERENCE      "1588 Version 2.0 Section 8.2.2.2 stepsRemoved"
```

```
::= { ptpbaseClockCurrentDSEntry 4 }
```

```
ptpbaseClockCurrentDSOffsetFromMaster OBJECT-TYPE
```

```
SYNTAX          ClockTimeInterval
UNITS           "Time Interval"
MAX-ACCESS      read-only
STATUS          current
```

```
DESCRIPTION
```

```
"This object specifies the current clock dataset ClockOffset
value. The value of the computation of the offset in time
between a slave and a master clock."
```

REFERENCE "1588 Version 2.0 Section 8.2.2.3 of  
[IEEE 1588-2008]"  
 ::= { ptpbaseClockCurrentDSEntry 5 }

ptpbaseClockCurrentDSMeanPathDelay OBJECT-TYPE

SYNTAX ClockTimeInterval

UNITS "Time Interval"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object specifies the current clock dataset  
MeanPathDelay value.

The mean path delay between a pair of ports as measure by the  
delay request-response mechanism."

REFERENCE "1588 Version 2.0 Section 8.2.2.4 mean path delay"  
 ::= { ptpbaseClockCurrentDSEntry 6 }

ptpbaseClockParentDSTable OBJECT-TYPE

SYNTAX SEQUENCE OF PtpbaseClockParentDSEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"Table of information about the PTP clock Parent Datasets for  
all domains."

::= { ptpbaseMIBClockInfo 2 }

ptpbaseClockParentDSEntry OBJECT-TYPE

SYNTAX PtpbaseClockParentDSEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"An entry in the table, containing information about a single  
PTP clock Parent Datasets for a domain."

REFERENCE

"Section 8.2.3 parentDS data set member specifications of  
[IEEE 1588-2008]"

INDEX {  
 ptpbaseClockParentDSDomainIndex,  
 ptpbaseClockParentDSClockTypeIndex,  
 ptpbaseClockParentDSInstanceIndex



```

    }
    ::= { ptpbaseClockParentDSTable 1 }

PtpbaseClockParentDSEntry ::= SEQUENCE {
    ptpbaseClockParentDSDomainIndex      ClockDomainType,
    ptpbaseClockParentDSClockTypeIndex   ClockType,
    ptpbaseClockParentDSInstanceIndex    ClockInstanceType,
    ptpbaseClockParentDSParentPortIdentity OCTET STRING,
    ptpbaseClockParentDSParentStats      TruthValue,
    ptpbaseClockParentDSOffset           ClockIntervalBase2,
    ptpbaseClockParentDSClockPhChRate    Integer32,
    ptpbaseClockParentDSGMClockIdentity  ClockIdentity,
    ptpbaseClockParentDSGMClockPriority1  Unsigned32,
    ptpbaseClockParentDSGMClockPriority2  Unsigned32,
    ptpbaseClockParentDSGMClockQualityClass ClockQualityClassType,
    ptpbaseClockParentDSGMClockQualityAccuracy ClockQualityAccuracyType,
    ptpbaseClockParentDSGMClockQualityOffset Unsigned32
}

```

```

ptpbaseClockParentDSDomainIndex OBJECT-TYPE
    SYNTAX      ClockDomainType
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object specifies the domain number used to create logical
        group of PTP devices."
    ::= { ptpbaseClockParentDSEntry 1 }

```

```

ptpbaseClockParentDSClockTypeIndex OBJECT-TYPE
    SYNTAX      ClockType
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object specifies the clock type as defined in the
        Textual convention description."
    ::= { ptpbaseClockParentDSEntry 2 }

```

```

ptpbaseClockParentDSInstanceIndex OBJECT-TYPE
    SYNTAX      ClockInstanceType
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object specifies the instance of the clock for this clock

```

type in the given domain."

::= { ptpbaseClockParentDSEntry 3 }

ptpbaseClockParentDSParentPortIdentity OBJECT-TYPE

SYNTAX OCTET STRING(SIZE(1..256))

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object specifies the value of portIdentity of the port on the master that issues the Sync messages used in synchronizing this clock."

REFERENCE

"Section 8.2.3.2 parentDS.parentPortIdentity of [IEEE 1588-2008]"

::= { ptpbaseClockParentDSEntry 4 }

ptpbaseClockParentDSParentStats OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object specifies the Parent Dataset ParentStats value.

This value indicates whether the values of ParentDSOffset and ParentDSClockPhChRate have been measured and are valid. A TRUE value shall indicate valid data."

REFERENCE "Section 8.2.3.3 parentDS.parentStats of [IEEE 1588-2008]"

::= { ptpbaseClockParentDSEntry 5 }

ptpbaseClockParentDSOffset OBJECT-TYPE

SYNTAX ClockIntervalBase2 (-128..127)

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object specifies the Parent Dataset ParentOffsetScaledLogVariance value.

This value is the variance of the parent clocks phase as measured by the local clock."

REFERENCE

"Section 8.2.3.4 parentDS.observedParentOffsetScaledLogVariance

```
[IEEE 1588-2008]"  
 ::= { ptpbaseClockParentDSEntry 6 }
```

ptpbaseClockParentDSClockPhChRate OBJECT-TYPE

```
SYNTAX          Integer32  
MAX-ACCESS      read-only  
STATUS          current
```

DESCRIPTION

"This object specifies the clock's parent dataset  
ParentClockPhaseChangeRate value.

This value is an estimate of the parent clocks phase change  
rate as measured by the slave clock."

REFERENCE

"Section 8.2.3.5  
parentDS.observedParentClockPhaseChangeRate of  
[IEEE 1588-2008]"

```
 ::= { ptpbaseClockParentDSEntry 7 }
```

ptpbaseClockParentDSGMClockIdentity OBJECT-TYPE

```
SYNTAX          ClockIdentity  
MAX-ACCESS      read-only  
STATUS          current
```

DESCRIPTION

"This object specifies the parent dataset Grandmaster clock  
identity."

REFERENCE

"Section 8.2.3.6 parentDS.grandmasterIdentity of  
[IEEE 1588-2008]"

```
 ::= { ptpbaseClockParentDSEntry 8 }
```

ptpbaseClockParentDSGMClockPriority1 OBJECT-TYPE

```
SYNTAX          Unsigned32  
MAX-ACCESS      read-only  
STATUS          current
```

DESCRIPTION

"This object specifies the parent dataset Grandmaster clock  
priority1."

REFERENCE

"Section 8.2.3.8 parentDS.grandmasterPriority1 of  
[IEEE 1588-2008]"

```
 ::= { ptpbaseClockParentDSEntry 9 }
```

```
ptpbaseClockParentDSGMClockPriority2 OBJECT-TYPE
    SYNTAX          Unsigned32
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "This object specifies the parent dataset grandmaster clock
        priority2."
    REFERENCE
        "Section 8.2.3.9 parentDS.grandmasterPriority2 of
        [IEEE 1588-2008]"
    ::= { ptpbaseClockParentDSEntry 10 }

ptpbaseClockParentDSGMClockQualityClass OBJECT-TYPE
    SYNTAX          ClockQualityClassType (0..255)
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "This object specifies the parent dataset grandmaster clock
        quality class."
    REFERENCE
        "Section 8.2.3.7 parentDS.grandmasterClockQuality of
        [IEEE 1588-2008]"
    ::= { ptpbaseClockParentDSEntry 11 }

ptpbaseClockParentDSGMClockQualityAccuracy OBJECT-TYPE
    SYNTAX          ClockQualityAccuracyType
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "This object specifies the parent dataset grandmaster clock
        quality accuracy."
    REFERENCE
        "Section 8.2.3.7 parentDS.grandmasterClockQuality of
        [IEEE 1588-2008]"
    ::= { ptpbaseClockParentDSEntry 12 }

ptpbaseClockParentDSGMClockQualityOffset OBJECT-TYPE
    SYNTAX          Unsigned32
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "This object specifies the parent dataset grandmaster clock
        quality offset."
```

## REFERENCE

"Section 8.2.3.7 parentDS.grandmasterClockQuality of  
[IEEE 1588-2008]"

::= { ptpbaseClockParentDSEntry 13 }

## ptpbaseClockDefaultDSTable OBJECT-TYPE

SYNTAX SEQUENCE OF PtpbaseClockDefaultDSEntry

MAX-ACCESS not-accessible

STATUS current

## DESCRIPTION

"Table of information about the PTP clock Default Datasets for  
all domains."

::= { ptpbaseMIBClockInfo 3 }

## ptpbaseClockDefaultDSEntry OBJECT-TYPE

SYNTAX PtpbaseClockDefaultDSEntry

MAX-ACCESS not-accessible

STATUS current

## DESCRIPTION

"An entry in the table, containing information about a single  
PTP clock Default Datasets for a domain."

INDEX {  
    ptpbaseClockDefaultDSDomainIndex,  
    ptpbaseClockDefaultDSClockTypeIndex,  
    ptpbaseClockDefaultDSInstanceIndex  
}

::= { ptpbaseClockDefaultDSTable 1 }

PtpbaseClockDefaultDSEntry ::= SEQUENCE {

    ptpbaseClockDefaultDSDomainIndex ClockDomainType,

    ptpbaseClockDefaultDSClockTypeIndex ClockType,

    ptpbaseClockDefaultDSInstanceIndex ClockInstanceType,

    ptpbaseClockDefaultDSTwoStepFlag TruthValue,

    ptpbaseClockDefaultDSClockIdentity ClockIdentity,

    ptpbaseClockDefaultDSPriority1 Unsigned32,

    ptpbaseClockDefaultDSPriority2 Unsigned32,

    ptpbaseClockDefaultDSSlaveOnly TruthValue,

    ptpbaseClockDefaultDSQualityClass ClockQualityClassType,

    ptpbaseClockDefaultDSQualityAccuracy ClockQualityAccuracyType,

    ptpbaseClockDefaultDSQualityOffset Integer32

}

ptpbaseClockDefaultDSDomainIndex OBJECT-TYPE

SYNTAX ClockDomainType

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This object specifies the domain number used to create logical group of PTP devices."

::= { ptpbaseClockDefaultDSEntry 1 }

ptpbaseClockDefaultDSClockTypeIndex OBJECT-TYPE

SYNTAX ClockType

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This object specifies the clock type as defined in the Textual convention description."

::= { ptpbaseClockDefaultDSEntry 2 }

ptpbaseClockDefaultDSInstanceIndex OBJECT-TYPE

SYNTAX ClockInstanceType

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This object specifies the instance of the clock for this clock type in the given domain."

::= { ptpbaseClockDefaultDSEntry 3 }

ptpbaseClockDefaultDSTwoStepFlag OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object specifies whether the Two Step process is used."

::= { ptpbaseClockDefaultDSEntry 4 }

ptpbaseClockDefaultDSClockIdentity OBJECT-TYPE

SYNTAX ClockIdentity

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object specifies the default Datasets clock identity."

::= { ptpbaseClockDefaultDSEntry 5 }

```
ptpbaseClockDefaultDSPriority1 OBJECT-TYPE
    SYNTAX          Unsigned32
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "This object specifies the default Datasets clock Priority1."
    ::= { ptpbaseClockDefaultDSEntry 6 }

ptpbaseClockDefaultDSPriority2 OBJECT-TYPE
    SYNTAX          Unsigned32
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "This object specifies the default Datasets clock Priority2."
    ::= { ptpbaseClockDefaultDSEntry 7 }

ptpbaseClockDefaultDSSlaveOnly OBJECT-TYPE
    SYNTAX          TruthValue
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "Whether the SlaveOnly flag is set."
    ::= { ptpbaseClockDefaultDSEntry 8 }

ptpbaseClockDefaultDSQualityClass OBJECT-TYPE
    SYNTAX          ClockQualityClassType (0..255)
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "This object specifies the default dataset Quality Class."
    ::= { ptpbaseClockDefaultDSEntry 9 }

ptpbaseClockDefaultDSQualityAccuracy OBJECT-TYPE
    SYNTAX          ClockQualityAccuracyType
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "This object specifies the default dataset Quality Accuracy."
    ::= { ptpbaseClockDefaultDSEntry 10 }

ptpbaseClockDefaultDSQualityOffset OBJECT-TYPE
    SYNTAX          Integer32
```

```
MAX-ACCESS      read-only
STATUS          current
DESCRIPTION
    "This object specifies the default dataset Quality offset."
 ::= { ptpbaseClockDefaultDSEntry 11 }
```

```
ptpbaseClockRunningTable OBJECT-TYPE
SYNTAX          SEQUENCE OF PtpbaseClockRunningEntry
MAX-ACCESS      not-accessible
STATUS          current
DESCRIPTION
    "Table of information about the PTP clock Running Datasets for
    all domains."
 ::= { ptpbaseMIBClockInfo 4 }
```

```
ptpbaseClockRunningEntry OBJECT-TYPE
SYNTAX          PtpbaseClockRunningEntry
MAX-ACCESS      not-accessible
STATUS          current
DESCRIPTION
    "An entry in the table, containing information about a single
    PTP clock running Datasets for a domain."
INDEX          {
                ptpbaseClockRunningDomainIndex,
                ptpbaseClockRunningClockTypeIndex,
                ptpbaseClockRunningInstanceIndex
            }
 ::= { ptpbaseClockRunningTable 1 }
```

```
PtpbaseClockRunningEntry ::= SEQUENCE {
    ptpbaseClockRunningDomainIndex      ClockDomainType,
    ptpbaseClockRunningClockTypeIndex  ClockType,
    ptpbaseClockRunningInstanceIndex   ClockInstanceType,
    ptpbaseClockRunningState           ClockStateType,
    ptpbaseClockRunningPacketsSent     Counter64,
    ptpbaseClockRunningPacketsReceived Counter64
}
```

```
ptpbaseClockRunningDomainIndex OBJECT-TYPE
SYNTAX          ClockDomainType
MAX-ACCESS      not-accessible
```



```
STATUS          current
DESCRIPTION
  "This object specifies the domain number used to create logical
  group of PTP devices."
 ::= { ptpbaseClockRunningEntry 1 }
```

ptpbaseClockRunningClockTypeIndex OBJECT-TYPE

```
SYNTAX          ClockType
MAX-ACCESS      not-accessible
STATUS          current
DESCRIPTION
  "This object specifies the clock type as defined in the
  Textual convention description."
 ::= { ptpbaseClockRunningEntry 2 }
```

ptpbaseClockRunningInstanceIndex OBJECT-TYPE

```
SYNTAX          ClockInstanceType
MAX-ACCESS      not-accessible
STATUS          current
DESCRIPTION
  "This object specifies the instance of the clock for this clock
  type in the given domain."
 ::= { ptpbaseClockRunningEntry 3 }
```

ptpbaseClockRunningState OBJECT-TYPE

```
SYNTAX          ClockStateType
MAX-ACCESS      read-only
STATUS          current
DESCRIPTION
  "This object specifies the Clock state returned by PTP engine
  which was described earlier.
```

Freerun state. Applies to a slave device that is not locked to a master. This is the initial state a slave starts out with when it is not getting any PTP packets from the master, or because of some other input error (erroneous packets, etc).

Holdover state. In this state the slave device is locked to a master but communication with the master has been lost or the timestamps in the ptp packets are incorrect. Since the slave was previously locked to the master, it can run in this state, with similar accuracy for some time. If communication with the master is not restored for an extended period

(dependent on the clock implementation), the device should move to the FREERUN state.

Acquiring state. The slave device is receiving packets from a master and is trying to acquire a lock.

Freq\_locked state. Slave device is locked to the Master with respect to frequency, but not phase aligned

Phase\_aligned state. Locked to the master with respect to frequency and phase."

```
::= { ptpbaseClockRunningEntry 4 }
```

ptpbaseClockRunningPacketsSent OBJECT-TYPE

SYNTAX Counter64

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object specifies the total number of all packet Unicast and multicast that have been sent out for this clock in this domain for this type."

```
::= { ptpbaseClockRunningEntry 5 }
```

ptpbaseClockRunningPacketsReceived OBJECT-TYPE

SYNTAX Counter64

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object specifies the total number of all packet Unicast and multicast that have been received for this clock in this domain for this type."

```
::= { ptpbaseClockRunningEntry 6 }
```

ptpbaseClockTimePropertiesDSTable OBJECT-TYPE

SYNTAX SEQUENCE OF PtpbaseClockTimePropertiesDSEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"Table of information about the PTP clock time properties datasets for all domains."

```
::= { ptpbaseMIBClockInfo 5 }
```

## ptpbasedClockTimePropertiesDSEntry OBJECT-TYPE

SYNTAX PtpbasedClockTimePropertiesDSEntry

MAX-ACCESS not-accessible

STATUS current

## DESCRIPTION

"An entry in the table, containing information about a single PTP clock timeproperties Datasets for a domain."

REFERENCE "Section 8.2.4 of [IEEE 1588-2008]"

INDEX {  
    ptpbasedClockTimePropertiesDSDomainIndex,  
    ptpbasedClockTimePropertiesDSClockTypeIndex,  
    ptpbasedClockTimePropertiesDSInstanceIndex  
}

::= { ptpbasedClockTimePropertiesDSTable 1 }

## PtpbasedClockTimePropertiesDSEntry ::= SEQUENCE {

ptpbasedClockTimePropertiesDSDomainIndex	ClockDomainType,
ptpbasedClockTimePropertiesDSClockTypeIndex	ClockType,
ptpbasedClockTimePropertiesDSInstanceIndex	ClockInstanceType,
ptpbasedClockTimePropertiesDSCurrentUTCOffsetValid	TruthValue,
ptpbasedClockTimePropertiesDSCurrentUTCOffset	Integer32,
ptpbasedClockTimePropertiesDSLeap59	TruthValue,
ptpbasedClockTimePropertiesDSLeap61	TruthValue,
ptpbasedClockTimePropertiesDSTimeTraceable	TruthValue,
ptpbasedClockTimePropertiesDSFreqTraceable	TruthValue,
ptpbasedClockTimePropertiesDSPTPTimescale	TruthValue,
ptpbasedClockTimePropertiesDSSource	ClockTimeSourceType

}

## ptpbasedClockTimePropertiesDSDomainIndex OBJECT-TYPE

SYNTAX ClockDomainType

MAX-ACCESS not-accessible

STATUS current

## DESCRIPTION

"This object specifies the domain number used to create logical group of PTP devices."

::= { ptpbasedClockTimePropertiesDSEntry 1 }

## ptpbasedClockTimePropertiesDSClockTypeIndex OBJECT-TYPE

SYNTAX ClockType

MAX-ACCESS not-accessible

STATUS current

## DESCRIPTION

"This object specifies the clock type as defined in the Textual convention description."

::= { ptpbaseClockTimePropertiesDSEntry 2 }

## ptpbaseClockTimePropertiesDSInstanceIndex OBJECT-TYPE

SYNTAX ClockInstanceType

MAX-ACCESS not-accessible

STATUS current

## DESCRIPTION

"This object specifies the instance of the clock for this clock type in the given domain."

::= { ptpbaseClockTimePropertiesDSEntry 3 }

## ptpbaseClockTimePropertiesDSCurrentUTCOffsetValid OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

## DESCRIPTION

"This object specifies the timeproperties dataset value of whether current UTC offset is valid."

REFERENCE "Section 8.2.4.2 of [IEEE 1588-2008]"

::= { ptpbaseClockTimePropertiesDSEntry 4 }

## ptpbaseClockTimePropertiesDSCurrentUTCOffset OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS read-only

STATUS current

## DESCRIPTION

"This object specifies the timeproperties dataset value of current UTC offset."

In PTP systems whose epoch is the PTP epoch, the value of timePropertiesDS.currentUtcOffset is the offset between TAI and UTC; otherwise the value has no meaning. The value shall be in units of seconds.

The initialization value shall be selected as follows:

- a) If the timePropertiesDS.ptpTimescale (see 8.2.4.8) is TRUE, the value is the value obtained from a primary reference if the value is known at the time of initialization, else,
- b) The value shall be the current number of leap seconds (7.2.3) when the node is designed."

REFERENCE "Section 8.2.4.3 of [IEEE 1588-2008]"  
 ::= { ptpbaseClockTimePropertiesDSEntry 5 }

ptpbaseClockTimePropertiesDSLeap59 OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object specifies the Leap59 value in the clock Current Dataset."

REFERENCE "Section 8.2.4.4 of [IEEE 1588-2008]"

::= { ptpbaseClockTimePropertiesDSEntry 6 }

ptpbaseClockTimePropertiesDSLeap61 OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object specifies the Leap61 value in the clock Current Dataset."

REFERENCE "Section 8.2.4.5 of [IEEE 1588-2008]"

::= { ptpbaseClockTimePropertiesDSEntry 7 }

ptpbaseClockTimePropertiesDSTimeTraceable OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object specifies the Timetraceable value in the clock Current Dataset."

REFERENCE "Section 8.2.4.6 of [IEEE 1588-2008]"

::= { ptpbaseClockTimePropertiesDSEntry 8 }

ptpbaseClockTimePropertiesDSFreqTraceable OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object specifies the Frequency Traceable value in the clock Current Dataset."

REFERENCE "Section 8.2.4.7 of [IEEE 1588-2008]"

::= { ptpbaseClockTimePropertiesDSEntry 9 }

## ptpbaseClockTimePropertiesDSPTPTimescale OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

## DESCRIPTION

"This object specifies the PTP Timescale value in the clock Current Dataset."

REFERENCE "Section 8.2.4.8 of [IEEE 1588-2008]"

::= { ptpbaseClockTimePropertiesDSEntry 10 }

## ptpbaseClockTimePropertiesDSSource OBJECT-TYPE

SYNTAX ClockTimeSourceType

MAX-ACCESS read-only

STATUS current

## DESCRIPTION

"This object specifies the Timesource value in the clock Current Dataset."

REFERENCE "Section 8.2.4.9 of [IEEE 1588-2008]"

::= { ptpbaseClockTimePropertiesDSEntry 11 }

## ptpbaseClockTransDefaultDSTable OBJECT-TYPE

SYNTAX SEQUENCE OF PtpbaseClockTransDefaultDSEntry

MAX-ACCESS not-accessible

STATUS current

## DESCRIPTION

"Table of information about the PTP Transparent clock Default Datasets for all domains."

::= { ptpbaseMIBClockInfo 6 }

## ptpbaseClockTransDefaultDSEntry OBJECT-TYPE

SYNTAX PtpbaseClockTransDefaultDSEntry

MAX-ACCESS not-accessible

STATUS current

## DESCRIPTION

"An entry in the table, containing information about a single PTP Transparent clock Default Datasets for a domain."

REFERENCE "Section 8.3.2 of [IEEE 1588-2008]"

INDEX {  
    ptpbaseClockTransDefaultDSDomainIndex,  
    ptpbaseClockTransDefaultDSInstanceIndex  
}

```
::= { ptpbaseClockTransDefaultDSTable 1 }
```

```
PtpbaseClockTransDefaultDSEntry ::= SEQUENCE {  
    ptpbaseClockTransDefaultDSDomainIndex ClockDomainType,  
    ptpbaseClockTransDefaultDSInstanceIndex ClockInstanceType,  
    ptpbaseClockTransDefaultDSClockIdentity ClockIdentity,  
    ptpbaseClockTransDefaultDSNumOfPorts Counter32,  
    ptpbaseClockTransDefaultDSDelay ClockMechanismType,  
    ptpbaseClockTransDefaultDSPrimaryDomain ClockDomainType  
}
```

```
ptpbaseClockTransDefaultDSDomainIndex OBJECT-TYPE
```

```
SYNTAX ClockDomainType
```

```
MAX-ACCESS not-accessible
```

```
STATUS current
```

```
DESCRIPTION
```

```
"This object specifies the domain number used to create logical  
group of PTP devices."
```

```
::= { ptpbaseClockTransDefaultDSEntry 1 }
```

```
ptpbaseClockTransDefaultDSInstanceIndex OBJECT-TYPE
```

```
SYNTAX ClockInstanceType
```

```
MAX-ACCESS not-accessible
```

```
STATUS current
```

```
DESCRIPTION
```

```
"This object specifies the instance of the clock for this clock  
type in the given domain."
```

```
::= { ptpbaseClockTransDefaultDSEntry 2 }
```

```
ptpbaseClockTransDefaultDSClockIdentity OBJECT-TYPE
```

```
SYNTAX ClockIdentity
```

```
MAX-ACCESS read-only
```

```
STATUS current
```

```
DESCRIPTION
```

```
"This object specifies the value of the clockIdentity attribute  
of the local clock."
```

```
REFERENCE "Section 8.3.2.2.1 of [IEEE 1588-2008]"
```

```
::= { ptpbaseClockTransDefaultDSEntry 3 }
```

```
ptpbaseClockTransDefaultDSNumOfPorts OBJECT-TYPE
```

```
SYNTAX Counter32
```

```
MAX-ACCESS read-only
```

```
STATUS current
```

## DESCRIPTION

"This object specifies the number of PTP ports of the device."

REFERENCE "Section 8.3.2.2.2 of [IEEE 1588-2008]"

::= { ptpbaseClockTransDefaultDSEntry 4 }

## ptpbaseClockTransDefaultDSDelay OBJECT-TYPE

SYNTAX ClockMechanismType

MAX-ACCESS read-only

STATUS current

## DESCRIPTION

"This object, if the transparent clock is an end-to-end transparent clock, has the value shall be E2E; If the transparent clock is a peer-to-peer transparent clock, the value shall be P2P."

REFERENCE "Section 8.3.2.3.1 of [IEEE 1588-2008]"

::= { ptpbaseClockTransDefaultDSEntry 5 }

## ptpbaseClockTransDefaultDSPrimaryDomain OBJECT-TYPE

SYNTAX ClockDomainType

MAX-ACCESS read-only

STATUS current

## DESCRIPTION

"This object specifies the value of the primary synchronization domain. The initialization value shall be 0."

REFERENCE "Section 8.3.2.3.2 of [IEEE 1588-2008]"

::= { ptpbaseClockTransDefaultDSEntry 6 }

## ptpbaseClockPortTable OBJECT-TYPE

SYNTAX SEQUENCE OF PtpbaseClockPortEntry

MAX-ACCESS not-accessible

STATUS current

## DESCRIPTION

"Table of information about the clock ports for a particular domain."

::= { ptpbaseMIBClockInfo 7 }

## ptpbaseClockPortEntry OBJECT-TYPE

SYNTAX PtpbaseClockPortEntry

MAX-ACCESS not-accessible

STATUS current



## DESCRIPTION

"An entry in the table, containing information about a single clock port."

```
INDEX          {
                ptpbaseClockPortDomainIndex,
                ptpbaseClockPortClockTypeIndex,
                ptpbaseClockPortClockInstanceIndex,
                ptpbaseClockPortTablePortNumberIndex
            }
```

```
::= { ptpbaseClockPortTable 1 }
```

```
PtpbaseClockPortEntry ::= SEQUENCE {
    ptpbaseClockPortDomainIndex      ClockDomainType,
    ptpbaseClockPortClockTypeIndex   ClockType,
    ptpbaseClockPortClockInstanceIndex ClockInstanceType,
    ptpbaseClockPortTablePortNumberIndex ClockPortNumber,
    ptpbaseClockPortName              DisplayString,
    ptpbaseClockPortRole              ClockRoleType,
    ptpbaseClockPortSyncTwoStep       TruthValue,
    ptpbaseClockPortCurrentPeerAddressType AutonomousType,
    ptpbaseClockPortCurrentPeerAddress
ClockPortTransportTypeAddress,
    ptpbaseClockPortNumOfAssociatedPorts Gauge32
}
```

```
ptpbaseClockPortDomainIndex OBJECT-TYPE
```

```
SYNTAX          ClockDomainType
```

```
MAX-ACCESS      not-accessible
```

```
STATUS          current
```

## DESCRIPTION

"This object specifies the domain number used to create logical group of PTP devices."

```
::= { ptpbaseClockPortEntry 1 }
```

```
ptpbaseClockPortClockTypeIndex OBJECT-TYPE
```

```
SYNTAX          ClockType
```

```
MAX-ACCESS      not-accessible
```

```
STATUS          current
```

## DESCRIPTION

"This object specifies the clock type as defined in the Textual convention description."

```
::= { ptpbaseClockPortEntry 2 }
```

```
ptpbaseClockPortClockInstanceIndex OBJECT-TYPE
    SYNTAX          ClockInstanceType
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION
        "This object specifies the instance of the clock for this clock
        type in the given domain."
    ::= { ptpbaseClockPortEntry 3 }

ptpbaseClockPortTablePortNumberIndex OBJECT-TYPE
    SYNTAX          ClockPortNumber
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION
        "This object specifies the PTP Portnumber for this port."
    ::= { ptpbaseClockPortEntry 4 }

ptpbaseClockPortName OBJECT-TYPE
    SYNTAX          DisplayString (SIZE (1..64))
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "This object specifies the PTP clock port name configured on the
        router."
    ::= { ptpbaseClockPortEntry 5 }

ptpbaseClockPortRole OBJECT-TYPE
    SYNTAX          ClockRoleType
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "This object describes the current role (slave/master) of the
        port."
    ::= { ptpbaseClockPortEntry 6 }

ptpbaseClockPortSyncTwoStep OBJECT-TYPE
    SYNTAX          TruthValue
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "This object specifies that two-step clock operation between
        the PTP master and slave device is enabled."
    ::= { ptpbaseClockPortEntry 7 }
```

ptpbaseClockPortCurrentPeerAddressType OBJECT-TYPE

SYNTAX AutonomousType

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object specifies the current peer's network address type used for PTP communication."

::= { ptpbaseClockPortEntry 8 }

ptpbaseClockPortCurrentPeerAddress OBJECT-TYPE

SYNTAX ClockPortTransportTypeAddress

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object specifies the current peer's network address used for PTP communication."

::= { ptpbaseClockPortEntry 9 }

ptpbaseClockPortNumOfAssociatedPorts OBJECT-TYPE

SYNTAX Gauge32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object specifies -

For a master port - the number of PTP slave sessions (peers) associated with this PTP port.

For a slave port - the number of masters available to this slave port (might or might not be peered)."

::= { ptpbaseClockPortEntry 10 }

ptpbaseClockPortDSTable OBJECT-TYPE

SYNTAX SEQUENCE OF PtpbaseClockPortDSEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"Table of information about the clock ports dataset for a particular domain."

::= { ptpbaseMIBClockInfo 8 }

ptpbaseClockPortDSEntry OBJECT-TYPE

```

SYNTAX          PtpbaseClockPortDSEntry
MAX-ACCESS      not-accessible
STATUS          current
DESCRIPTION     "An entry in the table, containing port dataset information for
                a single clock port."
INDEX          {
                ptpbaseClockPortDSDomainIndex,
                ptpbaseClockPortDSClockTypeIndex,
                ptpbaseClockPortDSClockInstanceIndex,
                ptpbaseClockPortDSPortNumberIndex
                }
 ::= { ptpbaseClockPortDSTable 1 }

```

```

PtpbaseClockPortDSEntry ::= SEQUENCE {
    ptpbaseClockPortDSDomainIndex      ClockDomainType,
    ptpbaseClockPortDSClockTypeIndex   ClockType,
    ptpbaseClockPortDSClockInstanceIndex ClockInstanceType,
    ptpbaseClockPortDSPortNumberIndex  ClockPortNumber,
    ptpbaseClockPortDSName             DisplayString,
    ptpbaseClockPortDSPortIdentity     OCTET STRING,
    ptpbaseClockPortDSlogAnnouncementInterval ClockIntervalBase2,
    ptpbaseClockPortDSAnnounceRctTimeout Integer32,
    ptpbaseClockPortDlogSSyncInterval  ClockIntervalBase2,
    ptpbaseClockPortDSMinDelayReqInterval Integer32,
    ptpbaseClockPortDSPeerDelayReqInterval Integer32,
    ptpbaseClockPortDSDelayMech        ClockMechanismType,
    ptpbaseClockPortDSPeerMeanPathDelay ClockTimeInterval,
    ptpbaseClockPortDSGrantDuration    Unsigned32,
    ptpbaseClockPortDSPTPVersion       Unsigned32
}

```

ptpbaseClockPortDSDomainIndex OBJECT-TYPE

```

SYNTAX          ClockDomainType
MAX-ACCESS      not-accessible
STATUS          current
DESCRIPTION     "This object specifies the domain number used to create logical
                group of PTP devices."
 ::= { ptpbaseClockPortDSEntry 1 }

```

ptpbaseClockPortDSClockTypeIndex OBJECT-TYPE

```

SYNTAX          ClockType

```

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This object specifies the clock type as defined in the  
Textual convention description."

::= { ptpbaseClockPortDSEntry 2 }

ptpbaseClockPortDSClockInstanceIndex OBJECT-TYPE

SYNTAX ClockInstanceType

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This object specifies the instance of the clock for this clock  
type in the given domain."

::= { ptpbaseClockPortDSEntry 3 }

ptpbaseClockPortDSPortNumberIndex OBJECT-TYPE

SYNTAX ClockPortNumber

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This object specifies the PTP portnumber associated with this  
PTP port."

::= { ptpbaseClockPortDSEntry 4 }

ptpbaseClockPortDSName OBJECT-TYPE

SYNTAX DisplayString (SIZE (1..64))

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object specifies the PTP clock port dataset name."

::= { ptpbaseClockPortDSEntry 5 }

ptpbaseClockPortDSPortIdentity OBJECT-TYPE

SYNTAX OCTET STRING (SIZE (1..256))

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object specifies the PTP clock port Identity."

::= { ptpbaseClockPortDSEntry 6 }

ptpbaseClockPortDSlogAnnouncementInterval OBJECT-TYPE

SYNTAX ClockIntervalBase2

```
UNITS          "Time Interval"
MAX-ACCESS     read-only
STATUS         current
DESCRIPTION    "This object specifies the Announce message transmission
               interval associated with this clock port."
 ::= { ptpbaseClockPortDSEntry 7 }
```

```
ptpbaseClockPortDSAnnounceRctTimeout OBJECT-TYPE
SYNTAX         Integer32
MAX-ACCESS     read-only
STATUS         current
DESCRIPTION    "This object specifies the Announce receipt timeout associated
               with this clock port."
 ::= { ptpbaseClockPortDSEntry 8 }
```

```
ptpbaseClockPortDSlogSyncInterval OBJECT-TYPE
SYNTAX         ClockIntervalBase2
UNITS          "Time Interval"
MAX-ACCESS     read-only
STATUS         current
DESCRIPTION    "This object specifies the Sync message transmission interval."
 ::= { ptpbaseClockPortDSEntry 9 }
```

```
ptpbaseClockPortDSMinDelayReqInterval OBJECT-TYPE
SYNTAX         Integer32
MAX-ACCESS     read-only
STATUS         current
DESCRIPTION    "This object specifies the Delay_Req message transmission
               interval."
 ::= { ptpbaseClockPortDSEntry 10 }
```

```
ptpbaseClockPortDSPeerDelayReqInterval OBJECT-TYPE
SYNTAX         Integer32
MAX-ACCESS     read-only
STATUS         current
DESCRIPTION    "This object specifies the Pdelay_Req message transmission
               interval."
 ::= { ptpbaseClockPortDSEntry 11 }
```

## ptpbaseClockPortDSDelayMech OBJECT-TYPE

SYNTAX ClockMechanismType

MAX-ACCESS read-only

STATUS current

## DESCRIPTION

"This object specifies the delay mechanism used. If the clock is an end-to-end clock, the value of the is e2e, else if the clock is a peer to-peer clock, the value shall be p2p."

::= { ptpbaseClockPortDSEntry 12 }

## ptpbaseClockPortDSPeerMeanPathDelay OBJECT-TYPE

SYNTAX ClockTimeInterval

UNITS "Time Interval"

MAX-ACCESS read-only

STATUS current

## DESCRIPTION

"This object specifies the peer meanPathDelay."

::= { ptpbaseClockPortDSEntry 13 }

## ptpbaseClockPortDSGrantDuration OBJECT-TYPE

SYNTAX Unsigned32

UNITS "seconds"

MAX-ACCESS read-only

STATUS current

## DESCRIPTION

"This object specifies the grant duration allocated by the master."

::= { ptpbaseClockPortDSEntry 14 }

## ptpbaseClockPortDSPTPVersion OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-only

STATUS current

## DESCRIPTION

"This object specifies the PTP version being used."

::= { ptpbaseClockPortDSEntry 15 }

## ptpbaseClockPortRunningTable OBJECT-TYPE

SYNTAX SEQUENCE OF PtpbaseClockPortRunningEntry

MAX-ACCESS not-accessible

```
STATUS          current
DESCRIPTION
  "Table of information about the clock ports running dataset for
  a particular domain."
 ::= { ptpbaseMIBClockInfo 9 }
```

```
ptpbaseClockPortRunningEntry OBJECT-TYPE
SYNTAX          PtpbaseClockPortRunningEntry
MAX-ACCESS     not-accessible
STATUS         current
DESCRIPTION
  "An entry in the table, containing running dataset information
  about a single clock port."
INDEX          {
                ptpbaseClockPortRunningDomainIndex,
                ptpbaseClockPortRunningClockTypeIndex,
                ptpbaseClockPortRunningClockInstanceIndex,
                ptpbaseClockPortRunningPortNumberIndex
              }
 ::= { ptpbaseClockPortRunningTable 1 }
```

```
PtpbaseClockPortRunningEntry ::= SEQUENCE {
    ptpbaseClockPortRunningDomainIndex      ClockDomainType,
    ptpbaseClockPortRunningClockTypeIndex   ClockType,
    ptpbaseClockPortRunningClockInstanceIndex ClockInstanceType,
    ptpbaseClockPortRunningPortNumberIndex  ClockPortNumber,
    ptpbaseClockPortRunningName             DisplayString,
    ptpbaseClockPortRunningState            ClockPortState,
    ptpbaseClockPortRunningRole              ClockRoleType,
    ptpbaseClockPortRunningInterfaceIndex   InterfaceIndexOrZero,
    ptpbaseClockPortRunningTransport        AutonomousType,
    ptpbaseClockPortRunningEncapsulationType AutonomousType,
    ptpbaseClockPortRunningTxMode           ClockTxModeType,
    ptpbaseClockPortRunningRxMode           ClockTxModeType,
    ptpbaseClockPortRunningPacketsReceived  Counter64,
    ptpbaseClockPortRunningPacketsSent     Counter64
}
```

```
ptpbaseClockPortRunningDomainIndex OBJECT-TYPE
SYNTAX          ClockDomainType
MAX-ACCESS     not-accessible
STATUS         current
DESCRIPTION
```



"This object specifies the domain number used to create logical group of PTP devices."

::= { ptpbaseClockPortRunningEntry 1 }

ptpbaseClockPortRunningClockTypeIndex OBJECT-TYPE

SYNTAX ClockType  
MAX-ACCESS not-accessible  
STATUS current

DESCRIPTION

"This object specifies the clock type as defined in the Textual convention description."

::= { ptpbaseClockPortRunningEntry 2 }

ptpbaseClockPortRunningClockInstanceIndex OBJECT-TYPE

SYNTAX ClockInstanceType  
MAX-ACCESS not-accessible  
STATUS current

DESCRIPTION

"This object specifies the instance of the clock for this clock type in the given domain."

::= { ptpbaseClockPortRunningEntry 3 }

ptpbaseClockPortRunningPortNumberIndex OBJECT-TYPE

SYNTAX ClockPortNumber  
MAX-ACCESS not-accessible  
STATUS current

DESCRIPTION

"This object specifies the PTP portnumber associated with this clock port."

::= { ptpbaseClockPortRunningEntry 4 }

ptpbaseClockPortRunningName OBJECT-TYPE

SYNTAX DisplayString (SIZE (1..64))  
MAX-ACCESS read-only  
STATUS current

DESCRIPTION

"This object specifies the PTP clock port name."

::= { ptpbaseClockPortRunningEntry 5 }

ptpbaseClockPortRunningState OBJECT-TYPE

SYNTAX ClockPortState  
MAX-ACCESS read-only  
STATUS current

## DESCRIPTION

"This object specifies the port state returned by PTP engine.

initializing - In this state a port initializes its data sets, hardware, and communication facilities.

faulty - The fault state of the protocol.

disabled - The port shall not place any messages on its communication path.

listening - The port is waiting for the announceReceiptTimeout to expire or to receive an Announce message from a master.

preMaster - The port shall behave in all respects as though it were in the MASTER state except that it shall not place any messages on its communication path except for Pdelay\_Req, Pdelay\_Resp, Pdelay\_Resp\_Follow\_Up, signaling, or management messages.

master - The port is behaving as a master port.

passive - The port shall not place any messages on its communication path except for Pdelay\_Req, Pdelay\_Resp, Pdelay\_Resp\_Follow\_Up, or signaling messages, or management messages that are a required response to another management message.

uncalibrated - The local port is preparing to synchronize to the master port.

slave - The port is synchronizing to the selected master port."

::= { ptpbaseClockPortRunningEntry 6 }

ptpbaseClockPortRunningRole OBJECT-TYPE

SYNTAX ClockRoleType

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object specifies the Clock Role."

::= { ptpbaseClockPortRunningEntry 7 }

ptpbaseClockPortRunningInterfaceIndex OBJECT-TYPE

```
SYNTAX          InterfaceIndexOrZero
MAX-ACCESS      read-only
STATUS          current
DESCRIPTION
    "This object specifies the interface on the router being used by
    the PTP Clock for PTP communication."
 ::= { ptpbaseClockPortRunningEntry 8 }
```

ptpbaseClockPortRunningTransport OBJECT-TYPE

```
SYNTAX          AutonomousType
MAX-ACCESS      read-only
STATUS          current
DESCRIPTION
    "This object specifies the transport protocol being used for PTP
    communication (the mapping used)."
 ::= { ptpbaseClockPortRunningEntry 9 }
```

ptpbaseClockPortRunningEncapsulationType OBJECT-TYPE

```
SYNTAX          AutonomousType
MAX-ACCESS      read-only
STATUS          current
DESCRIPTION
    "This object specifies the type of encapsulation if the
    interface is adding extra layers (eg. VLAN, Pseudowire
    encapsulation...) for the PTP messages."
 ::= { ptpbaseClockPortRunningEntry 10 }
```

ptpbaseClockPortRunningTxMode OBJECT-TYPE

```
SYNTAX          ClockTxModeType
MAX-ACCESS      read-only
STATUS          current
DESCRIPTION
    "This object specifies the clock transmission mode as

    unicast:      Using unicast communication channel.
    multicast:    Using Multicast communication channel.
    multicast-mix: Using multicast-unicast communication channel"
 ::= { ptpbaseClockPortRunningEntry 11 }
```

ptpbaseClockPortRunningRxMode OBJECT-TYPE

```
SYNTAX          ClockTxModeType
MAX-ACCESS      read-only
STATUS          current
```

## DESCRIPTION

"This object specifies the clock receive mode as

unicast: Using unicast communication channel.

multicast: Using Multicast communication channel.

multicast-mix: Using multicast-unicast communication channel"

::= { ptpbaseClockPortRunningEntry 12 }

## ptpbaseClockPortRunningPacketsReceived OBJECT-TYPE

SYNTAX Counter64

UNITS "packets"

MAX-ACCESS read-only

STATUS current

## DESCRIPTION

"This object specifies the packets received on the clock port (cumulative)."

::= { ptpbaseClockPortRunningEntry 13 }

## ptpbaseClockPortRunningPacketsSent OBJECT-TYPE

SYNTAX Counter64

UNITS "packets"

MAX-ACCESS read-only

STATUS current

## DESCRIPTION

"This object specifies the packets sent on the clock port (cumulative)."

::= { ptpbaseClockPortRunningEntry 14 }

## ptpbaseClockPortTransDSTable OBJECT-TYPE

SYNTAX SEQUENCE OF PtpbaseClockPortTransDSEntry

MAX-ACCESS not-accessible

STATUS current

## DESCRIPTION

"Table of information about the Transparent clock ports running dataset for a particular domain."

::= { ptpbaseMIBClockInfo 10 }

## ptpbaseClockPortTransDSEntry OBJECT-TYPE

SYNTAX PtpbaseClockPortTransDSEntry

MAX-ACCESS not-accessible

STATUS current

## DESCRIPTION

"An entry in the table, containing clock port Transparent dataset information about a single clock port"

```
INDEX          {
                ptpbaseClockPortTransDSDomainIndex,
                ptpbaseClockPortTransDSInstanceIndex,
                ptpbaseClockPortTransDSPortNumberIndex
            }
```

```
::= { ptpbaseClockPortTransDSTable 1 }
```

```
PtpbaseClockPortTransDSEntry ::= SEQUENCE {
    ptpbaseClockPortTransDSDomainIndex      ClockDomainType,
    ptpbaseClockPortTransDSInstanceIndex    ClockInstanceType,
    ptpbaseClockPortTransDSPortNumberIndex  ClockPortNumber,
    ptpbaseClockPortTransDSPortIdentity     ClockIdentity,
    ptpbaseClockPortTransDSlogMinPdelayReqInt ClockIntervalBase2,
    ptpbaseClockPortTransDSFaultyFlag      TruthValue,
    ptpbaseClockPortTransDSPeerMeanPathDelay ClockTimeInterval
}
```

ptpbaseClockPortTransDSDomainIndex OBJECT-TYPE

SYNTAX ClockDomainType

MAX-ACCESS not-accessible

STATUS current

## DESCRIPTION

"This object specifies the domain number used to create logical group of PTP devices."

```
::= { ptpbaseClockPortTransDSEntry 1 }
```

ptpbaseClockPortTransDSInstanceIndex OBJECT-TYPE

SYNTAX ClockInstanceType

MAX-ACCESS not-accessible

STATUS current

## DESCRIPTION

"This object specifies the instance of the clock for this clock type in the given domain."

```
::= { ptpbaseClockPortTransDSEntry 2 }
```

ptpbaseClockPortTransDSPortNumberIndex OBJECT-TYPE

SYNTAX ClockPortNumber

MAX-ACCESS not-accessible

STATUS current

## DESCRIPTION

"This object specifies the PTP port number associated with this port."

REFERENCE "Section 7.5.2 Port Identity [IEEE 1588-2008]"

::= { ptpbaseClockPortTransDSEntry 3 }

ptpbaseClockPortTransDSPortIdentity OBJECT-TYPE

SYNTAX ClockIdentity

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object specifies the value of the PortIdentity attribute of the local port."

REFERENCE "Section 8.3.3.2.1 of [IEEE 1588-2008]"

::= { ptpbaseClockPortTransDSEntry 4 }

ptpbaseClockPortTransDSlogMinPdelayReqInt OBJECT-TYPE

SYNTAX ClockIntervalBase2

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object specifies the value of the logarithm to the base 2 of the minPdelayReqInterval."

REFERENCE "Section 8.3.3.3.1 of [IEEE 1588-2008]"

::= { ptpbaseClockPortTransDSEntry 5 }

ptpbaseClockPortTransDSFaultyFlag OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object specifies the value TRUE if the port is faulty and FALSE if the port is operating normally."

REFERENCE "Section 8.3.3.3.2 of [IEEE 1588-2008]"

::= { ptpbaseClockPortTransDSEntry 6 }

ptpbaseClockPortTransDSPeerMeanPathDelay OBJECT-TYPE

SYNTAX ClockTimeInterval

UNITS "Time Interval"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object specifies, (if the delayMechanism used is P2P) the value is the estimate of the current one-way propagation delay,

i.e., <meanPathDelay> on the link attached to this port, computed using the peer delay mechanism. If the value of the delayMechanism used is E2E, then the value will be zero."

REFERENCE "Section 8.3.3.3.3 of [IEEE 1588-2008]"

::= { ptpbaseClockPortTransDSEntry 7 }

ptpbaseClockPortAssociateTable OBJECT-TYPE

SYNTAX SEQUENCE OF PtpbaseClockPortAssociateEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"Table of information about a given port's associated ports.

For a master port: multiple slave ports which have established sessions with the current master port.

For a slave port: the list of masters available for a given slave port.

Session information (packets, errors) to be displayed based on availability and scenario."

::= { ptpbaseMIBClockInfo 11 }

--

-- Well Known transport types for PTP communication.

--

ptpbaseWellKnownTransportTypes OBJECT IDENTIFIER ::= {  
ptpbaseMIBClockInfo 12 }

ptpbaseTransportTypeIPversion4 OBJECT-IDENTITY

STATUS current

DESCRIPTION

"IP version 4"

::= { ptpbaseWellKnownTransportTypes 1 }

ptpbaseTransportTypeIPversion6 OBJECT-IDENTITY

STATUS current

DESCRIPTION

"IP version 6"

::= { ptpbaseWellKnownTransportTypes 2 }

```
ptpbaseTransportTypeEthernet OBJECT-IDENTITY
  STATUS current
  DESCRIPTION
    "Ethernet"
    ::= { ptpbaseWellKnownTransportTypes 3 }

ptpbaseTransportTypeDeviceNET OBJECT-IDENTITY
  STATUS current
  DESCRIPTION
    "Device NET"
    ::= { ptpbaseWellKnownTransportTypes 4 }

ptpbaseTransportTypeControlNET OBJECT-IDENTITY
  STATUS current
  DESCRIPTION
    "Control NET"
    ::= { ptpbaseWellKnownTransportTypes 5 }

ptpbaseTransportTypeIEC61158 OBJECT-IDENTITY
  STATUS current
  DESCRIPTION
    "IEC61158"
    ::= { ptpbaseWellKnownTransportTypes 6 }

--
-- Well Known encapsulation types for PTP communication.
--
ptpbaseWellKnownEncapsulationTypes OBJECT IDENTIFIER ::= {
  ptpbaseMIBClockInfo 13 }

ptpbaseEncapsulationTypeEthernet OBJECT-IDENTITY
  STATUS current
  DESCRIPTION
    "Ethernet Encapsulation type."
    ::= { ptpbaseWellKnownEncapsulationTypes 1 }

ptpbaseEncapsulationTypeVLAN OBJECT-IDENTITY
  STATUS current
  DESCRIPTION
    "VLAN Encapsulation type."
```



```
 ::= { ptpbaseWellKnownEncapsulationTypes 2 }

ptpbaseEncapsulationTypeUDPIPLSP OBJECT-IDENTITY
  STATUS current
  DESCRIPTION
    "UDP/IP over MPLS Encapsulation type."
  ::= { ptpbaseWellKnownEncapsulationTypes 3 }

ptpbaseEncapsulationTypePWUDPIPLSP OBJECT-IDENTITY
  STATUS current
  DESCRIPTION
    "UDP/IP Pseudowire over MPLS Encapsulation type."
  ::= { ptpbaseWellKnownEncapsulationTypes 4 }

ptpbaseEncapsulationTypePWEthernetLSP OBJECT-IDENTITY
  STATUS current
  DESCRIPTION
    "Ethernet Pseudowire over MPLS Encapsulation type."
  ::= { ptpbaseWellKnownEncapsulationTypes 5 }

ptpbaseClockPortAssociateEntry OBJECT-TYPE
  SYNTAX          PtpbaseClockPortAssociateEntry
  MAX-ACCESS      not-accessible
  STATUS          current
  DESCRIPTION
    "An entry in the table, containing information about a single
    associated port for the given clockport."
  INDEX           {
                  ptpClockPortCurrentDomainIndex,
                  ptpClockPortCurrentClockTypeIndex,
                  ptpClockPortCurrentClockInstanceIndex,
                  ptpClockPortCurrentPortNumberIndex,
                  ptpbaseClockPortAssociatePortIndex
                }
  ::= { ptpbaseClockPortAssociateTable 1 }

PtpbaseClockPortAssociateEntry ::= SEQUENCE {
  ptpClockPortCurrentDomainIndex      ClockDomainType,
  ptpClockPortCurrentClockTypeIndex   ClockType,
  ptpClockPortCurrentClockInstanceIndex ClockInstanceType,
  ptpClockPortCurrentPortNumberIndex  ClockPortNumber,
```

```
        ptpbaseClockPortAssociatePortIndex      Unsigned32,
        ptpbaseClockPortAssociateAddressType    AutonomousType,
        ptpbaseClockPortAssociateAddress
ClockPortTransportTypeAddress,
        ptpbaseClockPortAssociatePacketsSent    Counter64,
        ptpbaseClockPortAssociatePacketsReceived Counter64,
        ptpbaseClockPortAssociateInErrors       Counter64,
        ptpbaseClockPortAssociateOutErrors      Counter64
}

ptpClockPortCurrentDomainIndex OBJECT-TYPE
    SYNTAX          ClockDomainType
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION
        "This object specifies the given port's domain number."
    ::= { ptpbaseClockPortAssociateEntry 1 }

ptpClockPortCurrentClockTypeIndex OBJECT-TYPE
    SYNTAX          ClockType
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION
        "This object specifies the given port's clock type."
    ::= { ptpbaseClockPortAssociateEntry 2 }

ptpClockPortCurrentClockInstanceIndex OBJECT-TYPE
    SYNTAX          ClockInstanceType
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION
        "This object specifies the instance of the clock for this clock
        type in the given domain."
    ::= { ptpbaseClockPortAssociateEntry 3 }

ptpClockPortCurrentPortNumberIndex OBJECT-TYPE
    SYNTAX          ClockPortNumber
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION
        "This object specifies the PTP Port Number for the given port."
    ::= { ptpbaseClockPortAssociateEntry 4 }
```

```
ptpbaseClockPortAssociatePortIndex OBJECT-TYPE
    SYNTAX      Unsigned32 (1..65535)
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION
        "This object specifies the associated port's serial number in
        the current port's context."
    ::= { ptpbaseClockPortAssociateEntry 5 }

ptpbaseClockPortAssociateAddressType OBJECT-TYPE
    SYNTAX      AutonomousType
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "This object specifies the peer port's network address type used
        for PTP communication."
    ::= { ptpbaseClockPortAssociateEntry 6 }

ptpbaseClockPortAssociateAddress OBJECT-TYPE
    SYNTAX      ClockPortTransportTypeAddress
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "This object specifies the peer port's network address used for
        PTP communication."
    ::= { ptpbaseClockPortAssociateEntry 7 }

ptpbaseClockPortAssociatePacketsSent OBJECT-TYPE
    SYNTAX      Counter64
    UNITS       "packets"
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "The number of packets sent to this peer port from the current
        port."
    ::= { ptpbaseClockPortAssociateEntry 8 }

ptpbaseClockPortAssociatePacketsReceived OBJECT-TYPE
    SYNTAX      Counter64
    UNITS       "packets"
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
```

"The number of packets received from this peer port by the current port."

::= { ptpbaseClockPortAssociateEntry 9 }

ptpbaseClockPortAssociateInErrors OBJECT-TYPE

SYNTAX Counter64

UNITS "packets"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object specifies the input errors associated with the peer port."

::= { ptpbaseClockPortAssociateEntry 10 }

ptpbaseClockPortAssociateOutErrors OBJECT-TYPE

SYNTAX Counter64

UNITS "packets"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object specifies the output errors associated with the peer port."

::= { ptpbaseClockPortAssociateEntry 11 }

-- Conformance Information Definition

ptpbaseMIBCompliances OBJECT IDENTIFIER

::= { ptpbaseMIBConformance 1 }

ptpbaseMIBGroups OBJECT IDENTIFIER

::= { ptpbaseMIBConformance 2 }

ptpbaseMIBCompliancesSystemInfo MODULE-COMPLIANCE

STATUS current

DESCRIPTION

"Compliance statement for agents that provide read-only support for PTPBASE-MIB to provide system level information of clock devices.

Such devices can only be monitored using this MIB module.

The Module is implemented with support for read-only. In other

words, only monitoring is available by implementing this  
MODULE-COMPLIANCE."

```
MODULE          -- this module
MANDATORY-GROUPS { ntpbaseMIBSystemInfoGroup }
::= { ntpbaseMIBCompliances 1 }
```

ntpbaseMIBCompliancesClockInfo MODULE-COMPLIANCE

```
STATUS          current
DESCRIPTION
```

"Compliance statement for agents that provide read-only support  
for PTPBASE-MIB to provide clock related information.  
Such devices can only be monitored using this MIB module.

The Module is implemented with support for read-only. In other  
words, only monitoring is available by implementing this  
MODULE-COMPLIANCE."

```
MODULE          -- this module
MANDATORY-GROUPS {
    ntpbaseMIBClockCurrentDSGroup,
    ntpbaseMIBClockParentDSGroup,
    ntpbaseMIBClockDefaultDSGroup,
    ntpbaseMIBClockRunningGroup,
    ntpbaseMIBClockTimepropertiesGroup
}
::= { ntpbaseMIBCompliances 2 }
```

ntpbaseMIBCompliancesClockPortInfo MODULE-COMPLIANCE

```
STATUS          current
DESCRIPTION
```

"Compliance statement for agents that provide read-only support  
for PTPBASE-MIB to provide clock port related information.  
Such devices can only be monitored using this MIB module.

The Module is implemented with support for read-only. In other  
words, only monitoring is available by implementing this  
MODULE-COMPLIANCE."

```
MODULE          -- this module
MANDATORY-GROUPS {
    ntpbaseMIBClockPortGroup,
    ntpbaseMIBClockPortDSGroup,
    ntpbaseMIBClockPortRunningGroup,
    ntpbaseMIBClockPortAssociateGroup
}
```

```
::= { ptpbaseMIBCompliances 3 }
```

```
ptpbaseMIBCompliancesTransparentClockInfo MODULE-COMPLIANCE
```

```
STATUS current
```

```
DESCRIPTION
```

```
"Compliance statement for agents that provide read-only support  
for PTPBASE-MIB to provide Transparent clock related  
information.
```

```
Such devices can only be monitored using this MIB module.
```

```
The Module is implemented with support for read-only. In other  
words, only monitoring is available by implementing this  
MODULE-COMPLIANCE."
```

```
MODULE -- this module
```

```
MANDATORY-GROUPS {
```

```
    ptpbaseMIBClockTransparentDSGroup,  
    ptpbaseMIBClockPortTransDSGroup
```

```
}
```

```
::= { ptpbaseMIBCompliances 4 }
```

```
ptpbaseMIBSystemInfoGroup OBJECT-GROUP
```

```
OBJECTS
```

```
{
```

```
    ptpbaseSystemDomainTotals,  
    ptpDomainClockPortsTotal,  
    ptpbaseSystemProfile
```

```
}
```

```
STATUS current
```

```
DESCRIPTION
```

```
"Group which aggregates objects describing system-wide  
information"
```

```
::= { ptpbaseMIBGroups 1 }
```

```
ptpbaseMIBClockCurrentDSGroup OBJECT-GROUP
```

```
OBJECTS
```

```
{
```

```
    ptpbaseClockCurrentDSStepsRemoved,  
    ptpbaseClockCurrentDSOffsetFromMaster,  
    ptpbaseClockCurrentDSMeanPathDelay
```

```
}
```

```
STATUS current
```

```
DESCRIPTION
```

```
"Group which aggregates objects describing PTP Current Dataset  
information"
```

```
::= { ptpbaseMIBGroups 2 }
```

## ptpbaseMIBClockParentDSGroup OBJECT-GROUP

```
OBJECTS          {
    ptpbaseClockParentDSParentPortIdentity,
    ptpbaseClockParentDSParentStats,
    ptpbaseClockParentDSOffset,
    ptpbaseClockParentDSClockPhChRate,
    ptpbaseClockParentDSGMClockIdentity,
    ptpbaseClockParentDSGMClockPriority1,
    ptpbaseClockParentDSGMClockPriority2,
    ptpbaseClockParentDSGMClockQualityClass,
    ptpbaseClockParentDSGMClockQualityAccuracy,
    ptpbaseClockParentDSGMClockQualityOffset
}
STATUS           current
DESCRIPTION      "Group which aggregates objects describing PTP Parent Dataset
                 information"
 ::= { ptpbaseMIBGroups 3 }
```

## ptpbaseMIBClockDefaultDSGroup OBJECT-GROUP

```
OBJECTS          {
    ptpbaseClockDefaultDSTwoStepFlag,
    ptpbaseClockDefaultDSClockIdentity,
    ptpbaseClockDefaultDSPriority1,
    ptpbaseClockDefaultDSPriority2,
    ptpbaseClockDefaultDSSlaveOnly,
    ptpbaseClockDefaultDSQualityClass,
    ptpbaseClockDefaultDSQualityAccuracy,
    ptpbaseClockDefaultDSQualityOffset
}
STATUS           current
DESCRIPTION      "Group which aggregates objects describing PTP Default Dataset
                 information"
 ::= { ptpbaseMIBGroups 4 }
```

## ptpbaseMIBClockRunningGroup OBJECT-GROUP

```
OBJECTS          {
    ptpbaseClockRunningState,
    ptpbaseClockRunningPacketsSent,
    ptpbaseClockRunningPacketsReceived
}
```

STATUS current

DESCRIPTION

"Group which aggregates objects describing PTP running state information"

::= { ptpbaseMIBGroups 5 }

ptpbaseMIBClockTimepropertiesGroup OBJECT-GROUP

OBJECTS {

ptpbaseClockTimePropertiesDSCurrentUTCOffsetValid,  
ptpbaseClockTimePropertiesDSCurrentUTCOffset,  
ptpbaseClockTimePropertiesDSLeap59,  
ptpbaseClockTimePropertiesDSLeap61,  
ptpbaseClockTimePropertiesDSTimeTraceable,  
ptpbaseClockTimePropertiesDSFreqTraceable,  
ptpbaseClockTimePropertiesDSPTPTimescale,  
ptpbaseClockTimePropertiesDSSource

}

STATUS current

DESCRIPTION

"Group which aggregates objects describing PTP Time Properties information"

::= { ptpbaseMIBGroups 6 }

ptpbaseMIBClockTransparentDSGroup OBJECT-GROUP

OBJECTS {

ptpbaseClockTransDefaultDSClockIdentity,  
ptpbaseClockTransDefaultDSNumOfPorts,  
ptpbaseClockTransDefaultDSDelay,  
ptpbaseClockTransDefaultDSPrimaryDomain

}

STATUS current

DESCRIPTION

"Group which aggregates objects describing PTP Transparent Dataset information"

::= { ptpbaseMIBGroups 7 }

ptpbaseMIBClockPortGroup OBJECT-GROUP

OBJECTS {

ptpbaseClockPortName,  
ptpbaseClockPortSyncTwoStep,  
ptpbaseClockPortCurrentPeerAddress,  
ptpbaseClockPortNumOfAssociatedPorts,



```

        ptpbaseClockPortCurrentPeerAddressType,
        ptpbaseClockPortRole
    }
STATUS          current
DESCRIPTION
    "Group which aggregates objects describing information for a
    given PTP Port."
 ::= { ptpbaseMIBGroups 8 }

ptpbaseMIBClockPortDSGroup OBJECT-GROUP
OBJECTS        {
    ptpbaseClockPortDSName,
    ptpbaseClockPortDSPortIdentity,
    ptpbaseClockPortDSlogAnnouncementInterval,
    ptpbaseClockPortDSAnnounceRctTimeout,
    ptpbaseClockPortDSlogSyncInterval,
    ptpbaseClockPortDSMinDelayReqInterval,
    ptpbaseClockPortDSPeerDelayReqInterval,
    ptpbaseClockPortDSDelayMech,
    ptpbaseClockPortDSPeerMeanPathDelay,
    ptpbaseClockPortDSGrantDuration,
    ptpbaseClockPortDSPTPVersion
}
STATUS          current
DESCRIPTION
    "Group which aggregates objects describing PTP Port Dataset
    information"
 ::= { ptpbaseMIBGroups 9 }

ptpbaseMIBClockPortRunningGroup OBJECT-GROUP
OBJECTS        {
    ptpbaseClockPortRunningName,
    ptpbaseClockPortRunningState,
    ptpbaseClockPortRunningRole,
    ptpbaseClockPortRunningInterfaceIndex,
    ptpbaseClockPortRunningTransport,
    ptpbaseClockPortRunningEncapsulationType,
    ptpbaseClockPortRunningTxMode,
    ptpbaseClockPortRunningRxMode,
    ptpbaseClockPortRunningPacketsReceived,
    ptpbaseClockPortRunningPacketsSent
}
STATUS          current
```

## DESCRIPTION

"Group which aggregates objects describing PTP running interface information"

::= { ptpbaseMIBGroups 10 }

## ptpbaseMIBClockPortTransDSGroup OBJECT-GROUP

OBJECTS {  
    ptpbaseClockPortTransDSPortIdentity,  
    ptpbaseClockPortTransDSlogMinPdelayReqInt,  
    ptpbaseClockPortTransDSFaultyFlag,  
    ptpbaseClockPortTransDSPeerMeanPathDelay  
}

STATUS current

## DESCRIPTION

"Group which aggregates objects describing PTP TransparentDS Dataset information"

::= { ptpbaseMIBGroups 11 }

## ptpbaseMIBClockPortAssociateGroup OBJECT-GROUP

OBJECTS {  
    ptpbaseClockPortAssociatePacketsSent,  
    ptpbaseClockPortAssociatePacketsReceived,  
    ptpbaseClockPortAssociateAddress,  
    ptpbaseClockPortAssociateAddressType,  
    ptpbaseClockPortAssociateInErrors,  
    ptpbaseClockPortAssociateOutErrors  
}

STATUS current

## DESCRIPTION

"Group which aggregates objects describing information on peer PTP ports for a given PTP clock-port."

::= { ptpbaseMIBGroups 12 }

END

## 5. Security Considerations

This MIB contains readable objects whose values provide information related to PTP objects. It does not contain writable objects.

Some of the readable objects in this MIB module (i.e., objects with a MAX-ACCESS other than not-accessible) may be considered sensitive or vulnerable in some network environments. It is thus important to control even GET and/or NOTIFY access to these objects and possibly to even encrypt the values of these objects when sending them over the network via SNMP.

SNMP versions prior to SNMPv3 did not include adequate security. Even if the network itself is secure (for example by using IPsec), even then, there is no control as to who on the secure network is allowed to access and GET (read) the objects in this MIB module.

It is recommended that the implementers consider the security features as provided by the SNMPv3 framework (see [RFC 3410], section 8). Specifically, the use of the User-based Security Model [RFC 3414] and the View-based Access Control Model [RFC 3415] is recommended.

Further, deployment of SNMP versions prior to SNMPv3 is NOT recommended. Instead, it is recommended to deploy SNMPv3 and to enable cryptographic security. It is then a customer/operator responsibility to ensure that the SNMP entity giving access to an instance of this MIB is properly configured to give access to those objects only to those principals (users) that have legitimate rights to access them.

## 6. IANA Considerations

The MIB module defined in this document uses the following IANA-assigned OBJECT IDENTIFIER value recorded in the SMI Numbers registry:

Descriptor	OBJECT IDENTIFIER value
-----	-----
ptpbasesMIB	{ mib-2 xxx }

[NOTE for IANA: Please allocate an object identifier at <http://www.iana.org/assignments/smi-numbers> for object ptpbasesMIB.]

## 7. References

### 7.1. Normative References

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[RFC 3415] Wijnen, B., Presuhn, R., and K. McCloghrie, "View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)", STD 62, RFC 3415, Lucent Technologies, BMC Software, Inc., Cisco Systems, Inc., December 2002.

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## 8. Acknowledgements

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