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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.

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]. It is envisioned this MIB will complement other managed objects to be defined to monitor, measure the performance of the PTP devices and telecom clocks. 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], and the Telecom Profile described in [G.8265.1], 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, measure the performance of the PTP devices and telecom clocks.

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. 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 "ptpbases"
- corrected some data types
- corrected references and typos

-02 Jul 12 Revised following comment at IETF83:

- changed "ptpbasesClockPortRunningIPversion" to the more generic "ptpbasesClockPortRunningTransport", 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.

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

```
ptpbaseMIB MODULE-IDENTITY
```

```
    LAST-UPDATED      "201201230000Z"  
    ORGANIZATION      "TICTOC Working Group"  
    CONTACT-INFO  
        "WG Email: tictoc@ietf.org
```

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

```
        Laurent Montini,  
        Cisco Systems,  
        Email: lmontini@cisco.com
```

Tim Frost,
Symmetricom Inc.,
Email: tfrost@symmetricom.com

Greg Dowd,
Symmetricom Inc.,
Email: gdowd@symmetricom.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], or the Telecom Profile described in [G.8265.1], when running over the IP network layer.

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

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.
- [G.8265.1] Precision Time Protocol Telecom Profile for Frequency Synchronization, ITU-T Recommendation G.8265.1, October 2010.

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/syntonized 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/syntonized 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.

Syntonized clocks:

Two clocks are syntonized 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.

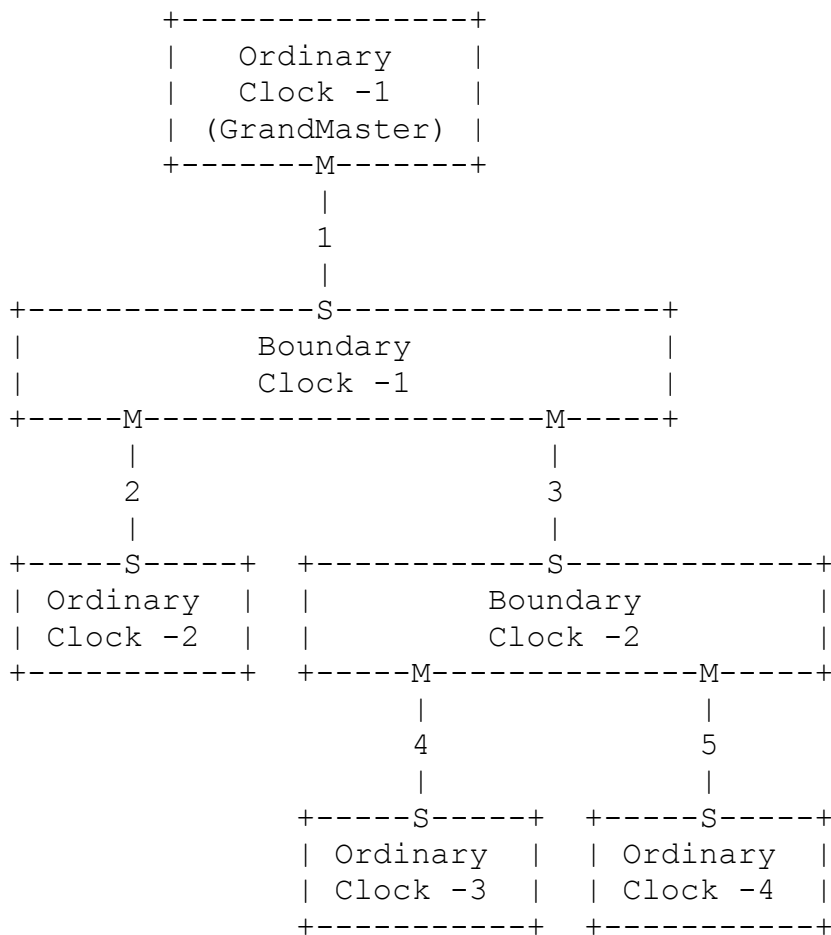
Two-step clock:

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

The table below 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]:



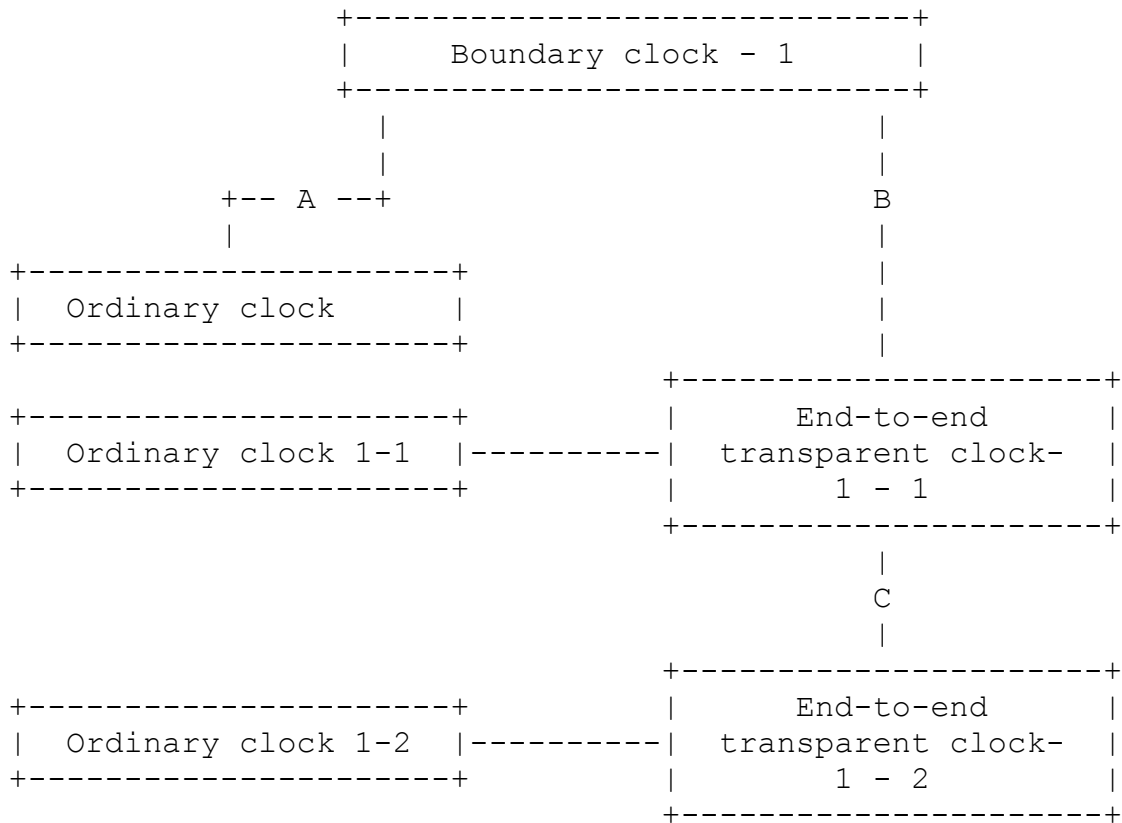
Grandmaster

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

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

STATUS current

DESCRIPTION

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

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)
    }

```

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)

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)
                  }

```

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(1),           -- 0
    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 is lost or the timestamps in the ptp packets are incorrect. But since the slave was locked to the master, it can run with the same accuracy for sometime. The slave can continue to operate in this state for some time. If communication with the master is not restored for a while, the device is moved 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)
                }
```

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
                    ntp(64), -- 0x40
                    ntp(80), -- 0x50
                    handSet(96), -- 0x60
                }
```

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

ClockTimeInterval ::= TEXTUAL-CONVENTION

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.

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))

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)
                }
```

ClockPortTransportType ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

DESCRIPTION

"The Clock port transport type. The transport protocol used for the communication between the clock nodes. This includes 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          INTEGER {
                    ipversion4(1),
                    ipversion6(2),
                    ethernet(3),
                    DeviceNet(4),
                    ControlNet(5),
                    IEC61158(6)
                }
```

ClockPortTransportTypeAddress ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"The Clock port transport protocol address used for the

communication between the clock nodes. This is a string corresponding to the address type as specified by the ClockPortTransportType.

This can be an address of types 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))

ptpbaseMIBNotifs OBJECT IDENTIFIER

::= { ptpbaseMIB 0 }

ptpbaseMIBObjects OBJECT IDENTIFIER

::= { ptpbaseMIB 1 }

ptpbaseMIBConformance OBJECT IDENTIFIER

::= { ptpbaseMIB 2 }

ptpbaseMIBSystemInfo OBJECT IDENTIFIER

::= { ptpbaseMIBObjects 1 }

-- Conformance Information Definition

ptpbaseMIBCompliances OBJECT IDENTIFIER

::= { ptpbaseMIBConformance 1 }

ptpbaseMIBGroups OBJECT IDENTIFIER

::= { ptpbaseMIBConformance 2 }

ptpbaseMIBCompliances1 MODULE-COMPLIANCE

STATUS current

DESCRIPTION

"Compliance statement for agents that provide read-only support for PTPBASE-MIB. 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 { ptpbaseMIBSystemInfoGroup }

```
::= { ntpbaseMIBCompliances 1 }
```

```
ntpbaseMIBCompliances2 MODULE-COMPLIANCE
```

```
STATUS current
```

```
DESCRIPTION
```

```
"Compliance statement for agents that provide read-only support  
for NTPBASE-MIB. 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 }
```

```
ntpbaseMIBCompliances3 MODULE-COMPLIANCE
```

```
STATUS current
```

```
DESCRIPTION
```

```
"Compliance statement for agents that provide read-only support  
for NTPBASE-MIB. 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
```

```
}
```

```
::= { ntpbaseMIBCompliances 3 }
```

```
ntpbaseMIBCompliances4 MODULE-COMPLIANCE
```

```
STATUS current
```

DESCRIPTION

"Compliance statement for agents that provide read-only support for PTPBASE-MIB. 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 }
```

ptpbasesMIBClockTimepropertiesGroup 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 }
```

ptpbasesMIBClockTransparentDSGroup OBJECT-GROUP

```
OBJECTS {
    ptpbaseClockTransDefaultDSClockIdentity,
    ptpbaseClockTransDefaultDSNumOfPorts,
    ptpbaseClockTransDefaultDSDelay,
    ptpbaseClockTransDefaultDSPrimaryDomain
}
STATUS current
DESCRIPTION
    "Group which aggregates objects describing PTP Transparent
    Dataset
    information"
 ::= { ptpbaseMIBGroups 7 }
```

ptpbasesMIBClockPortGroup OBJECT-GROUP

```
OBJECTS {
    ptpbaseClockPortName,
    ptpbaseClockPortSyncOneStep,
    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,
    ptpbaseClockPortDSAnnouncementInterval,
    ptpbaseClockPortDSAnnounceRctTimeout,
    ptpbaseClockPortDSSyncInterval,
    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 }

ptpbasesystemClockPortTransDSGroup OBJECT-GROUP

```
OBJECTS          {
    ptpbaseClockPortTransDSPortIdentity,
    ptpbaseClockPortTransDSlogMinPdelayReqInt,
    ptpbaseClockPortTransDSFaultyFlag,
    ptpbaseClockPortTransDSPeerMeanPathDelay
}
STATUS           current
DESCRIPTION
    "Group which aggregates objects describing PTP TransparentDS
    Dataset
    information"
::= { ptpbaseMIBGroups 11 }
```

ptpbasesystemClockPortAssociateGroup 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 }
```

ptpbasesystemClockInfo OBJECT IDENTIFIER

```
::= { ptpbaseMIBObjects 2 }
```

ptpbasesystemSystemTable OBJECT-TYPE

```
SYNTAX           SEQUENCE OF PtpbaseSystemEntry
MAX-ACCESS       not-accessible
STATUS           current
DESCRIPTION
```

```
    "Table of count information about the PTP system for all
    domains."
```

```
::= { ptpbaseMIBSystemInfo 1 }
```

ptpbasesystemSystemEntry OBJECT-TYPE

```
SYNTAX           PtpbaseSystemEntry
```


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

}

::= { ptpbaseSystemTable 1 }

PtpbaseSystemEntry ::= 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."
 ::= { 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 }
```

```
ptpbaseClockCurrentDSTable OBJECT-TYPE
SYNTAX          SEQUENCE OF PtpbaseClockCurrentDSEntry
MAX-ACCESS      not-accessible
STATUS          current
DESCRIPTION
    "Table of information about the PTP clock Current Datasets for
    all domains."
 ::= { ptpbaseMIBClockInfo 1 }
```

```
ptpbaseClockCurrentDSEntry OBJECT-TYPE
SYNTAX          PtpbaseClockCurrentDSEntry
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          {
                ptpbaseClockCurrentDSDomainIndex,
                ptpbaseClockCurrentDSClockTypeIndex,
                ptpbaseClockCurrentDSInstanceIndex
            }
```

```
::= { ptpbaseClockCurrentDSTable 1 }
```

```
PtpbaseClockCurrentDSEntry ::= SEQUENCE {
    ptpbaseClockCurrentDSDomainIndex      ClockDomainType,
    ptpbaseClockCurrentDSClockTypeIndex   ClockType,
    ptpbaseClockCurrentDSInstanceIndex    ClockInstanceType,
    ptpbaseClockCurrentDSStepsRemoved     Unsigned32,
    ptpbaseClockCurrentDSOffsetFromMaster ClockTimeInterval,
    ptpbaseClockCurrentDSMeanPathDelay    ClockTimeInterval
}
```

ptpbaseClockCurrentDSDomainIndex 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

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 }

```
ptpbasedClockParentDSTable OBJECT-TYPE
    SYNTAX          SEQUENCE OF PtpbasedClockParentDSEntry
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION
        "Table of information about the PTP clock Parent Datasets for
        all domains."
    ::= { ptpbaseMIBClockInfo 2 }

ptpbasedClockParentDSEntry OBJECT-TYPE
    SYNTAX          PtpbasedClockParentDSEntry
    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
        {
            ptpbasedClockParentDSDomainIndex,
            ptpbasedClockParentDSClockTypeIndex,
            ptpbasedClockParentDSInstanceIndex
        }
    ::= { ptpbasedClockParentDSTable 1 }

PtpbasedClockParentDSEntry ::= SEQUENCE {
    ptpbasedClockParentDSDomainIndex      ClockDomainType,
    ptpbasedClockParentDSClockTypeIndex   ClockType,
    ptpbasedClockParentDSInstanceIndex    ClockInstanceType,
    ptpbasedClockParentDSParentPortIdentity OCTET STRING,
    ptpbasedClockParentDSParentStats      TruthValue,
    ptpbasedClockParentDSOffset          ClockIntervalBase2,
    ptpbasedClockParentDSClockPhChRate   Integer32,
    ptpbasedClockParentDSGMCClockIdentity ClockIdentity,
    ptpbasedClockParentDSGMCClockPriority1 Unsigned32,
    ptpbasedClockParentDSGMCClockPriority2 Unsigned32,
    ptpbasedClockParentDSGMCClockQualityClass ClockQualityClassType,
    ptpbasedClockParentDSGMCClockQualityAccuracy ClockQualityAccuracyType,
    ptpbasedClockParentDSGMCClockQualityOffset 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 }
```

ptpbasedefaultDSSlaveOnly OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Whether the SlaveOnly flag is set."

::= { ptpbasedefaultDSEntry 8 }

ptpbasedefaultDSQualityClass OBJECT-TYPE

SYNTAX ClockQualityClassType (0..255)

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object specifies the default dataset Quality Class."

::= { ptpbasedefaultDSEntry 9 }

ptpbasedefaultDSQualityAccuracy OBJECT-TYPE

SYNTAX ClockQualityAccuracyType

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object specifies the default dataset Quality Accuracy."

::= { ptpbasedefaultDSEntry 10 }

ptpbasedefaultDSQualityOffset OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object specifies the default dataset Quality offset."

::= { ptpbasedefaultDSEntry 11 }

ptpbasedefaultClockRunningTable OBJECT-TYPE

SYNTAX SEQUENCE OF PtpbasedefaultClockRunningEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

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

::= { ptpbasedefaultMIBClockInfo 4 }

```
ptpbasedClockRunningEntry OBJECT-TYPE
    SYNTAX          PtpbasedClockRunningEntry
    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           {
                    ptpbasedClockRunningDomainIndex,
                    ptpbasedClockRunningClockTypeIndex,
                    ptpbasedClockRunningInstanceIndex
                }
    ::= { ptpbasedClockRunningTable 1 }

PtpbasedClockRunningEntry ::= SEQUENCE {
    ptpbasedClockRunningDomainIndex      ClockDomainType,
    ptpbasedClockRunningClockTypeIndex   ClockType,
    ptpbasedClockRunningInstanceIndex    ClockInstanceType,
    ptpbasedClockRunningState             ClockStateType,
    ptpbasedClockRunningPacketsSent      Counter64,
    ptpbasedClockRunningPacketsReceived Counter64
}

ptpbasedClockRunningDomainIndex 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."
    ::= { ptpbasedClockRunningEntry 1 }

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

ptpbasedClockRunningInstanceIndex 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 is lost or the timestamps in the ptp packets are incorrect. But since the slave was locked to the master, it can run with the same accuracy for sometime. The slave can continue to operate in this state for some time. If communication with the master is not restored for a while, the device is moved 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 Timeproperties Datasets for all domains."

::= { ptpbaseMIBClockInfo 5 }

ptpbaseClockTimePropertiesDSEntry OBJECT-TYPE

SYNTAX PtpbaseClockTimePropertiesDSEntry

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

```
{  
    ptpbaseClockTimePropertiesDSDomainIndex,  
    ptpbaseClockTimePropertiesDSClockTypeIndex,  
    ptpbaseClockTimePropertiesDSInstanceIndex  
}
```

::= { ptpbaseClockTimePropertiesDSTable 1 }


```
PtpbaseClockTimePropertiesDSEntry ::= SEQUENCE {
    ptpbaseClockTimePropertiesDSDomainIndex      ClockDomainType,
    ptpbaseClockTimePropertiesDSClockTypeIndex   ClockType,
    ptpbaseClockTimePropertiesDSInstanceIndex    ClockInstanceType,
    ptpbaseClockTimePropertiesDSCurrentUTCOffsetValid TruthValue,
    ptpbaseClockTimePropertiesDSCurrentUTCOffset Integer32,
    ptpbaseClockTimePropertiesDSLeap59          TruthValue,
    ptpbaseClockTimePropertiesDSLeap61          TruthValue,
    ptpbaseClockTimePropertiesDSTimeTraceable   TruthValue,
    ptpbaseClockTimePropertiesDSFreqTraceable   TruthValue,
    ptpbaseClockTimePropertiesDSPTPTimescale    TruthValue,
    ptpbaseClockTimePropertiesDSSource          ClockTimeSourceType
}
```

```
ptpbaseClockTimePropertiesDSDomainIndex 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."
    ::= { ptpbaseClockTimePropertiesDSEntry 1 }
```

```
ptpbaseClockTimePropertiesDSClockTypeIndex 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 Integer32
 }

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 Integer32
```

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

```
STATUS current
```

```
DESCRIPTION
```

```
"This object specifies the value of the primary syntonization 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,
    ptpbaseClockPortSyncOneStep          TruthValue,
    ptpbaseClockPortCurrentPeerAddressType ClockPortTransportType,
    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 (1..65535)

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 }

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

ptpbaseClockPortCurrentPeerAddressType OBJECT-TYPE
    SYNTAX          ClockPortTransportType
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "This object specifies the current peer's network address 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,
    ptpbaseClockPortDSAnnouncementInterval Integer32,
    ptpbaseClockPortDSAnnounceRctTimeout  Integer32,
    ptpbaseClockPortDSSyncInterval         Integer32,
    ptpbaseClockPortDSMinDelayReqInterval Integer32,
    ptpbaseClockPortDSPeerDelayReqInterval Integer32,
    ptpbaseClockPortDSDelayMech            ClockMechanismType,
    ptpbaseClockPortDSPeerMeanPathDelay    ClockTimeInterval,
    ptpbaseClockPortDSGrantDuration        Unsigned32,
    ptpbaseClockPortDSPTPVersion           Integer32
}

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 (1..65535)
    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 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 }
```

```
ptpbaseClockPortDSAnnouncementInterval OBJECT-TYPE
    SYNTAX          Integer32
    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 }
```

ptpbaseClockPortDSSyncInterval OBJECT-TYPE

SYNTAX Integer32

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

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object specifies the peer meanPathDelay."

::= { ptpbaseClockPortDSEntry 13 }

ptpbaseClockPortDSGrantDuration OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

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

::= { ptpbaseClockPortDSEntry 14 }

ptpbaseClockPortDSPTPVersion OBJECT-TYPE

SYNTAX Integer32

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
ClockPortTransportType,
    ptpbaseClockPortRunningEncapsulationType Integer32,
    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 (1..65535)

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      ClockPortTransportType
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      Integer32
```



```
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 specifie 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
  (cummulative)."
```

```
 ::= { 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 Integer32,
    ptpbaseClockPortTransDSFaultyFlag      TruthValue,
    ptpbaseClockPortTransDSPeerMeanPathDelay ClockTimeInterval
}
```

```
ptpbasesClockPortTransDSDomainIndex 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."
    ::= { ptpbasesClockPortTransDSEntry 1 }

ptpbasesClockPortTransDSInstanceIndex 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."
    ::= { ptpbasesClockPortTransDSEntry 2 }

ptpbasesClockPortTransDSPortNumberIndex OBJECT-TYPE
    SYNTAX          ClockPortNumber (1..65535)
    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]"
    ::= { ptpbasesClockPortTransDSEntry 3 }

ptpbasesClockPortTransDSPortIdentity 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]"
    ::= { ptpbasesClockPortTransDSEntry 4 }

ptpbasesClockPortTransDSlogMinPdelayReqInt OBJECT-TYPE
    SYNTAX          Integer32
    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

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 (pkts, errors) to be displayed based on availability and scenario."

```
::= { ptpbaseMIBClockInfo 11 }
```

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	ClockPortTransportType,
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          ClockPortTransportType
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."
 ::= { ntpbaseClockPortAssociateEntry 11 }
```

END

5. Security Considerations

This MIB contains readable objects whose values provide information related to PTP objects. While unauthorized access to the readable objects is relatively innocuous, unauthorized access to the writeable objects could cause a denial of service, or could cause unauthorized creation and/or manipulation of tunnels. Hence, the support for SET operations in a non-secure environment without proper protection can have a negative effect on network operations.

SNMPv1 by itself is such an insecure environment. 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 SET (change/create/delete) the objects in this MIB.

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

It is then a customer/user responsibility to ensure that the SNMP entity giving access to 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

To be added.

7. References

7.1. Normative References

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7.2. Informative References

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[RFC 3416] Presuhn, R. (Ed.), "Version 2 of the Protocol Operations for the Simple Network Management Protocol (SNMP)", STD 62, RFC 3416, BMC Software, Inc., December 2002.

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8. Acknowledgements

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9. Author's Addresses

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