

PNNI-MIB DEFINITIONS ::= BEGIN

IMPORTS

MODULE-IDENTITY, OBJECT-TYPE,
Counter32, Gauge32, Integer32, Unsigned32, enterprises,
zeroDotZero, NOTIFICATION-TYPE
FROM SNMPv2-SMI
TEXTUAL-CONVENTION, RowStatus, DisplayString,
TimeStamp, TruthValue
FROM SNMPv2-TC
InterfaceIndex, ifIndex
FROM IF-MIB
AtmTrafficDescrParamIndex
FROM ATM-TC-MIB
MODULE-COMPLIANCE, OBJECT-GROUP
FROM SNMPv2-CONF;

pnniMIB MODULE-IDENTITY

LAST-UPDATED "200407150000Z"

ORGANIZATION "The ATM Forum"

CONTACT-INFO

"The ATM Forum
Presidio of San Francisco
P.O. Box 29920
527B Rucker Street
San Francisco, CA 94129-0920 USA
Phone: +1 415-561-6275
Fax: +1 415-561-6120
info@atmforum.com"

DESCRIPTION

"The MIB module for managing ATM Forum PNNI routing."

REVISION "200407150000Z"

DESCRIPTION

"Updated version of the PNNI MIB, adding
support for PNNI Addendum for SVCC-based RCC
Diagnostic Test, Version 1.0 (af-cs-0203.000)"

REVISION "200404260000Z"

DESCRIPTION

"Updated version of the PNNI MIB, adding
support for PNNI Routing Resynchronization Control,
Version 1.0 (af-cs-0201.000)"

REVISION "200202110000Z"

DESCRIPTION

"Updated version of the PNNI MIB for PNNI 1.1, adding
objects for proxy flush and AESAs with embedded
addresses (af-pnni-0055.002)."

REVISION "200102260000Z"

DESCRIPTION

"Updated version of the PNNI MIB adding support for the GFR
ATM Service capability (af-cs-0167.000)."

REVISION "200006160000Z"

DESCRIPTION

"Updated version of the PNNI MIB adding support for the UBR
with MDCR capability (af-cs-0147.000)."

REVISION "9810240000Z"

DESCRIPTION

```

        "Updated version of the PNNI MIB released with the PNNI
        Addendum on PNNI/B-QSIG Interworking and Generic
        Functional Protocol for the Support of Supplementary
        Services (af-cs-0102.000)."
```

REVISION "9705010000Z"

DESCRIPTION

```

        "Updated version of the PNNI MIB released with the PNNI
        V1.0 Errata and PICS (af-pnni-0081.000)."
```

REVISION "9602270000Z"

DESCRIPTION

```

        "Initial version of the MIB for monitoring and controlling
        PNNI routing."
 ::= { atmFPnni 1 }
```

-- The object identifier subtree for ATM Forum PNNI MIBs

```

atmForum      OBJECT IDENTIFIER ::= { enterprises 353 }
atmForumNetworkManagement OBJECT IDENTIFIER ::= { atmForum 5 }
atmFPnni      OBJECT IDENTIFIER ::= { atmForumNetworkManagement 4 }
```

pnniMIBObjects OBJECT IDENTIFIER ::= { pnniMIB 1 }

PnniAtmAddr ::= TEXTUAL-CONVENTION

```

STATUS      current
DESCRIPTION
    "The ATM address used by the network entity.  The address
    types are: no address (0 octets), and NSAP (20 octets)."
```

REFERENCE

```

    "ATM Forum PNNI 1.1 Section 5.2"
```

SYNTAX OCTET STRING (SIZE(0|20))

PnniNodeIndex ::= TEXTUAL-CONVENTION

```

STATUS      current
DESCRIPTION
    "An index that identifies a logical PNNI entity within the
    managed system.
```

The distinguished value zero indicates the null instance or no instance in the PnniNodeCfgParentNodeIndex. In all other cases, the distinguished value zero indicates a logical entity within the switching system that manages routes only over non-PNNI interfaces.

By default, only the node identified by node index one is created, and all PNNI interfaces are associated with that node."

SYNTAX Integer32 (0..65535)

PnniNodeId ::= TEXTUAL-CONVENTION

```

STATUS      current
DESCRIPTION
    "A PNNI node ID - this is used to identify the logical PNNI
    node."
```

REFERENCE

"ATM Forum PNNI 1.1 Section 5.3.3"

SYNTAX OCTET STRING (SIZE(22))

PnniPortId ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"A PNNI port ID - this is used to identify a point of attachment of a logical link to a given logical node.

The values 0 and 0xffffffff have special meanings in certain contexts and do not identify a specific port.

The distinguished value 0 indicates that no port is specified."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.3.4"

SYNTAX Unsigned32

PnniAggrToken ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"A PNNI aggregation token - this is used to determine which links to a given neighbor node are to be aggregated and advertised as a single logical link."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.3.5"

SYNTAX Unsigned32

PnniPeerGroupId ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"A PNNI peer group ID."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.3.2"

SYNTAX OCTET STRING (SIZE(14))

PnniLevel ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"A PNNI routing level indicator."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.3.1"

SYNTAX Integer32 (0..104)

PnniSvccRccIndex ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"The value of this object identifies the SVCC-based RCC for which the entry contains management information."

SYNTAX Integer32

AtmAddrPrefix ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION
"A prefix of one or more ATM End System Addresses. The significant portion of a prefix is padded with zeros on the right to fill 19 octets."
REFERENCE
"ATM Forum PNNI 1.1 Section 5.2"
SYNTAX OCTET STRING (SIZE(19))

PnniPrefixLength ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION
"The number of bits that are significant in an ATM address prefix used by PNNI."
REFERENCE
"ATM Forum PNNI 1.1 Section 5.2"
SYNTAX Integer32 (0..152)

PnniMetricsTag ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION
"An index into the pnniMetricsTable. The suffix tag is used to indicate that there may be many related entries in the table further discriminated by other index terms. The distinguished value zero indicates that no metrics are associated with the described entity."
SYNTAX Integer32 (0..2147483647)

ServiceCategory ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION
"Indicates the service category."
REFERENCE
"ATM Forum Traffic Management 4.1 Section 2"
SYNTAX INTEGER { other(1),
cbr(2),
rtVbr(3),
nrtVbr(4),
abr(5),
ubr(6),
gfr(7) }

ClpType ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION
"Indicates the CLP type of a traffic stream."
SYNTAX INTEGER { clpEqual0(1), clpEqual0Or1(2) }

TnsType ::= TEXTUAL-CONVENTION
STATUS current

DESCRIPTION
"Indicates the type of network identification of a
specified transit network."
REFERENCE
"ATM Forum UNI Signalling 4.1 Section 2 4.5.22/Q.2931"
SYNTAX INTEGER { nationalNetworkIdentification(2),
other(8) }

TnsPlan ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION
"Indicates the network identification plan of a
specified transit network."
REFERENCE
"ATM Forum UNI Signalling 4.1 Section 2 4.5.22/Q.2931"
SYNTAX INTEGER { carrierIdentificationCode(1),
other(16) }

PnniVersion ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION
"Indicates a version of the PNNI protocol."
REFERENCE
"ATM Forum PNNI 1.1 Section 5.6.1"
SYNTAX INTEGER { unsupported(1), version1point0(2) }

PnniHelloState ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION
"The state of an instance of the PNNI Hello State machine."
REFERENCE
"ATM Forum PNNI 1.1 Section 5.6.2.1.2"
SYNTAX INTEGER {
notApplicable(1),
down(2),
attempt(3),
oneWayInside(4),
twoWayInside(5),
oneWayOutside(6),
twoWayOutside(7),
commonOutside(8)
}

GfrCapability ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION
"Indicates the GFR conformance definitions supported."
REFERENCE
"ATM Forum Traffic Management 4.1 Section 2"
SYNTAX INTEGER { gfrDot1(1),
gfrDot2(2),
gfrDot1AndGfrDot2(3) }

-- the base group

pnniBaseGroup OBJECT IDENTIFIER ::= { pnniMIBObjects 1 }

pnniHighestVersion OBJECT-TYPE

SYNTAX PnniVersion

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The highest version of the PNNI protocol that the software in this switching system is capable of executing."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.6.1"

::= { pnniBaseGroup 1 }

pnniLowestVersion OBJECT-TYPE

SYNTAX PnniVersion

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The lowest version of the PNNI Protocol that the software in this switching system is capable of executing."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.6.1"

::= { pnniBaseGroup 2 }

pnniDtlCountOriginator OBJECT-TYPE

SYNTAX Counter32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The total number of DTL stacks that this switching system has originated as the DTLOriginator and placed into signalling messages. This includes the initial DTL stacks computed by this system as well as any alternate route (second, third choice etc.) DTL stacks computed by this switching system in response to crankbacks."

::= { pnniBaseGroup 3 }

pnniDtlCountBorder OBJECT-TYPE

SYNTAX Counter32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The number of partial DTL stacks that this switching system has added into signalling messages as an entry border node. This includes the initial partial DTL stacks computed by this system as well as any alternate route (second, third choice etc.) partial DTL stacks computed by this switching system in response to crankbacks."

::= { pnniBaseGroup 4 }

pnniCrankbackCountOriginator OBJECT-TYPE

SYNTAX Counter32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The count of the total number of connection setup messages

including DTL stacks originated by this switching system that have cranked back to this switching system at all levels of the hierarchy."
 ::= { pnniBaseGroup 5 }

pnniCrankbackCountBorder OBJECT-TYPE

SYNTAX Counter32
MAX-ACCESS read-only
STATUS current

DESCRIPTION

"The count of the total number of connection setup messages including DTLs added by this switching system as an entry border node that have cranked back to this switching system at all levels of the hierarchy. This count does not include Crankbacks for which this switching system was not the crankback destination, only those crankbacks that were directed to this switching system are counted here."

::= { pnniBaseGroup 6 }

pnniAltRouteCountOriginator OBJECT-TYPE

SYNTAX Counter32
MAX-ACCESS read-only
STATUS current

DESCRIPTION

"The total number of alternate DTL stacks that this switching system has computed and placed into signalling messages as the DTLOriginator."

::= { pnniBaseGroup 7 }

pnniAltRouteCountBorder OBJECT-TYPE

SYNTAX Counter32
MAX-ACCESS read-only
STATUS current

DESCRIPTION

"The total number of alternate partial DTL stacks that this switching system has computed and placed into signalling messages as an entry border node."

::= { pnniBaseGroup 8 }

pnniRouteFailCountOriginator OBJECT-TYPE

SYNTAX Counter32
MAX-ACCESS read-only
STATUS current

DESCRIPTION

"The total number of times where the switching system failed to compute a viable DTL stack as the DTLOriginator for some call. It indicates the number of times a call was cleared from this switching system due to originator routing failure."

::= { pnniBaseGroup 9 }

pnniRouteFailCountBorder OBJECT-TYPE

SYNTAX Counter32
MAX-ACCESS read-only
STATUS current

DESCRIPTION

"The total number of times where the switching system failed

to compute a viable partial DTL stack as an entry border node for some call. It indicates the number of times a call was either cleared or cranked back from this switching system due to border routing failure."

::= { pnniBaseGroup 10 }

pnniRouteFailUnreachableOriginator OBJECT-TYPE

SYNTAX Counter32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The total number of times where the switching system failed to compute a viable DTL stack as the DTLOriginator because the destination was unreachable, i.e., those calls that are cleared with cause #2 `specified transit network unreachable' or cause #3 `destination unreachable' in the cause IE."

::= { pnniBaseGroup 11 }

pnniRouteFailUnreachableBorder OBJECT-TYPE

SYNTAX Counter32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The total number of times where the switching system failed to compute a viable partial DTL stack as an entry border node because the target of the path calculation was unreachable, i.e., those calls that are cleared or cranked back with cause #2 `specified transit network unreachable' or cause #3 `destination unreachable' in the cause IE."

::= { pnniBaseGroup 12 }

-- node table

pnniNodeTable OBJECT-TYPE

SYNTAX SEQUENCE OF PnniNodeEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"The pnniNodeTable collects attributes that affect the operation of a PNNI logical node.

There is a single row in this table for each PNNI peer group that the managed system is expected or eligible to become a member of."

REFERENCE

"ATM Forum PNNI 1.1 Annex F"

::= { pnniMIBObjects 2 }

pnniNodeEntry OBJECT-TYPE

SYNTAX PnniNodeEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"An entry in the table, containing information about a PNNI

logical node in this switching system."
REFERENCE
"ATM Forum PNNI 1.1 Annex F"
INDEX { pnniNodeIndex }
::= { pnniNodeTable 1 }

PnniNodeEntry ::=

```

SEQUENCE {
    pnniNodeIndex          PnniNodeIndex,
    pnniNodeLevel          PnniLevel,
    pnniNodeId             PnniNodeId,
    pnniNodeLowest         TruthValue,
    pnniNodeAdminStatus   INTEGER,
    pnniNodeOperStatus    INTEGER,
    pnniNodeDomainName    DisplayString,
    pnniNodeAtmAddress     PnniAtmAddr,
    pnniNodePeerGroupId   PnniPeerGroupId,
    pnniNodeRestrictedTransit TruthValue,
    pnniNodeComplexRep    TruthValue,
    pnniNodeRestrictedBranching TruthValue,
    pnniNodeDatabaseOverload TruthValue,
    pnniNodePtses         Gauge32,
    pnniNodeRowStatus     RowStatus,
    pnniNodeCoBiTransportSupported TruthValue,
    pnniNodeClBiTransportSupported TruthValue,
    pnniNodeEmbedAddrAESAPrefixAdvType INTEGER,
    pnniNodeStartTimeStamp TimeStamp,
    pnniNodeRestartAdminStatus INTEGER,
    pnniNodeRestartOperStatus INTEGER,
    pnniNodeResyncEnabled TruthValue,
    pnniNodeRestartInitTimeStamp TimeStamp,
    pnniNodeRestartDoneTimeStamp TimeStamp,
    pnniNodeLastBackupTimeStamp TimeStamp
}

```

pnniNodeIndex OBJECT-TYPE
SYNTAX PnniNodeIndex
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"A value assigned to a node in this switching system that uniquely identifies it in the MIB."
::= { pnniNodeEntry 1 }

pnniNodeLevel OBJECT-TYPE
SYNTAX PnniLevel
MAX-ACCESS read-create
STATUS current
DESCRIPTION
"The level of PNNI hierarchy at which this node exists. This attribute is used to determine the default node ID and the default peer group ID for this node. This object may only be written when pnniNodeAdminStatus has the value down."
REFERENCE
"ATM Forum PNNI 1.1 Section 5.3.1, Annex F"
DEFVAL { 96 }
::= { pnniNodeEntry 2 }

pnniNodeId OBJECT-TYPE

SYNTAX PnniNodeId
MAX-ACCESS read-create
STATUS current

DESCRIPTION

"The value the switching system is using to represent itself as this node. This object may only be written when pnniNodeAdminStatus has the value down.

If pnniNodeLowest is true, then the default node ID takes the form defined in Section 5.3.3 for lowest level nodes, with the first octet equal to pnniNodeLevel, the second octet equal to 160, and the last 20 octets equal to pnniNodeAtmAddress. However if the pnniNodeAtmAddress contains an AESA with an AFI indicating the presence of embedded addresses and the value of pnniNodeEmbedAddrAESAPrefixAdvType is 'leftJustified', then the last 20 octets are set to the left justified form of pnniNodeAtmAddress as described in section 5.2.2.1.

If pnniNodeLowest is false, then the default node ID takes the form defined in Section 5.3.3 for logical group nodes, with the first octet equal to pnniNodeLevel, the next fourteen octets equal to the value of pnniNodePeerGroupId for the child node whose election as PGL causes this LGN to be instantiated, the next six octets equal to the ESI of pnniNodeAtmAddress, and the last octet equal to zero."

REFERENCE

"ATM Forum PNNI 1.1 Sections 5.3.3 and 5.2.2.1, Annex F"
 ::= { pnniNodeEntry 3 }

pnniNodeLowest OBJECT-TYPE

SYNTAX TruthValue
MAX-ACCESS read-create
STATUS current

DESCRIPTION

"Indicates whether this node acts as a lowest level node or whether this node is a logical group node that becomes active when one of the other nodes in this switching system becomes a peer group leader. The value 'false' must not be used with nodes that are not PGL/LGN capable.

This object may only be written when pnniNodeAdminStatus has the value down."

DEFVAL { true }
 ::= { pnniNodeEntry 4 }

pnniNodeAdminStatus OBJECT-TYPE

SYNTAX INTEGER { up(1), down(2) }
MAX-ACCESS read-create
STATUS current

DESCRIPTION

"Indicates whether the administrative status of the node is up (the node is allowed to become active) or down (the node

is forced to be inactive).

When pnniNodeAdminStatus is down, then pnniNodeOperStatus

must also be down."

DEFVAL { up }

::= { pnniNodeEntry 5 }

pnniNodeOperStatus OBJECT-TYPE

SYNTAX INTEGER { up(1), down(2) }

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Indicates whether the node is active or whether the node has yet to become operational. When the value is down, all state has been cleared from the node and the node is not communicating with any of its neighbor nodes."

::= { pnniNodeEntry 6 }

pnniNodeDomainName OBJECT-TYPE

SYNTAX DisplayString

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The name of the PNNI routing domain in which this node participates. All lowest-level PNNI nodes with the same pnniNodeDomainName are presumed to be connected."

DEFVAL { "" }

::= { pnniNodeEntry 7 }

pnniNodeAtmAddress OBJECT-TYPE

SYNTAX PnniAtmAddr

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This node's ATM End System Address. Remote systems wishing to exchange PNNI protocol packets with this node should direct packets or calls to this address."

This attribute may only be written when pnniNodeAdminStatus has the value down."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.2.2"

::= { pnniNodeEntry 8 }

pnniNodePeerGroupId OBJECT-TYPE

SYNTAX PnniPeerGroupId

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The Peer Group Identifier of the peer group that the given node is to become a member of."

The default value of this attribute has the first octet equal to pnniNodeLevel, the next pnniNodeLevel bits equal to the pnniNodeLevel bits starting from the third octet of

pnniNodeId, and the remainder padded with zeros.

This object may only be written when pnniNodeAdminStatus has the value down."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.3.2, Annex F"

::= { pnniNodeEntry 9 }

pnniNodeRestrictedTransit OBJECT-TYPE

SYNTAX TruthValue
MAX-ACCESS read-create
STATUS current

DESCRIPTION

"Specifies whether the node is restricted to not allowing support of SVCs transiting this node. This attribute determines the setting of the restricted transit bit in the nodal information group originated by this node."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.1.2.3"

DEFVAL { false }

::= { pnniNodeEntry 10 }

pnniNodeComplexRep OBJECT-TYPE

SYNTAX TruthValue
MAX-ACCESS read-create
STATUS current

DESCRIPTION

"Specifies whether this node uses the complex node representation. A value of `true` indicates that the complex node representation is used, whereas a value of `false` indicates that the simple node representation is used. This attribute determines the setting of the nodal representation bit in the nodal information group originated by this node."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.1.2.3"

::= { pnniNodeEntry 11 }

pnniNodeRestrictedBranching OBJECT-TYPE

SYNTAX TruthValue
MAX-ACCESS read-only
STATUS current

DESCRIPTION

"Indicates whether the node is able to support additional point-to-multipoint branches. A value of 'false' indicates that additional branches can be supported, and a value of 'true' indicates that additional branches cannot be supported. This attribute reflects the setting of the restricted branching bit in the nodal information group originated by this node."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.1.2.3"

::= { pnniNodeEntry 12 }

pnniNodeDatabaseOverload OBJECT-TYPE

SYNTAX TruthValue
MAX-ACCESS read-only

STATUS current
DESCRIPTION
"Specifies whether the node is currently operating in topology database overload state. This attribute has the same value as the Non-transit for PGL Election bit in the nodal information group originated by this node."
REFERENCE
"ATM Forum PNNI 1.1 Section 5.8.1.2.3"
 ::= { pnniNodeEntry 13 }

pnniNodePtsets OBJECT-TYPE

SYNTAX Gauge32
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Gauges the total number of PTSEs currently in this node's topology database(s)."
 ::= { pnniNodeEntry 14 }

pnniNodeRowStatus OBJECT-TYPE

SYNTAX RowStatus
MAX-ACCESS read-create
STATUS current
DESCRIPTION
"To create, delete, activate and de-activate a Node."
 ::= { pnniNodeEntry 15 }

pnniNodeCoBiTransportSupported OBJECT-TYPE

SYNTAX TruthValue
MAX-ACCESS read-create
STATUS current
DESCRIPTION
"Specifies whether the node supports CO-BI transport as part of generic support for supplementary services (see Annex L). This attribute determines the setting of the CO-BI transport supported bit in the nodal information group originated by this node."
REFERENCE
"ATM Forum PNNI 1.1 Section 5.8.1.2.3 as amended by Part 2 of PNNI Addendum on PNNI/B-QSIG Interworking and Generic Functional Protocol for the Support of Supplementary Services"
 ::= { pnniNodeEntry 16 }

pnniNodeClBiTransportSupported OBJECT-TYPE

SYNTAX TruthValue
MAX-ACCESS read-create
STATUS current
DESCRIPTION
"Specifies whether the node supports CL-BI transport as part of generic support for supplementary services (see Annex L). This attribute determines the setting of the CL-BI transport supported bit in the nodal information group originated by this node."
REFERENCE
"ATM Forum PNNI 1.1 Section 5.8.1.2.3 as amended by Part 2 of PNNI Addendum on PNNI/B-QSIG Interworking and Generic

```

        Functional Protocol for the Support of Supplementary
        Services"
 ::= { pnniNodeEntry 17 }

pnniNodeEmbedAddrAESAPrefixAdvType OBJECT-TYPE
    SYNTAX          INTEGER {
                        rightJustified(1),
                        leftJustified(2)
                    }
    MAX-ACCESS      read-create
    STATUS          current
    DESCRIPTION
        "Indicates in which format address prefixes shall be
        advertised for AESAs using AFIs indicating the presence
        of Embedded Addresses. The value 'rightJustified' indicates
        the deprecated format used in PNNI 1.0, while the value
        'leftJustified' format means that all leading semi-octets
        '0000' within the IDI are deleted as specified in PNNI 1.1
        section 5.2.2.1."
    REFERENCE
        "ATM Forum PNNI 1.1 Section 5.2.2.1"
 ::= { pnniNodeEntry 18 }

pnniNodeStartTimeStamp OBJECT-TYPE
    SYNTAX          TimeStamp
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "Indicates the time at which this node was
        last initialized. This value is not updated
        upon graceful restart."
 ::= { pnniNodeEntry 19 }

pnniNodeRestartAdminStatus OBJECT-TYPE
    SYNTAX          INTEGER {
                        up(1),
                        down(2)
                    }
    MAX-ACCESS      read-create
    STATUS          current
    DESCRIPTION
        "Indicates whether Graceful Restart capability
        is enabled on this node."
    DEFVAL { up }
 ::= { pnniNodeEntry 20 }

pnniNodeRestartOperStatus OBJECT-TYPE
    SYNTAX          INTEGER {
                        disabled(1),
                        noDatabaseAvailable(2),
                        inProgress(3),
                        ready(4)
                    }
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "Indicates the state of the Graceful Restart

```

```
        capability on this node."  
 ::= { pnniNodeEntry 21 }
```

```
pnniNodeResyncEnabled OBJECT-TYPE  
    SYNTAX      TruthValue  
    MAX-ACCESS  read-create  
    STATUS      current  
    DESCRIPTION  
        "Specifies whether the node is allowed to perform  
        database resynchronizations."  
    DEFVAL { true }  
 ::= { pnniNodeEntry 22 }
```

```
pnniNodeRestartInitTimeStamp OBJECT-TYPE  
    SYNTAX      TimeStamp  
    MAX-ACCESS  read-only  
    STATUS      current  
    DESCRIPTION  
        "Indicates the time at which this node  
        last initiated a graceful restart.  
        If no graceful restart has been performed since the network  
        management portion of the system was last re-initialized,  
        then the value zero is returned."  
 ::= { pnniNodeEntry 23 }
```

```
pnniNodeRestartDoneTimeStamp OBJECT-TYPE  
    SYNTAX      TimeStamp  
    MAX-ACCESS  read-only  
    STATUS      current  
    DESCRIPTION  
        "Indicates the time at which this node  
        last completed a graceful restart.  
        If there has been no completion of a graceful restart  
        since the network management portion of the system was  
        last re-initialized, then the value zero is returned."  
 ::= { pnniNodeEntry 24 }
```

```
pnniNodeLastBackupTimeStamp OBJECT-TYPE  
    SYNTAX      TimeStamp  
    MAX-ACCESS  read-only  
    STATUS      current  
    DESCRIPTION  
        "Indicates the time at which this node  
        last completed a database backup.  
        If there has been no completion of a database backup  
        since the network management portion of the system was  
        last re-initialized, then the value zero is returned."  
 ::= { pnniNodeEntry 25 }
```

```
-- PGL election table
```

```
pnniNodePglTable OBJECT-TYPE  
    SYNTAX      SEQUENCE OF PnniNodePglEntry  
    MAX-ACCESS  not-accessible  
    STATUS      current  
    DESCRIPTION
```

"Peer group leader election information for a PNNI node in this switching system."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.10.1"

::= { pnniMIBObjects 3 }

pnniNodePglEntry OBJECT-TYPE

SYNTAX PnniNodePglEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"An entry in the table, containing PGL election information of a PNNI logical node in this switching system."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.10.1"

AUGMENTS { pnniNodeEntry }

::= { pnniNodePglTable 1 }

PnniNodePglEntry ::=

SEQUENCE {

pnniNodePglLeadershipPriority	INTEGER,
pnniNodeCfgParentNodeIndex	PnniNodeIndex,
pnniNodePglInitTime	Integer32,
pnniNodePglOverrideDelay	Integer32,
pnniNodePglReelectTime	Integer32,
pnniNodePglState	INTEGER,
pnniNodePreferredPgl	PnniNodeId,
pnniNodePeerGroupLeader	PnniNodeId,
pnniNodePglTimeStamp	TimeStamp,
pnniNodeActiveParentNodeId	PnniNodeId

}

pnniNodePglLeadershipPriority OBJECT-TYPE

SYNTAX INTEGER (0..205)

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The Leadership priority value this node should advertise in its nodal information group for the given peer group. Only the value zero can be used with nodes that are not PGL/LGN capable. If there is no configured parent node index or no corresponding entry in the pnniNodeTable, then the advertised leadership priority is zero regardless of this value."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.10.1.2"

DEFVAL { 0 }

::= { pnniNodePglEntry 1 }

pnniNodeCfgParentNodeIndex OBJECT-TYPE

SYNTAX PnniNodeIndex

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The local node index used to identify the node that will represent this peer group at the next higher level of

hierarchy, if this node becomes peer group leader. The value 0 indicates that there is no parent node."

REFERENCE

"ATM Forum PNNI 1.1 Annex F"

DEFVAL { 0 }

::= { pnniNodePglEntry 2 }

pnniNodePglInitTime OBJECT-TYPE

SYNTAX Integer32

UNITS "seconds"

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The amount of time in seconds this node will delay advertising its choice of preferred PGL after having initialized operation and reached the full state with at least one neighbor in the peer group."

REFERENCE

"ATM Forum PNNI 1.1 Annex E PGLInitTime"

DEFVAL { 15 }

::= { pnniNodePglEntry 3 }

pnniNodePglOverrideDelay OBJECT-TYPE

SYNTAX Integer32

UNITS "seconds"

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The amount of time in seconds a node will wait for itself to be declared the preferred PGL by unanimous agreement among its peers. In the absence of unanimous agreement this will be the amount of time that will pass before this node considers a two thirds majority as sufficient agreement to declare itself peer group leader, abandoning the attempt to get unanimous agreement."

REFERENCE

"ATM Forum PNNI 1.1 Annex E OverrideDelay"

DEFVAL { 30 }

::= { pnniNodePglEntry 4 }

pnniNodePglReelectTime OBJECT-TYPE

SYNTAX Integer32

UNITS "seconds"

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The amount of time in seconds after losing connectivity to the current peer group leader, that this node will wait before re-starting the process of electing a new peer group leader."

REFERENCE

"ATM Forum PNNI 1.1 Annex E ReElectionInterval"

DEFVAL { 15 }

::= { pnniNodePglEntry 5 }

pnniNodePglState OBJECT-TYPE

SYNTAX INTEGER {

```

        starting(1),
        awaiting(2),
        awaitingFull(3),
        initialDelay(4),
        calculating(5),
        awaitUnanimity(6),
        operPgl(7),
        operNotPgl(8),
        hungElection(9),
        awaitReElection(10)
    }
MAX-ACCESS      read-only
STATUS          current
DESCRIPTION
    "Indicates the state that this node is in with respect to
    the Peer Group Leader election that takes place in the
    node's peer group. The values are enumerated in the Peer
    Group Leader State Machine."
REFERENCE
    "ATM Forum PNNI 1.1 Section 5.10.1.1.2"
 ::= { pnniNodePglEntry 6 }

pnniNodePreferredPgl OBJECT-TYPE
SYNTAX          PnniNodeId
MAX-ACCESS      read-only
STATUS          current
DESCRIPTION
    "The Node ID of
    the node which the local node believes should be or become
    the peer group leader. This is also the value the local
    node is currently advertising in the `Preferred Peer Group
    Leader Node ID' field of its nodal information group within
    the given peer group. If a Preferred PGL has not been
    chosen, this attribute's value is set to (all) zero(s)."
REFERENCE
    "ATM Forum PNNI 1.1 Section 5.10.1.1.6"
 ::= { pnniNodePglEntry 7 }

pnniNodePeerGroupLeader OBJECT-TYPE
SYNTAX          PnniNodeId
MAX-ACCESS      read-only
STATUS          current
DESCRIPTION
    "The Node Identifier of the node which is currently
    operating as peer group leader of the peer group this node
    belongs to. If a PGL has not been elected, this attribute's
    value is set to (all) zero(s)."
 ::= { pnniNodePglEntry 8 }

pnniNodePglTimeStamp OBJECT-TYPE
SYNTAX          TimeStamp
MAX-ACCESS      read-only
STATUS          current
DESCRIPTION
    "The time at which the current Peer Group Leader established
    itself."
 ::= { pnniNodePglEntry 9 }

```

pnniNodeActiveParentNodeId OBJECT-TYPE

SYNTAX PnniNodeId

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The Node Identifier value being used by the Peer Group Leader to represent this peer group at the next higher level of the hierarchy. If this node is at the highest level of the hierarchy or if no PGL has yet been elected the PNNI Protocol Entity sets the value of this attribute to (all) zero(s)."

::= { pnniNodePglEntry 10 }

-- initial timer values table

pnniNodeTimerTable OBJECT-TYPE

SYNTAX SEQUENCE OF PnniNodeTimerEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"A table of initial PNNI timer values and significant change thresholds."

::= { pnniMIBObjects 4 }

pnniNodeTimerEntry OBJECT-TYPE

SYNTAX PnniNodeTimerEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"An entry in the table, containing initial PNNI timer values and significant change thresholds of a PNNI logical node in this switching system."

AUGMENTS { pnniNodeEntry }

::= { pnniNodeTimerTable 1 }

PnniNodeTimerEntry ::=

SEQUENCE {

pnniNodePtseHolddown Integer32,

pnniNodeHelloHolddown Integer32,

pnniNodeHelloInterval Integer32,

pnniNodeHelloInactivityFactor Integer32,

pnniNodeHlinkInact Integer32,

pnniNodePtseRefreshInterval Integer32,

pnniNodePtseLifetimeFactor INTEGER,

pnniNodeRxmtInterval Integer32,

pnniNodePeerDelayedAckInterval Integer32,

pnniNodeAvcrPm INTEGER,

pnniNodeAvcrMt INTEGER,

pnniNodeCdvPm INTEGER,

pnniNodeCtdPm INTEGER,

pnniNodeBeCRT INTEGER,

pnniNodeGenerateUbrAvCR TruthValue,

pnniNodeGenerateBeCR TruthValue,

pnniNodeBeCRTuningFactor INTEGER,

pnniNodeAccBctPm INTEGER,

```

pnniNodeMinTimeToFlush      Integer32,
pnniNodeMaxTimeToFlush      Integer32,
pnniNodeGracefulRestartInterval Integer32,
pnniNodeDatabaseBackupInterval Integer32,
pnniNodeMaxResyncRetries     Integer32,
pnniNodeResyncInactInterval  Integer32,
pnniNodeResyncRetryInterval  Integer32,
pnniNodeNmaxresync           Integer32,
pnniNodeStressInactFacRestart Integer32
}

```

pnniNodePtseHolddown OBJECT-TYPE

```

SYNTAX      Integer32
UNITS       "100 milliseconds"
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "The initial value for the PTSE hold down timer that will be
    used by the given node to limit the rate at which it can
    re-originate PTSEs. It must be a positive non-zero number."
REFERENCE
    "ATM Forum PNNI 1.1 Annex E MinPTSEInterval"
DEFVAL { 10 }
 ::= { pnniNodeTimerEntry 1 }

```

pnniNodeHelloHolddown OBJECT-TYPE

```

SYNTAX      Integer32
UNITS       "100 milliseconds"
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "The initial value for the Hello hold down timer that will
    be used by the given node to limit the rate at which it
    sends Hellos. It must be a positive non-zero number."
REFERENCE
    "ATM Forum PNNI 1.1 Annex E MinHelloInterval"
DEFVAL { 10 }
 ::= { pnniNodeTimerEntry 2 }

```

pnniNodeHelloInterval OBJECT-TYPE

```

SYNTAX      Integer32
UNITS       "seconds"
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "The initial value for the Hello Timer.
    In the absence of triggered Hellos, this node will send one
    Hello packet on each of its ports on this interval."
REFERENCE
    "ATM Forum PNNI 1.1 Annex E HelloInterval"
DEFVAL { 15 }
 ::= { pnniNodeTimerEntry 3 }

```

pnniNodeHelloInactivityFactor OBJECT-TYPE

```

SYNTAX      Integer32
MAX-ACCESS  read-create
STATUS      current

```

DESCRIPTION

"The value for the Hello Inactivity factor that this node will use to determine when a neighbor has gone down."

REFERENCE

"ATM Forum PNNI 1.1 Annex E InactivityFactor"

DEFVAL { 5 }

::= { pnniNodeTimerEntry 4 }

pnniNodeHlinkInact OBJECT-TYPE

SYNTAX Integer32

UNITS "seconds"

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The amount of time a node will continue to advertise a horizontal (logical) link for which it has not received and processed a LGN Horizontal Link information group."

REFERENCE

"ATM Forum PNNI 1.1 Annex E HorizontalLinkInactivityTime"

DEFVAL { 120 }

::= { pnniNodeTimerEntry 5 }

pnniNodePtseRefreshInterval OBJECT-TYPE

SYNTAX Integer32

UNITS "seconds"

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The initial value for the Refresh timer that this node will use to drive (re-)origination of PTSEs in the absence of triggered updates."

REFERENCE

"ATM Forum PNNI 1.1 Annex E PTSERefreshInterval"

DEFVAL { 1800 }

::= { pnniNodeTimerEntry 6 }

pnniNodePtseLifetimeFactor OBJECT-TYPE

SYNTAX INTEGER (101..1000)

UNITS "percent"

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The value for the lifetime multiplier, expressed as a percentage. The result of multiplying the pnniNodePtseRefreshInterval attribute value by this attribute value is used as the initial lifetime that this node places into self-originated PTSEs."

REFERENCE

"ATM Forum PNNI 1.1 Annex E PTSELifetimeFactor"

DEFVAL { 200 }

::= { pnniNodeTimerEntry 7 }

pnniNodeRxmtInterval OBJECT-TYPE

SYNTAX Integer32

UNITS "seconds"

```

MAX-ACCESS      read-create
STATUS          current
DESCRIPTION
    "The period between retransmissions of unacknowledged
    Database Summary packets, PTSE Request packets, and PTSPs."
REFERENCE
    "ATM Forum PNNI 1.1 Annex E DSRxmtInterval,
    RequestRxmtInterval, PTSERetransmissionInterval"
DEFVAL { 5 }
 ::= { pnniNodeTimerEntry 8 }

pnniNodePeerDelayedAckInterval OBJECT-TYPE
SYNTAX          Integer32
UNITS           "100 milliseconds"
MAX-ACCESS      read-create
STATUS          current
DESCRIPTION
    "The minimum amount of time between transmissions of
    delayed PTSE acknowledgement packets."
REFERENCE
    "ATM Forum PNNI 1.1 Annex E PeerDelayedAckInterval,
    Appendix G"
DEFVAL { 10 }
 ::= { pnniNodeTimerEntry 9 }

pnniNodeAvcrPm OBJECT-TYPE
SYNTAX          INTEGER (1..99)
UNITS           "percent"
MAX-ACCESS      read-create
STATUS          current
DESCRIPTION
    "The proportional multiplier used in the algorithms that
    determine significant change for AvCR parameters, expressed
    as a percentage."
REFERENCE
    "ATM Forum PNNI 1.1 Section 5.8.5.2.5.4, Annex E AvCR_PM"
DEFVAL { 50 }
 ::= { pnniNodeTimerEntry 10 }

pnniNodeAvcrMt OBJECT-TYPE
SYNTAX          INTEGER (1..99)
UNITS           "percent"
MAX-ACCESS      read-create
STATUS          current
DESCRIPTION
    "The minimum threshold used in the algorithms that determine
    significant change for AvCR parameters, expressed as a
    percentage."
REFERENCE
    "ATM Forum PNNI 1.1 Section 5.8.5.2.5.4, Annex E AvCR_mT"
DEFVAL { 3 }
 ::= { pnniNodeTimerEntry 11 }

pnniNodeCdvPm OBJECT-TYPE
SYNTAX          INTEGER (1..99)
UNITS           "percent"
MAX-ACCESS      read-create

```

STATUS current
DESCRIPTION
"The proportional multiplier used in the algorithms that determine significant change for CDV metrics, expressed as a percentage."
REFERENCE
"ATM Forum PNNI 1.1 Section 5.8.5.2.5.6, Annex E CDV_PM"
DEFVAL { 25 }
::= { pnniNodeTimerEntry 12 }

pnniNodeCtdPm OBJECT-TYPE

SYNTAX INTEGER (1..99)
UNITS "percent"
MAX-ACCESS read-create
STATUS current
DESCRIPTION
"The proportional multiplier used in the algorithms that determine significant change for CTD metrics, expressed as a percentage."
REFERENCE
"ATM Forum PNNI 1.1 Section 5.8.5.2.5.5, Annex E maxCTD_PM"
DEFVAL { 50 }
::= { pnniNodeTimerEntry 13 }

pnniNodeBeCRT OBJECT-TYPE

SYNTAX INTEGER (1..1000)
UNITS "percent"
MAX-ACCESS read-create
STATUS current
DESCRIPTION
"The threshold used in the algorithms that determine significant change for BeCR parameters, expressed as a percentage of maxCR. This object is not applicable when pnniNodeGenerateBeCR is `false`."
REFERENCE
"UBR with MDCR Addendum to UNI Signalling 4.0, PNNI 1.0 and AINI"
DEFVAL { 20 }
::= { pnniNodeTimerEntry 14 }

pnniNodeGenerateUbrAvCR OBJECT-TYPE

SYNTAX TruthValue
MAX-ACCESS read-create
STATUS current
DESCRIPTION
"Indicates whether the AvCR Indicator for UBR is set to '1' in RAIGs originated by this node."
REFERENCE
"UBR with MDCR Addendum to UNI Signalling 4.0, PNNI 1.0 and AINI"
::= { pnniNodeTimerEntry 15 }

pnniNodeGenerateBeCR OBJECT-TYPE

SYNTAX TruthValue
MAX-ACCESS read-create
STATUS current
DESCRIPTION
"Indicates whether a BeCR information group is generated in RAIGs originated by this node. This object

is not applicable when pnniNodeGenerateUbrAvCR is
`false'."

REFERENCE

"UBR with MDCR Addendum to UNI Signalling 4.0, PNNI 1.0 and AINI"
::= { pnniNodeTimerEntry 16 }

pnniNodeBeCRTuningFactor OBJECT-TYPE

SYNTAX INTEGER (1..10000)
UNITS "percent"
MAX-ACCESS read-create
STATUS current

DESCRIPTION

"The BeCR values derived by this node are multiplied by the value of this object before they are advertised in PNNI. This allows for normalization of BeCR values in multi-vendor environments where the capabilities of the switches are well known (e.g. through lab tests and interoperability tests).

This object is not applicable when pnniNodeGenerateBeCR is `false' or pnniNodeLowest is `false'."

REFERENCE

"UBR with MDCR Addendum to UNI Signalling 4.0, PNNI 1.0 and AINI"
DEFVAL { 100 }
::= { pnniNodeTimerEntry 17 }

pnniNodeAccBctPm OBJECT-TYPE

SYNTAX INTEGER (1..99)
UNITS "percent"
MAX-ACCESS read-create
STATUS current

DESCRIPTION

"The proportional multiplier used in the algorithms that determine significant change for AccBCT parameters, expressed as a percentage."

REFERENCE

"ATM Forum Guaranteed Frame Rate (GFR) Signalling Specification (PNNI, AINI, and UNI), Version 1.0 Section 4.2"
DEFVAL { 25 }
::= { pnniNodeTimerEntry 18 }

pnniNodeMinTimeToFlush OBJECT-TYPE

SYNTAX Integer32
UNITS "seconds"
MAX-ACCESS read-create
STATUS current

DESCRIPTION

"The initial amount of time to wait before the peer group leader attempts to flood the valid instance of a higher level PTSE into its peer group, after the peer group leader has proxy flushed an invalid instance of the same PTSE."

REFERENCE

"ATM Forum PNNI 1.1 section 5.10.4.1"
DEFVAL { 40 }
::= { pnniNodeTimerEntry 19 }

pnniNodeMaxTimeToFlush OBJECT-TYPE

SYNTAX Integer32
UNITS "seconds"
MAX-ACCESS read-create
STATUS current
DESCRIPTION
"The maximum amount of time to wait before the peer group leader attempts to flood the valid instance of a higher level PTSE into its peer group, after the peer group leader has proxy flushed an invalid instance of the same PTSE. This value is used when proxy flushing fails several times for the same PTSE."
REFERENCE
"ATM Forum PNNI 1.1 section 5.10.4.1"
DEFVAL { 320 }
::= { pnniNodeTimerEntry 20 }

pnniNodeGracefulRestartInterval OBJECT-TYPE

SYNTAX Integer32 (1..3600)
UNITS "seconds"
MAX-ACCESS read-create
STATUS current
DESCRIPTION
"The period of time that a node which initiates graceful restart has to complete the graceful restart procedures."
REFERENCE
"PNNI Routing Resynchronization Control, section 3.1.2.2"
DEFVAL { 300 }
::= { pnniNodeTimerEntry 21 }

pnniNodeDatabaseBackupInterval OBJECT-TYPE

SYNTAX Integer32 (1..86400)
UNITS "seconds"
MAX-ACCESS read-create
STATUS current
DESCRIPTION
"The period of time between successive backups of this node's database."
REFERENCE
"PNNI Routing Resynchronization Control, section 3.1.1"
DEFVAL { 300 }
::= { pnniNodeTimerEntry 22 }

pnniNodeMaxResyncRetries OBJECT-TYPE

SYNTAX Integer32 (0..1000)
MAX-ACCESS read-create
STATUS current
DESCRIPTION
"The maximum number of times the database resynchronization is expected to be held off by congestion. If the database resynchronization is delayed by more than this number of retries, management should be notified."
REFERENCE
"PNNI Routing Resynchronization Control, section 3.2, new section 5.7.10 of PNNI 1.1"
DEFVAL { 10 }
::= { pnniNodeTimerEntry 23 }

pnniNodeResyncInactInterval OBJECT-TYPE
SYNTAX Integer32 (1..3600)
UNITS "seconds"
MAX-ACCESS read-create
STATUS current
DESCRIPTION
"The amount of time before a node declares a database
resynchronization with a neighbor has failed and that it
shall start a database synchronization in the Negotiating
state."
REFERENCE
"PNNI Routing Resynchronization Control, section 3.2, new
section 5.7.9 of PNNI 1.1"
DEFVAL { 180 }
::= { pnniNodeTimerEntry 24 }

pnniNodeResyncRetryInterval OBJECT-TYPE
SYNTAX Integer32 (1..3600)
UNITS "seconds"
MAX-ACCESS read-create
STATUS current
DESCRIPTION
"The amount of time to delay when a database
resynchronization is requested but cannot be
attempted due to congestion as indicated by the
Neighboring Peer Congestion Status. After this
time delay the node requests resynchronization
again."
REFERENCE
"PNNI Routing Resynchronization Control, section 3.2, new
section 5.7.10 of PNNI 1.1"
DEFVAL { 20 }
::= { pnniNodeTimerEntry 25 }

pnniNodeNmaxresync OBJECT-TYPE
SYNTAX Integer32 (0..1000)
MAX-ACCESS read-create
STATUS current
DESCRIPTION
"Maximum number of adjacencies to be resynchronized
simultaneously at a node. The distinguished value
zero indicates that there is no limit on the
number of adjacencies that can be resynchronized
simultaneously."
REFERENCE
"PNNI Routing Resynchronization Control, section 3.2, new
section 5.7.11 of PNNI 1.1"
DEFVAL { 20 }
::= { pnniNodeTimerEntry 26 }

pnniNodeStressInactFacRestart OBJECT-TYPE
SYNTAX Integer32 (1..100)
MAX-ACCESS read-create
STATUS current
DESCRIPTION
"The multiplier to be used to increase the Hello

```

        Inactivity time and Horizontal Link Inactivity time
        during PNNI Graceful Restart."
REFERENCE
    "PNNI Routing Resynchronization Control,
    section 3.1.2.2"
DEFVAL { 4 }
::= { pnniNodeTimerEntry 27 }

-- nodal SVCC-based RCC variables table

pnniNodeSvccTable OBJECT-TYPE
    SYNTAX          SEQUENCE OF PnniNodeSvccEntry
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION
        "A table of variables related to SVCC-based routing control
        channels."
    REFERENCE
        "ATM Forum PNNI 1.1 Section 5.5"
    ::= { pnniMIBObjects 5 }

pnniNodeSvccEntry OBJECT-TYPE
    SYNTAX          PnniNodeSvccEntry
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION
        "An entry in the table, containing SVCC-based RCC variables
        of a PNNI logical node in this switching system."
    REFERENCE
        "ATM Forum PNNI 1.1 Section 5.5"
    AUGMENTS        { pnniNodeEntry }
    ::= { pnniNodeSvccTable 1 }

PnniNodeSvccEntry ::=
    SEQUENCE {
        pnniNodeSvccInitTime          Integer32,
        pnniNodeSvccRetryTime         Integer32,
        pnniNodeSvccCallingIntegrityTime Integer32,
        pnniNodeSvccCalledIntegrityTime Integer32,
        pnniNodeSvccTrafficDescriptorIndex AtmTrafficDescrParamIndex,
        pnniNodeSvccFailuresTrapEnable TruthValue,
        pnniNodeSvccFailuresThreshold Integer32,
        pnniNodeSvccRemovalTrapEnable TruthValue,
        pnniNodeSvccTestIntervalEnable TruthValue,
        pnniNodeSvccTestInterval      Integer32,
        pnniNodeSvccTestAtmAddress     PnniAtmAddr,
        pnniNodeSvccTestTrapEnable     TruthValue
    }

pnniNodeSvccInitTime OBJECT-TYPE
    SYNTAX          Integer32
    UNITS           "seconds"
    MAX-ACCESS      read-create
    STATUS          current
    DESCRIPTION
        "The amount of time this node will delay initiating

```

establishment of an SVCC to a neighbor with a numerically lower ATM address, after determining that such an SVCC should be established."

REFERENCE

"ATM Forum PNNI 1.1 Annex E InitialLGNSVCTimeout"

DEFVAL { 4 }

::= { pnniNodeSvccEntry 1 }

pnniNodeSvccRetryTime OBJECT-TYPE

SYNTAX Integer32

UNITS "seconds"

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The amount of time this node will delay after an apparently still necessary and viable SVCC-based RCC is unexpectedly torn down, before attempting to re-establish it."

REFERENCE

"ATM Forum PNNI 1.1 Annex E RetryLGNSVCTimeout"

DEFVAL { 30 }

::= { pnniNodeSvccEntry 2 }

pnniNodeSvccCallingIntegrityTime OBJECT-TYPE

SYNTAX Integer32

UNITS "seconds"

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The amount of time this node will wait for an SVCC, which it has initiated establishment of as the calling party, to become fully established before giving up and tearing it down."

REFERENCE

"ATM Forum PNNI 1.1 Annex E SVCCallingIntegrityTime"

DEFVAL { 35 }

::= { pnniNodeSvccEntry 3 }

pnniNodeSvccCalledIntegrityTime OBJECT-TYPE

SYNTAX Integer32

UNITS "seconds"

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The amount of time this node will wait for an SVCC, which it has decided to accept as the called party, to become fully established before giving up and tearing it down."

REFERENCE

"ATM Forum PNNI 1.1 Annex E SVCCalledIntegrityTime"

DEFVAL { 50 }

::= { pnniNodeSvccEntry 4 }

pnniNodeSvccTrafficDescriptorIndex OBJECT-TYPE

SYNTAX AtmTrafficDescrParamIndex

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"An index into the atmTrafficDescrParamTable defined in

RFC 2515. This traffic descriptor is used when establishing switched virtual channels for use as SVCC-based RCCs to/from PNNI logical group nodes."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.5.2, Annex E
RCCMaximumBurstSize, RCCPeakCellRate,
RCCSustainableCellRate"

::= { pnniNodeSvccEntry 5 }

pnniNodeSvccFailuresTrapEnable OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"Controls the generation of the pnniSvccFailureNotif traps in response to SVCC-based RCC connection establishment failures. The trap will only be raised if the value of this object is set to 'true'."

DEFVAL { false }

::= { pnniNodeSvccEntry 6 }

pnniNodeSvccFailuresThreshold OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"Indicates the number of consecutive SVCC-based RCC connection establishment failures that must occur before the generation of the pnniSvccFailureNotif trap. A single SVCC-based RCC connection establishment attempt may include several SVCC connection establishment attempts as described in section 5.5.4 of PNNI 1.1. All the SVCC connection establishments attempts must fail before the SVCC-based RCC connection establishment attempt is counted as a failure.

When a value of zero is assigned to this object, the node shall generate the trap after a single SVCC-based RCC connection establishment failure (i.e. the value zero triggers equivalent behavior as the value one)."

DEFVAL { 1 }

::= { pnniNodeSvccEntry 7 }

pnniNodeSvccRemovalTrapEnable OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"Controls the generation of the pnniSvccRemovalNotif traps in response to a deletion of the pnniSvccRccEntry due to loss of the neighbor relationship.

The trap will only be raised if the value of this object is set to 'true'."

DEFVAL { false }

::= { pnniNodeSvccEntry 8 }

pnniNodeSvccTestIntervalEnable OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-create
STATUS current
DESCRIPTION
"Specifies whether the node should perform periodic SVCC-based RCC diagnostic tests. The setting of this object has no effect on the ability to perform manually driven SVCC-based RCC diagnostic tests through the setting of the pnniSvccRccTestTriggerTest object."
REFERENCE
"PNNI Addendum for SVCC-based RCC Diagnostic Tests, Version 1.0, af-cs-0203.000"
DEFVAL { false }
 ::= { pnniNodeSvccEntry 9 }

pnniNodeSvccTestInterval OBJECT-TYPE

SYNTAX Integer32
UNITS "seconds"
MAX-ACCESS read-create
STATUS current
DESCRIPTION
"The value for the SVCC-based RCC diagnostic test timer. This node will initiate an SVCC-based RCC diagnostic test to each of its neighbor peer LGNs on this interval."
REFERENCE
"PNNI Addendum for SVCC-based RCC Diagnostic Tests, Version 1.0, af-cs-0203.000"
DEFVAL { 300 }
 ::= { pnniNodeSvccEntry 10 }

pnniNodeSvccTestAtmAddress OBJECT-TYPE

SYNTAX PnniAtmAddr
MAX-ACCESS read-create
STATUS current
DESCRIPTION
"The address to use as the Calling Party Number for SVCC-based RCC diagnostic tests initiated by this node."
REFERENCE
"PNNI Addendum for SVCC-based RCC Diagnostic Tests, Version 1.0, af-cs-0203.000 "
 ::= { pnniNodeSvccEntry 11 }

pnniNodeSvccTestTrapEnable OBJECT-TYPE

SYNTAX TruthValue
MAX-ACCESS read-create
STATUS current
DESCRIPTION
"Specifies whether the node should generate the pnniSvccRccTestNotif trap."
REFERENCE
"PNNI Addendum for SVCC-based RCC Diagnostic Tests, Version 1.0, af-cs-0203.000"
DEFVAL { false }
 ::= { pnniNodeSvccEntry 12 }

-- scope mapping table

pnniScopeMappingTable OBJECT-TYPE

SYNTAX SEQUENCE OF PnniScopeMappingEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"The pnniScopeTable contains the mappings of membership and connection scope from organizational scope values (used at UNI interfaces) to PNNI scope (i.e. in terms of PNNI routing level indicators)."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.3.6"

::= { pnniMIBObjects 6 }

pnniScopeMappingEntry OBJECT-TYPE

SYNTAX PnniScopeMappingEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"An entry in the table, containing scope mapping information for a PNNI logical node in this switching system."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.3.6"

AUGMENTS { pnniNodeEntry }

::= { pnniScopeMappingTable 1 }

PnniScopeMappingEntry ::=

SEQUENCE {

pnniScopeLocalNetwork PnniLevel,

pnniScopeLocalNetworkPlusOne PnniLevel,

pnniScopeLocalNetworkPlusTwo PnniLevel,

pnniScopeSiteMinusOne PnniLevel,

pnniScopeIntraSite PnniLevel,

pnniScopeSitePlusOne PnniLevel,

pnniScopeOrganizationMinusOne PnniLevel,

pnniScopeIntraOrganization PnniLevel,

pnniScopeOrganizationPlusOne PnniLevel,

pnniScopeCommunityMinusOne PnniLevel,

pnniScopeIntraCommunity PnniLevel,

pnniScopeCommunityPlusOne PnniLevel,

pnniScopeRegional PnniLevel,

pnniScopeInterRegional PnniLevel,

pnniScopeGlobal PnniLevel

}

pnniScopeLocalNetwork OBJECT-TYPE

SYNTAX PnniLevel

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The highest level of PNNI hierarchy (i.e. smallest PNNI routing level) that lies within the organizational scope value localNetwork(1)."

DEFVAL { 96 }

::= { pnniScopeMappingEntry 1 }

```

pnniScopeLocalNetworkPlusOne OBJECT-TYPE
    SYNTAX          PnniLevel
    MAX-ACCESS      read-create
    STATUS          current
    DESCRIPTION
        "The highest level of PNNI hierarchy (i.e. smallest PNNI
         routing level) that lies within the organizational scope
         value localNetworkPlusOne(2)."

```



```

MAX-ACCESS      read-create
STATUS          current
DESCRIPTION
    "The highest level of PNNI hierarchy (i.e. smallest PNNI
    routing level) that lies within the organizational scope
    value organizationMinusOne(7)."
```

```

DEFVAL { 72 }
::= { pnniScopeMappingEntry 7 }
```

```

pnniScopeIntraOrganization OBJECT-TYPE
SYNTAX          PnniLevel
MAX-ACCESS      read-create
STATUS          current
DESCRIPTION
    "The highest level of PNNI hierarchy (i.e. smallest PNNI
    routing level) that lies within the organizational scope
    value intraOrganization(8)."
```

```

DEFVAL { 64 }
::= { pnniScopeMappingEntry 8 }
```

```

pnniScopeOrganizationPlusOne OBJECT-TYPE
SYNTAX          PnniLevel
MAX-ACCESS      read-create
STATUS          current
DESCRIPTION
    "The highest level of PNNI hierarchy (i.e. smallest PNNI
    routing level) that lies within the organizational scope
    value organizationPlusOne(9)."
```

```

DEFVAL { 64 }
::= { pnniScopeMappingEntry 9 }
```

```

pnniScopeCommunityMinusOne OBJECT-TYPE
SYNTAX          PnniLevel
MAX-ACCESS      read-create
STATUS          current
DESCRIPTION
    "The highest level of PNNI hierarchy (i.e. smallest PNNI
    routing level) that lies within the organizational scope
    value communityMinusOne(10)."
```

```

DEFVAL { 64 }
::= { pnniScopeMappingEntry 10 }
```

```

pnniScopeIntraCommunity OBJECT-TYPE
SYNTAX          PnniLevel
MAX-ACCESS      read-create
STATUS          current
DESCRIPTION
    "The highest level of PNNI hierarchy (i.e. smallest PNNI
    routing level) that lies within the organizational scope
    value intraCommunity(11)."
```

```

DEFVAL { 48 }
::= { pnniScopeMappingEntry 11 }
```

```

pnniScopeCommunityPlusOne OBJECT-TYPE
SYNTAX          PnniLevel
MAX-ACCESS      read-create
STATUS          current
```

```

DESCRIPTION
    "The highest level of PNNI hierarchy (i.e. smallest PNNI
    routing level) that lies within the organizational scope
    value communityPlusOne(12)."
```

DEFVAL { 48 }

```
 ::= { pnniScopeMappingEntry 12 }
```

pnniScopeRegional OBJECT-TYPE

```
SYNTAX      PnniLevel
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "The highest level of PNNI hierarchy (i.e. smallest PNNI
    routing level) that lies within the organizational scope
    value regional(13)."
```

DEFVAL { 32 }

```
 ::= { pnniScopeMappingEntry 13 }
```

pnniScopeInterRegional OBJECT-TYPE

```
SYNTAX      PnniLevel
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "The highest level of PNNI hierarchy (i.e. smallest PNNI
    routing level) that lies within the organizational scope
    value interRegional(14)."
```

DEFVAL { 32 }

```
 ::= { pnniScopeMappingEntry 14 }
```

pnniScopeGlobal OBJECT-TYPE

```
SYNTAX      PnniLevel
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "The highest level of PNNI hierarchy (i.e. smallest PNNI
    routing level) that lies within the organizational scope
    value global(15)."
```

DEFVAL { 0 }

```
 ::= { pnniScopeMappingEntry 15 }
```

-- Deprecated summary advertising table

pnniSummaryTable OBJECT-TYPE

```
SYNTAX      SEQUENCE OF PnniSummaryEntry
MAX-ACCESS  not-accessible
STATUS      deprecated
DESCRIPTION
    "A list of the summary address prefixes that may be
    advertised by the specified logical PNNI entity."
```

REFERENCE

```
    "ATM Forum PNNI 1.1 Section 5.9.2"
```

```
 ::= { pnniMIBObjects 7 }
```

pnniSummaryEntry OBJECT-TYPE

```
SYNTAX      PnniSummaryEntry
MAX-ACCESS  not-accessible
```

STATUS deprecated
DESCRIPTION
"An entry in the table, containing summary address prefix information in this switching system."
REFERENCE
"ATM Forum PNNI 1.1 Section 5.9.2"
INDEX { pnniNodeIndex,
 pnniSummaryAddress,
 pnniSummaryPrefixLength }
::= { pnniSummaryTable 1 }

PnniSummaryEntry ::=
SEQUENCE {
 pnniSummaryAddress AtmAddrPrefix,
 pnniSummaryPrefixLength PnniPrefixLength,
 pnniSummaryType INTEGER,
 pnniSummarySuppress TruthValue,
 pnniSummaryState INTEGER,
 pnniSummaryRowStatus RowStatus
}

pnniSummaryAddress OBJECT-TYPE
SYNTAX AtmAddrPrefix
MAX-ACCESS not-accessible
STATUS deprecated
DESCRIPTION
"The ATM End System Address prefix for the summary."
::= { pnniSummaryEntry 1 }

pnniSummaryPrefixLength OBJECT-TYPE
SYNTAX PnniPrefixLength
MAX-ACCESS not-accessible
STATUS deprecated
DESCRIPTION
"The prefix length for the summary."
::= { pnniSummaryEntry 2 }

pnniSummaryType OBJECT-TYPE
SYNTAX INTEGER { internal(1), exterior(2) }
MAX-ACCESS read-create
STATUS deprecated
DESCRIPTION
"The type (e.g. internal or exterior) of summary being described."
DEFVAL { internal }
::= { pnniSummaryEntry 3 }

pnniSummarySuppress OBJECT-TYPE
SYNTAX TruthValue
MAX-ACCESS read-create
STATUS deprecated
DESCRIPTION
"Determines what is done with addresses that are being summarized by the instance. The default value (e.g. false) will indicate that the summary should propagate into the peer group. Network Management will be able to set the value of this attribute to 'suppress' (e.g. true), which

```

        suppresses the summary and any reachable addresses it
        summarizes from being advertised into the peer group."
DEFVAL { false }
 ::= { pnniSummaryEntry 4 }

pnniSummaryState OBJECT-TYPE
    SYNTAX          INTEGER {
                                advertising(1),
                                suppressing(2),
                                inactive(3)
                            }
    MAX-ACCESS      read-only
    STATUS          deprecated
    DESCRIPTION
        "Indicates whether the summary is currently being advertised
        by the node within the local switching system into its peer
        group."
    ::= { pnniSummaryEntry 5 }

pnniSummaryRowStatus OBJECT-TYPE
    SYNTAX          RowStatus
    MAX-ACCESS      read-create
    STATUS          deprecated
    DESCRIPTION
        "To create, delete, activate and de-activate a summary."
    ::= { pnniSummaryEntry 6 }

-- Summary address table

pnniSummaryAddressTable OBJECT-TYPE
    SYNTAX          SEQUENCE OF PnniSummaryAddressEntry
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION
        "A list of the summary address prefixes that may be
        advertised by the specified logical PNNI entity."
    REFERENCE
        "ATM Forum PNNI 1.1 Section 5.9.2"
    ::= { pnniMIBObjects 20 }

pnniSummaryAddressEntry OBJECT-TYPE
    SYNTAX          PnniSummaryAddressEntry
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION
        "An entry in the table, containing summary address prefix
        information in this switching system."
    REFERENCE
        "ATM Forum PNNI 1.1 Section 5.9.2"
    INDEX          { pnniNodeIndex,
                    pnniSummaryAddressType,
                    pnniSummaryAddressAddress,
                    pnniSummaryAddressPrefixLength }
    ::= { pnniSummaryAddressTable 1 }

PnniSummaryAddressEntry ::=

```

```

SEQUENCE {
    pnniSummaryAddressType          INTEGER,
    pnniSummaryAddressAddress       AtmAddrPrefix,
    pnniSummaryAddressPrefixLength  PnniPrefixLength,
    pnniSummaryAddressSuppress      TruthValue,
    pnniSummaryAddressState         INTEGER,
    pnniSummaryAddressRowStatus     RowStatus
}

```

pnniSummaryAddressType OBJECT-TYPE

```
SYNTAX      INTEGER { internal(1), exterior(2) }
```

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

```
STATUS      current
```

DESCRIPTION

"The type (e.g. internal or exterior) of summary being described."

```
::= { pnniSummaryAddressEntry 1 }
```

pnniSummaryAddressAddress OBJECT-TYPE

```
SYNTAX      AtmAddrPrefix
```

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

```
STATUS      current
```

DESCRIPTION

"The ATM End System Address prefix for the summary."

```
::= { pnniSummaryAddressEntry 2 }
```

pnniSummaryAddressPrefixLength OBJECT-TYPE

```
SYNTAX      PnniPrefixLength
```

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

```
STATUS      current
```

DESCRIPTION

"The prefix length for the summary."

```
::= { pnniSummaryAddressEntry 3 }
```

pnniSummaryAddressSuppress OBJECT-TYPE

```
SYNTAX      TruthValue
```

```
MAX-ACCESS  read-create
```

```
STATUS      current
```

DESCRIPTION

"Determines what is done with addresses that are being summarized by the instance. The default value (e.g. false) will indicate that the summary should propagate into the peer group. Network Management will be able to set the value of this attribute to 'suppress' (e.g. true), which suppresses the summary and any reachable addresses it summarizes from being advertised into the peer group."

```
DEFVAL { false }
```

```
::= { pnniSummaryAddressEntry 4 }
```

pnniSummaryAddressState OBJECT-TYPE

```
SYNTAX      INTEGER {
                    advertising(1),
                    suppressing(2),
                    inactive(3)
                }
```

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

```

STATUS          current
DESCRIPTION
    "Indicates whether the summary is currently being advertised
    by the node within the local switching system into its peer
    group."
::= { pnniSummaryAddressEntry 5 }

pnniSummaryAddressRowStatus OBJECT-TYPE
SYNTAX          RowStatus
MAX-ACCESS      read-create
STATUS          current
DESCRIPTION
    "To create, delete, activate and de-activate a summary."
::= { pnniSummaryAddressEntry 6 }

-- Interface table

pnniIfTable OBJECT-TYPE
SYNTAX          SEQUENCE OF PnniIfEntry
MAX-ACCESS      not-accessible
STATUS          current
DESCRIPTION
    "The pnniIfTable contains the attributes necessary to
    configure a physical interface on a switching system which
    is capable of being used for PNNI routing.  Interfaces may
    represent physical connection points (i.e. copper/fiber
    connection points) or VPCs which have been configured for
    PNNI's use.  Each interface is attached to a specific
    lowest-level node within the switching system.

    An ifIndex is used as the instance ID to uniquely identify
    the interface on the local switching system.  This index has
    the same value as the ifIndex object defined in RFC 1573
    for the same interface, since this table correlates with
    the ifTable in RFC 1573.

    One row in this table is created by the managed system for
    each row in the ifTable that has an ifType of atm(37) or
    atmLogical(80)."
```

```

::= { pnniMIBObjects 8 }

pnniIfEntry OBJECT-TYPE
SYNTAX          PnniIfEntry
MAX-ACCESS      not-accessible
STATUS          current
DESCRIPTION
    "An entry in the table, containing PNNI specific interface
    information in this switching system."
INDEX          { ifIndex }
::= { pnniIfTable 1 }

PnniIfEntry ::=
SEQUENCE {
    pnniIfNodeIndex      PnniNodeIndex,
    pnniIfPortId         PnniPortId,
    pnniIfAggrToken      PnniAggrToken,
```

```

    pnniIfVPCapability      TruthValue,
    pnniIfAdmWeightCbr      Unsigned32,
    pnniIfAdmWeightRtVbr    Unsigned32,
    pnniIfAdmWeightNrtVbr   Unsigned32,
    pnniIfAdmWeightAbr      Unsigned32,
    pnniIfAdmWeightUbr      Unsigned32,
    pnniIfRccServiceCategory ServiceCategory,
    pnniIfRccTrafficDescrIndex AtmTrafficDescrParamIndex,
    pnniIfAdmWeightGfr      Unsigned32
}

```

pnniIfNodeIndex OBJECT-TYPE

```

SYNTAX      PnniNodeIndex (1..65535)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Identifies the node within the switching system that the
    interface is directly attached to. The value zero is not
    a valid value."
DEFVAL { 1 }
 ::= { pnniIfEntry 1 }

```

pnniIfPortId OBJECT-TYPE

```

SYNTAX      PnniPortId
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "The Port Identifier of the port as selected by the PNNI
    protocol entity for the given interface. This value has
    meaning only within the context of the node to which the
    port is attached. The distinguished value zero indicates
    that no PNNI Port Identifier has been assigned for this
    interface (for example, this value may be used when the
    interface is not running PNNI)."
REFERENCE
    "ATM Forum PNNI 1.1 Section 5.3.4"
 ::= { pnniIfEntry 2 }

```

pnniIfAggrToken OBJECT-TYPE

```

SYNTAX      PnniAggrToken
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "The configured aggregation token for this interface. The
    aggregation token controls what other links the link
    associated with this interface will be aggregated together
    with."
REFERENCE
    "ATM Forum PNNI 1.1 Sections 5.3.5, 5.10.3.1"
DEFVAL { 0 }
 ::= { pnniIfEntry 3 }

```

pnniIfVPCapability OBJECT-TYPE

```

SYNTAX      TruthValue
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION

```

"Indicates whether the interface is capable of having VPCs established within it or not.

This object may only have the value `true' for physical ATM interfaces, i.e. those with an ifType of atm(37)."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.14.9.1 Table 5-34"

::= { pnniIfEntry 4 }

pnniIfAdmWeightCbr OBJECT-TYPE

SYNTAX Unsigned32 (1..16777215)

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"The administrative weight of this interface for the constant bit rate service category."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.1.1.3.4"

DEFVAL { 5040 }

::= { pnniIfEntry 5 }

pnniIfAdmWeightRtVbr OBJECT-TYPE

SYNTAX Unsigned32 (1..16777215)

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"The administrative weight of this interface for the real-time variable bit rate service category."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.1.1.3.4"

DEFVAL { 5040 }

::= { pnniIfEntry 6 }

pnniIfAdmWeightNrtVbr OBJECT-TYPE

SYNTAX Unsigned32 (1..16777215)

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"The administrative weight of this interface for the non-real-time variable bit rate service category."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.1.1.3.4"

DEFVAL { 5040 }

::= { pnniIfEntry 7 }

pnniIfAdmWeightAbr OBJECT-TYPE

SYNTAX Unsigned32 (1..16777215)

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"The administrative weight of this interface for the available bit rate service category."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.1.1.3.4"

DEFVAL { 5040 }

::= { pnniIfEntry 8 }


```

pnniIfAdmWeightUbr OBJECT-TYPE
    SYNTAX      Unsigned32 (1..16777215)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The administrative weight of this interface for the
        unspecified bit rate service category."
    REFERENCE
        "ATM Forum PNNI 1.1 Section 5.8.1.1.3.4"
    DEFVAL { 5040 }
    ::= { pnniIfEntry 9 }

pnniIfRccServiceCategory OBJECT-TYPE
    SYNTAX      ServiceCategory
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The service category used for the PNNI routing control
        channel (VCI=18) on this interface."
    REFERENCE
        "ATM Forum PNNI 1.1 Sections 5.5.2, 5.5.3"

    ::= { pnniIfEntry 10 }

pnniIfRccTrafficDescrIndex OBJECT-TYPE
    SYNTAX      AtmTrafficDescrParamIndex
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The traffic descriptor index referring to the entry in the
        atmTrafficDescrParamTable defined in RFC 2515 that
        specifies the traffic allocation for the PNNI routing
        control channel (VCI=18) on this interface."
    REFERENCE
        "ATM Forum PNNI 1.1 Sections 5.5.2, 5.5.3, Annex E
        RCCMaximumBurstSize, RCCPeakCellRate,
        RCCSustainableCellRate"
    ::= { pnniIfEntry 11 }

pnniIfAdmWeightGfr OBJECT-TYPE
    SYNTAX      Unsigned32 (1..16777215)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The administrative weight of this interface for the
        guaranteed frame rate service category."
    REFERENCE
        "ATM Forum Guaranteed Frame Rate (GFR) Signalling Specification
        (PNNI, AINI, and UNI), Version 1.0 Section 4.2"
    DEFVAL { 5040 }
    ::= { pnniIfEntry 12 }

```

```
-- link table
```

```
pnniLinkTable OBJECT-TYPE
```

SYNTAX SEQUENCE OF PnniLinkEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION

"This table contains the attributes necessary to describe the operation of logical links attached to the local switching system and the relationship with the neighbor nodes on the other end of the links. Links are attached to a specific node within the switching system. A concatenation of the Node Index of the node within the local switching system and the port ID are used as the instance ID to uniquely identify the link. Links may represent horizontal links between lowest level neighboring peers, outside links, uplinks, or horizontal links to/from LGNs.

The entire pnniLink object is read-only, reflecting the fact that this information is discovered dynamically by the PNNI protocol rather than configured."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.6"

::= { pnniMIBObjects 9 }

pnniLinkEntry OBJECT-TYPE

SYNTAX PnniLinkEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION

"An entry in the table, containing information about a link attached to a PNNI logical node in this switching system."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.6"

INDEX { pnniNodeIndex,
pnniLinkPortId }
::= { pnniLinkTable 1 }

PnniLinkEntry ::=

SEQUENCE {
pnniLinkPortId PnniPortId,
pnniLinkType INTEGER,
pnniLinkVersion PnniVersion,
pnniLinkHelloState PnniHelloState,
pnniLinkRemoteNodeId PnniNodeId,
pnniLinkRemotePortId PnniPortId,
pnniLinkDerivedAggrToken PnniAggrToken,
pnniLinkUpnodeId PnniNodeId,
pnniLinkUpnodeAtmAddress PnniAtmAddr,
pnniLinkCommonPeerGroupId PnniPeerGroupId,
pnniLinkIfIndex InterfaceIndex,
pnniLinkSvccRccIndex PnniSvccRccIndex,
pnniLinkRcvHellos Counter32,
pnniLinkXmtHellos Counter32
}

pnniLinkPortId OBJECT-TYPE

SYNTAX PnniPortId
MAX-ACCESS not-accessible

STATUS current
DESCRIPTION
"The Port Identifier of the link as selected by the local node. This value has meaning only within the context of the node to which the port is attached."
 ::= { pnniLinkEntry 1 }

pnniLinkType OBJECT-TYPE
SYNTAX INTEGER {
 unknown(1),
 lowestLevelHorizontalLink(2),
 horizontalLinkToFromLgn(3),
 lowestLevelOutsideLink(4),
 uplink(5),
 outsideLinkAndUplink(6)
 }
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Indicates the type of link being described."
 ::= { pnniLinkEntry 2 }

pnniLinkVersion OBJECT-TYPE
SYNTAX PnniVersion
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"For horizontal and outside links between lowest-level nodes and for links of unknown type, this attribute indicates the version of PNNI routing protocol used to exchange information over this link. If communication with the neighbor node has not yet been established, then the Version is set to `unknown`. For uplinks (where the port ID is not also used for the underlying outside link) or links to/from LGNs, the Version is set to `unknown`."
 ::= { pnniLinkEntry 3 }

pnniLinkHelloState OBJECT-TYPE
SYNTAX PnniHelloState
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"For horizontal and outside links between lowest-level nodes and for links of unknown type, this attribute indicates the state of the Hello protocol exchange over this link. For links to/from LGNs, this attribute indicates the state of the corresponding LGN Horizontal Link Hello State Machine. For uplinks (where the port ID is not also used for the underlying outside link), this attribute is set to notApplicable."
REFERENCE
"ATM Forum PNNI 1.1 Section 5.6.2.1.2"
 ::= { pnniLinkEntry 4 }

pnniLinkRemoteNodeId OBJECT-TYPE
SYNTAX PnniNodeId

MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Indicates the node identifier of the remote (neighboring) node on the other end of the link. If the pnniLinkType is `outside link and uplink`, this is the node identifier of the lowest-level neighbor node on the other end of the outside link. If the remote node ID is unknown or if the pnniLinkType is `uplink`, this attribute is set to all zeros."
 ::= { pnniLinkEntry 5 }

pnniLinkRemotePortId OBJECT-TYPE
SYNTAX PnniPortId
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Indicates the port identifier of the port at the remote end of the link as assigned by the remote node. If the pnniLinkType is `outside link and uplink`, this is the port identifier assigned by the lowest-level neighbor node to identify the outside link. If the remote port ID is unknown or if the pnniLinkType is `uplink`, this attribute is set to zero."
 ::= { pnniLinkEntry 6 }

pnniLinkDerivedAggrToken OBJECT-TYPE
SYNTAX PnniAggrToken
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Indicates the derived aggregation token value used on this link. For horizontal links between lowest-level nodes and when the link type is not yet known, this attribute takes the value of zero."
REFERENCE
"ATM Forum PNNI 1.1 Section 5.10.3.1"
 ::= { pnniLinkEntry 7 }

pnniLinkUpnodeId OBJECT-TYPE
SYNTAX PnniNodeId
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"For outside links and uplinks, this attribute contains the Node Identifier of the upnode (the neighbor node's identity at the level of the common peer group). When the upnode has not yet been identified, this attribute is set to zero. For horizontal links or when the link type is not yet known, this attribute is set to zero."
 ::= { pnniLinkEntry 8 }

pnniLinkUpnodeAtmAddress OBJECT-TYPE
SYNTAX PnniAtmAddr
MAX-ACCESS read-only
STATUS current
DESCRIPTION

"For outside links and uplinks, this attribute contains the ATM End System Address used to establish connections to the upnode. When the upnode has not yet been identified, this attribute is set to zero. For horizontal links or when the link type is not yet known, this attribute is set to zero."
 ::= { pnniLinkEntry 9 }

pnniLinkCommonPeerGroupId OBJECT-TYPE

SYNTAX PnniPeerGroupId
MAX-ACCESS read-only
STATUS current

DESCRIPTION

"For outside links and uplinks, this attribute contains the peer group identifier of the lowest level common Peer Group in the ancestry of the neighboring node and the node within the local switching system. The value of this attribute takes on a value determined by the Hello exchange of hierarchical information that occurs between the two lowest-level border nodes. When the common peer group has not yet been identified, this attribute is set to zero. For horizontal links or when the link type is not yet known, this attribute is set to all zeros."

::= { pnniLinkEntry 10 }

pnniLinkIfIndex OBJECT-TYPE

SYNTAX InterfaceIndex
MAX-ACCESS read-only
STATUS current

DESCRIPTION

"For horizontal and outside links between lowest-level nodes and for links of unknown type, this attribute identifies the interface to which the logical link corresponds.

For all other cases, the value of this object is zero."

::= { pnniLinkEntry 11 }

pnniLinkSvccRccIndex OBJECT-TYPE

SYNTAX PnniSvccRccIndex
MAX-ACCESS read-only
STATUS current

DESCRIPTION

"For horizontal links to/from LGNs, this attribute identifies the SVCC-based RCC used to exchange information with the neighboring peer logical group node. If the pnniLinkType is not `horizontal link to/from LGN', this attribute shall take the value of zero."

::= { pnniLinkEntry 12 }

pnniLinkRcvHellos OBJECT-TYPE

SYNTAX Counter32
MAX-ACCESS read-only
STATUS current

DESCRIPTION

"For horizontal and outside links between lowest-level nodes and for links of unknown type, this attribute contains a count of the number of Hello Packets received over this link. If the pnniLinkType is `horizontal link to/from LGN'

```
    or `uplink', this attribute is set to zero."
 ::= { pnniLinkEntry 13 }
```

pnniLinkXmtHellos OBJECT-TYPE

```
SYNTAX          Counter32
MAX-ACCESS      read-only
STATUS          current
```

DESCRIPTION

"For horizontal and outside links between lowest-level nodes and for links of unknown type, this attribute contains a count of the number of Hello Packets transmitted over this link. If the pnniLinkType is `horizontal link to/from LGN' or `uplink', this attribute is set to zero."

```
 ::= { pnniLinkEntry 14 }
```

-- neighboring peer table

pnniNbrPeerTable OBJECT-TYPE

```
SYNTAX          SEQUENCE OF PnniNbrPeerEntry
MAX-ACCESS      not-accessible
STATUS          current
```

DESCRIPTION

"The pnniNbrPeer Object contains all the attributes necessary to describe the relationship a node in this switching system has with a neighboring node within the same peer group. A concatenation of the Node Identifier of the node within the local switching system and the neighboring peer's Node Identifier is used to form the instance ID for this object.

Entries in the pnniNbrPeerTable are created automatically, reflecting the fact that neighboring peers are discovered dynamically by the PNNI protocol rather than configured."

REFERENCE

"ATM Forum PNNI 1.1 Sections 5.7, 5.8"

```
 ::= { pnniMIBObjects 10 }
```

pnniNbrPeerEntry OBJECT-TYPE

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

DESCRIPTION

"An entry in the table, containing information about this node's relationship with a neighboring peer node."

REFERENCE

"ATM Forum PNNI 1.1 Sections 5.7, 5.8"

```
INDEX          { pnniNodeIndex,
                 pnniNbrPeerRemoteNodeId }
```

```
 ::= { pnniNbrPeerTable 1 }
```

PnniNbrPeerEntry ::=

```
SEQUENCE {
    pnniNbrPeerRemoteNodeId      PnniNodeId,
    pnniNbrPeerState             INTEGER,
    pnniNbrPeerSvccRccIndex      PnniSvccRccIndex,
    pnniNbrPeerPortCount         Gauge32,
```

```

pnniNbrPeerRcvDbSums          Counter32,
pnniNbrPeerXmtDbSums         Counter32,
pnniNbrPeerRcvPtsps          Counter32,
pnniNbrPeerXmtPtsps          Counter32,
pnniNbrPeerRcvPtseReqs       Counter32,
pnniNbrPeerXmtPtseReqs       Counter32,
pnniNbrPeerRcvPtseAcks       Counter32,
pnniNbrPeerXmtPtseAcks       Counter32,
pnniNbrPeerSyncInitTimeStamp  TimeStamp,
pnniNbrPeerSyncDoneTimeStamp  TimeStamp,
pnniNbrPeerLclResyncCongStatus INTEGER,
pnniNbrPeerAggResyncCongStatus INTEGER,
pnniNbrPeerResyncRetryCount   Gauge32,
pnniNbrPeerTriggerResync     INTEGER
}

```

pnniNbrPeerRemoteNodeId OBJECT-TYPE

```

SYNTAX          PnniNodeId
MAX-ACCESS      not-accessible
STATUS          current
DESCRIPTION
    "The Node Identifier of the neighboring peer node."
 ::= { pnniNbrPeerEntry 1 }

```

pnniNbrPeerState OBJECT-TYPE

```

SYNTAX          INTEGER {
                    npdown(1),
                    negotiating(2),
                    exchanging(3),
                    loading(4),
                    full(5),
                    fullResynchAllowed(6),
                    loadingInFull(7),
                    exchangingInFull(8),
                    negotiatingInFull(9)
                }
MAX-ACCESS      read-only
STATUS          current
DESCRIPTION
    "Indicates the state of this node's Neighboring Peer State
     Machine associated with pnniNbrPeerRemoteNodeId."
REFERENCE
    "PNNI Routing Resynchronization Control, section 3.2,
     modifications to section 5.7.2 of PNNI 1.1"
 ::= { pnniNbrPeerEntry 2 }

```

pnniNbrPeerSvccRccIndex OBJECT-TYPE

```

SYNTAX          PnniSvccRccIndex
MAX-ACCESS      read-only
STATUS          current
DESCRIPTION
    "Identifies the SVCC-based RCC being used to communicate
     with the neighboring peer if one exists. If both the local
     node and the neighboring peer node are lowest-level nodes,
     this attribute is set to zero."
 ::= { pnniNbrPeerEntry 3 }

```

pnniNbrPeerPortCount OBJECT-TYPE
SYNTAX Gauge32
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"A count of the total number of ports that connect to the neighboring peer. If the neighboring peer only communicates via an SVCC-based RCC, the value of this attribute is set to zero. Otherwise it is set to the total number of ports to the neighboring peer in the Hello state 2-WayInside."
 ::= { pnniNbrPeerEntry 4 }

pnniNbrPeerRcvDbSums OBJECT-TYPE
SYNTAX Counter32
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"A count of the number of Database Summary Packets received from the neighboring peer."
 ::= { pnniNbrPeerEntry 5 }

pnniNbrPeerXmtDbSums OBJECT-TYPE
SYNTAX Counter32
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"A count of the number of Database Summary Packets transmitted to the neighboring peer."
 ::= { pnniNbrPeerEntry 6 }

pnniNbrPeerRcvPtsps OBJECT-TYPE
SYNTAX Counter32
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"A count of the number of PTSPs received from the neighboring peer."
 ::= { pnniNbrPeerEntry 7 }

pnniNbrPeerXmtPtsps OBJECT-TYPE
SYNTAX Counter32
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"A count of the number of PTSPs (re)transmitted to the neighboring peer."
 ::= { pnniNbrPeerEntry 8 }

pnniNbrPeerRcvPtseReqs OBJECT-TYPE
SYNTAX Counter32
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"A count of the number of PTSE Request packets received from the neighboring peer."
 ::= { pnniNbrPeerEntry 9 }


```

pnniNbrPeerXmtPtseReqs OBJECT-TYPE
    SYNTAX          Counter32
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "A count of the number of PTSE Request packets transmitted
        to the neighboring peer."
    ::= { pnniNbrPeerEntry 10 }

pnniNbrPeerRcvPtseAcks OBJECT-TYPE
    SYNTAX          Counter32
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "A count of the number of PTSE Ack packets received from the
        neighboring peer."
    ::= { pnniNbrPeerEntry 11 }

pnniNbrPeerXmtPtseAcks OBJECT-TYPE
    SYNTAX          Counter32
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "A count of the number of PTSE Ack packets transmitted to
        the neighboring peer."
    ::= { pnniNbrPeerEntry 12 }

pnniNbrPeerSyncInitTimeStamp OBJECT-TYPE
    SYNTAX          TimeStamp
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "Indicates the time at which database synchronization
        or resynchronization was last initiated with this
        neighboring peer."
    ::= { pnniNbrPeerEntry 13 }

pnniNbrPeerSyncDoneTimeStamp OBJECT-TYPE
    SYNTAX          TimeStamp
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "Indicates the time at which database synchronization
        or resynchronization was last completed with this
        neighboring peer.
        If there has been no completion of a database
        synchronization nor resynchronization since the network
        management portion of the system was last re-initialized,
        then the value zero is returned."
    ::= { pnniNbrPeerEntry 14 }

pnniNbrPeerLclResyncCongStatus OBJECT-TYPE
    SYNTAX          INTEGER {
                        congested(1),
                        notCongested(2)
                    }

```

MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Indicates the state of resynchronization congestion advertised by this node to its neighboring peer."
REFERENCE
"PNNI Routing Resynchronization Control, section 3.2, modifications to section 5.7.1 of PNNI 1.1"
::= { pnniNbrPeerEntry 15 }

pnniNbrPeerAggResyncCongStatus OBJECT-TYPE

SYNTAX INTEGER {
congested(1),
notCongested(2)
}
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Indicates the state of resynchronization congestion on the adjacency to the neighboring peer. This is the aggregate of the local resynchronization congestion and that received from the neighboring peer."
REFERENCE
"PNNI Routing Resynchronization Control, section 3.2, modifications to section 5.7.1 of PNNI 1.1"
::= { pnniNbrPeerEntry 16 }

pnniNbrPeerResyncRetryCount OBJECT-TYPE

SYNTAX Gauge32
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"A count of the number of times Database Resynchronization has been held off due to neighboring peer congestion. This count is cleared when pnniNbrPeerState changes from loading to any state other than full or from full to any other state."
REFERENCE
"PNNI Routing Resynchronization Control, section 3.2, modifications to section 5.7.1 of PNNI 1.1"
::= { pnniNbrPeerEntry 17 }

pnniNbrPeerTriggerResync OBJECT-TYPE

SYNTAX INTEGER {
resync(1),
noop(2)
}
MAX-ACCESS read-write
STATUS current
DESCRIPTION
"When the value is set to 'resync', a database resynchronization process is initiated. The resynchronization may not start immediately if there is congestion.
When the value is set to 'noop' no operation is performed.
When read, the value 'noop' is returned."

```
::= { pnniNbrPeerEntry 18 }
```

```
-- neighboring peer port table
```

```
pnniNbrPeerPortTable OBJECT-TYPE
```

```
SYNTAX SEQUENCE OF PnniNbrPeerPortEntry
```

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

```
STATUS current
```

```
DESCRIPTION
```

```
"A table of all ports in Hello state 2-Way Inside to a given neighboring peer node. A concatenation of the Node Index of the node within the local switching system, the neighbor's Node Identifier and the Interface Index of the port being described forms the instance ID for this object. This object is only used for lowest-level nodes."
```

```
REFERENCE
```

```
"ATM Forum PNNI 1.1 Section 5.7.1 Port ID List"
```

```
::= { pnniMIBObjects 11 }
```

```
pnniNbrPeerPortEntry OBJECT-TYPE
```

```
SYNTAX PnniNbrPeerPortEntry
```

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

```
STATUS current
```

```
DESCRIPTION
```

```
"An entry in the table, containing information about a port in the Hello state 2-Way Inside from a PNNI logical node in this switching system to a neighboring peer node."
```

```
INDEX { pnniNodeIndex,  
        pnniNbrPeerRemoteNodeId,  
        pnniNbrPeerPortId  
      }
```

```
::= { pnniNbrPeerPortTable 1 }
```

```
PnniNbrPeerPortEntry ::=
```

```
SEQUENCE {  
    pnniNbrPeerPortId PnniPortId,  
    pnniNbrPeerPortFloodStatus TruthValue  
}
```

```
pnniNbrPeerPortId OBJECT-TYPE
```

```
SYNTAX PnniPortId
```

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

```
STATUS current
```

```
DESCRIPTION
```

```
"The port ID of a port to the neighboring peer that is in the Hello state 2-Way Inside."
```

```
::= { pnniNbrPeerPortEntry 1 }
```

```
pnniNbrPeerPortFloodStatus OBJECT-TYPE
```

```
SYNTAX TruthValue
```

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

```
STATUS current
```

```
DESCRIPTION
```

```
"Indicates whether the port is being used for transmission of flooding and database synchronization information to the
```

```
    neighboring peer."  
 ::= { pnniNbrPeerPortEntry 2 }
```

```
-- pnni SVCC-based routing control channel table
```

```
pnniSvccRccTable OBJECT-TYPE
```

```
SYNTAX SEQUENCE OF PnniSvccRccEntry
```

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

```
STATUS current
```

```
DESCRIPTION
```

```
"A table containing the attributes necessary to analyze the  
operation of the PNNI protocol on SVCC-based Routing
```

```
Control Channels. Entries in the pnniSvccRccTable are  
created automatically, reflecting the fact that SVCC-based  
RCCs are established dynamically during operation of the  
PNNI protocol rather than configured.
```

```
An entry is created by the calling node as soon as the  
node initiates an SVCC-based RCC connection establishment  
attempt to the neighbor node. When an entry is destroyed  
and pnniNodeSvccRemovalTrapEnable is set to 'true', the  
pnniSvccRccRemovalNotif trap is generated."
```

```
REFERENCE
```

```
"ATM Forum PNNI 1.1 Sections 5.5.6, 5.6.3.1"
```

```
::= { pnniMIBObjects 12 }
```

```
pnniSvccRccEntry OBJECT-TYPE
```

```
SYNTAX PnniSvccRccEntry
```

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

```
STATUS current
```

```
DESCRIPTION
```

```
"An entry in the table, containing information about an  
SVCC-based RCC from a PNNI logical node in this switching  
system."
```

```
REFERENCE
```

```
"ATM Forum PNNI 1.1 Sections 5.5.6, 5.6.3.1"
```

```
INDEX { pnniNodeIndex,  
        pnniSvccRccIndex }
```

```
::= { pnniSvccRccTable 1 }
```

```
PnniSvccRccEntry ::=
```

```
SEQUENCE {
```

```
    pnniSvccRccIndex          PnniSvccRccIndex,  
    pnniSvccRccVersion        PnniVersion,  
    pnniSvccRccHelloState     PnniHelloState,  
    pnniSvccRccRemoteNodeId   PnniNodeId,  
    pnniSvccRccRemoteAtmAddress PnniAtmAddr,  
    pnniSvccRccRcvHellos      Counter32,  
    pnniSvccRccXmtHellos      Counter32,  
    pnniSvccRccIfIndex        InterfaceIndex,  
    pnniSvccRccVpi            INTEGER,  
    pnniSvccRccVci            INTEGER,  
    pnniSvccRccLastRelCause   INTEGER,  
    pnniSvccRccLastRelDiagnostic OCTET STRING,  
    pnniSvccRccFailureCount    Gauge32,
```

```
    pnniSvccRccLastConnectTime  TimeStamp,
    pnniSvccRccTestLastTime     TimeStamp,
    pnniSvccRccTestLastResult   INTEGER,
    pnniSvccRccTestFailureCount Gauge32,
    pnniSvccRccTestLastRelCause INTEGER,
    pnniSvccRccTestLastRelDiag  OCTET STRING,
    pnniSvccRccTestTriggerTest  INTEGER
}
```

pnniSvccRccIndex OBJECT-TYPE

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

DESCRIPTION

"An index into the node's tables of SVCC-based RCCs."

```
::= { pnniSvccRccEntry 1 }
```

pnniSvccRccVersion OBJECT-TYPE

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

DESCRIPTION

"The version of the PNNI routing protocol used to exchange information with the neighbor node."

```
::= { pnniSvccRccEntry 2 }
```

pnniSvccRccHelloState OBJECT-TYPE

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

DESCRIPTION

"The state of the Hello protocol exchange over the SVCC-based RCC."

Note: the Down state indicates that the SVCC establishment is in progress."

```
::= { pnniSvccRccEntry 3 }
```

pnniSvccRccRemoteNodeId OBJECT-TYPE

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

DESCRIPTION

"The remote node at which the SVCC-based RCC terminates."

```
::= { pnniSvccRccEntry 4 }
```

pnniSvccRccRemoteAtmAddress OBJECT-TYPE

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

DESCRIPTION

"The ATM End System Address to which SVCC establishment is attempted."

```
::= { pnniSvccRccEntry 5 }
```

pnniSvccRccRcvHellos OBJECT-TYPE

```
SYNTAX      Counter32
```

```

MAX-ACCESS      read-only
STATUS           current
DESCRIPTION
    "A count of the number of Hello Packets received over this
    SVCC-based RCC."
 ::= { pnniSvccRccEntry 6 }

pnniSvccRccXmtHellos OBJECT-TYPE
SYNTAX           Counter32
MAX-ACCESS      read-only
STATUS           current
DESCRIPTION
    "A count of the number of Hello Packets transmitted over
    this SVCC-based RCC."
 ::= { pnniSvccRccEntry 7 }

pnniSvccRccIfIndex OBJECT-TYPE
SYNTAX           InterfaceIndex
MAX-ACCESS      read-only
STATUS           current
DESCRIPTION
    "The interface from which the SVCC-based RCC leaves the
    switching system.  If the SVCC-based RCC has not yet been
    established, then this attribute takes the value of zero."
 ::= { pnniSvccRccEntry 8 }

pnniSvccRccVpi OBJECT-TYPE
SYNTAX           INTEGER (0..4095)
MAX-ACCESS      read-only
STATUS           current
DESCRIPTION
    "The VPI used at the interface from which the SVCC-based RCC
    leaves the switching system.  If the SVCC-based RCC has not
    yet been established, then this attribute takes the value
    of zero "
 ::= { pnniSvccRccEntry 9 }

pnniSvccRccVci OBJECT-TYPE
SYNTAX           INTEGER (0..65535)
MAX-ACCESS      read-only
STATUS           current
DESCRIPTION
    "The VCI used at the interface from which the SVCC-based RCC
    leaves the switching system.  If the SVCC-based RCC has not
    yet been established, then this attribute takes the value
    of zero "
 ::= { pnniSvccRccEntry 10 }

pnniSvccRccLastRelCause OBJECT-TYPE
SYNTAX           INTEGER(1..127)
MAX-ACCESS      read-only
STATUS           current
DESCRIPTION
    "Value of the Cause field of the Cause Information Element
    in the last RELEASE signalling message received for this
    SVCC.  Indicates the reason for the Release."
 ::= { pnniSvccRccEntry 11 }

```

```

pnniSvccRccLastRelDiagnostic OBJECT-TYPE
    SYNTAX          OCTET STRING (SIZE(0..8))
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "Value of the first 8 bytes of diagnostic information from
        the Cause field of the Cause Information Element in the
        last RELEASE signalling message received for this SVCC."
    ::= { pnniSvccRccEntry 12 }

pnniSvccRccFailureCount OBJECT-TYPE
    SYNTAX          Gauge32
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "Indicates how many consecutive SVCC-based RCC connection
        establishment attempts have failed. This count is reset
        whenever a connection establishment succeeds. A single
        SVCC-based RCC connection establishment attempt may include
        several SVCC connection establishment attempts as described
        in section 5.5.4 of PNNI 1.1. This gauge is only
        incremented if all SVCC connection establishment attempts
        of a single SVCC-based RCC connection establishment attempt
        have failed."
    ::= { pnniSvccRccEntry 13 }

pnniSvccRccLastConnectTime OBJECT-TYPE
    SYNTAX          TimeStamp
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "Indicates the time at which the SVCC-based RCC connection
        was last successfully established to the neighboring peer
        LGN. If there has never been a successful SVCC-based RCC
        connection between the two LGNs, then the value zero is
        returned."
    ::= { pnniSvccRccEntry 14 }

pnniSvccRccTestLastTime OBJECT-TYPE
    SYNTAX          TimeStamp
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "Indicates the time at which this node last completed an
        SVCC-based RCC diagnostic test to the neighboring peer LGN.
        If there has been no test completed by this node since the
        neighboring peer LGN entry was created then the value zero
        is returned."
    REFERENCE
        "PNNI Addendum for SVCC-based RCC Diagnostic Tests,
        Version 1.0, af-cs-0203.000"
    ::= { pnniSvccRccEntry 15 }

pnniSvccRccTestLastResult OBJECT-TYPE
    SYNTAX          INTEGER {
                        noresult(1),

```

```

                success(2),
                failure(3)
            }
MAX-ACCESS      read-only
STATUS          current
DESCRIPTION
    "Indicates the result of the last SVCC-based RCC diagnostic
    test attempted with the neighboring peer LGN. In order
    of precedence the value will be
    'noresult' - if no diagnostic test has completed
    since the creation of this neighboring
    peer entry.
    'success' or 'failure' - if a SVCC-based RCC
    diagnostic test was completed and the
    SVCC was either successfully established
    or failed to establish, respectively."
REFERENCE
    "PNNI Addendum for SVCC-based RCC Diagnostic Tests,
    Version 1.0, af-cs-0203.000"
 ::= { pnniSvccRccEntry 16 }

```

pnniSvccRccTestFailureCount OBJECT-TYPE

```

SYNTAX          Gauge32
MAX-ACCESS      read-only
STATUS          current
DESCRIPTION
    "Indicates how many consecutive times the SVCC-based RCC
    diagnostic test has failed. This count is reset whenever
    the SVCC-based RCC diagnostic succeeds. A single
    SVCC-based RCC diagnostic test may include several SVCC
    connection establishment attempts as described in section
    5.5.4 of PNNI 1.1. This gauge is only incremented if all
    the SVCC connection establishment attempts of a single
    SVCC-based RCC diagnostic test have failed."
REFERENCE
    "PNNI Addendum for SVCC-based RCC Diagnostic Tests,
    Version 1.0, af-cs-0203.000"
 ::= { pnniSvccRccEntry 17 }

```

pnniSvccRccTestLastRelCause OBJECT-TYPE

```

SYNTAX          INTEGER(1..127)
MAX-ACCESS      read-only
STATUS          current
DESCRIPTION
    "Value of the Cause field of the Cause Information Element
    in the last RELEASE signalling message received for the
    SVCC used for the diagnostic test. Indicates the reason
    for the Release."
REFERENCE
    "PNNI Addendum for SVCC-based RCC Diagnostic Tests,
    Version 1.0, af-cs-0203.000"
 ::= { pnniSvccRccEntry 18 }

```

pnniSvccRccTestLastRelDiag OBJECT-TYPE

```

SYNTAX          OCTET STRING (SIZE(0..8))
MAX-ACCESS      read-only
STATUS          current

```


DESCRIPTION

"Value of the first 8 bytes of diagnostic information from the Cause field of the Cause Information Element in the last RELEASE signalling message received for the SVCC used for the diagnostic test."

REFERENCE

"PNNI Addendum for SVCC-based RCC Diagnostic Tests, Version 1.0, af-cs-0203.000"

::= { pnniSvccRccEntry 19 }

pnniSvccRccTestTriggerTest OBJECT-TYPE

SYNTAX INTEGER {
test(1),
noop(2)
}

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"When the value is set to 'test', an SVCC-based RCC diagnostic test is initiated to the neighboring peer if the test is allowed. The test is allowed if this node is an LGN, this LGN's node id is larger than the neighboring peers node ID, and there is currently an established SVCC-based RCC to the neighbor peer LGN. When the value is set to 'noop' no operation is performed. When read, the value 'noop' is returned."

REFERENCE

"PNNI Addendum for SVCC-based RCC Diagnostic Tests, Version 1.0, af-cs-0203.000"

::= { pnniSvccRccEntry 20 }

-- PTSE table

pnniPtseTable OBJECT-TYPE

SYNTAX SEQUENCE OF PnniPtseEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"The pnniPtse object contains the attributes that describe the most recent instances of PTSEs in a node's topology database. A concatenation of the Node Identifier of the local node that received the PTSE, the originating Node's Node Identifier and the PTSE Identifier are used to form the instance ID for an instance of this object."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.2"

::= { pnniMIBObjects 13 }

pnniPtseEntry OBJECT-TYPE

SYNTAX PnniPtseEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"An entry in the table, containing information about a PTSE in the topology database of a PNNI logical node in this switching system."

REFERENCE

```

"ATM Forum PNNI 1.1 Section 5.8.2"
INDEX      { pnniNodeIndex,
             pnniPtseOriginatingNodeId,
             pnniPtseId }
 ::= { pnniPtseTable 1 }

PnniPtseEntry ::=
SEQUENCE {
    pnniPtseOriginatingNodeId    PnniNodeId,
    pnniPtseId                   Unsigned32,
    pnniPtseType                 INTEGER,
    pnniPtseSequenceNum          Unsigned32,
    pnniPtseChecksum             Unsigned32,
    pnniPtseLifeTime            Unsigned32,
    pnniPtseInfo                 OCTET STRING
}

pnniPtseOriginatingNodeId OBJECT-TYPE
SYNTAX      PnniNodeId
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "The Node Identifier of the node that originated the PTSE."
 ::= { pnniPtseEntry 1 }

pnniPtseId OBJECT-TYPE
SYNTAX      Unsigned32
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "The value of the PTSE Identifier assigned to the PTSE by
     its originator."
 ::= { pnniPtseEntry 2 }

pnniPtseType OBJECT-TYPE
SYNTAX      INTEGER {
                other(1),
                nodalStateParameters(96),
                nodalInformation(97),
                internalReachableAddresses(224),
                exteriorReachableAddresses(256),
                horizontalLinks(288),
                uplinks(289)
            }
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "The type of information contained in the PTSE."
 ::= { pnniPtseEntry 3 }

pnniPtseSequenceNum OBJECT-TYPE
SYNTAX      Unsigned32
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "The sequence number of the instance of the PTSE as it
     appears in the local topology database."

```

```
::= { pnniPtseEntry 4 }
```

```
pnniPtseChecksum OBJECT-TYPE
```

```
SYNTAX      Unsigned32 (0..65535)
```

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

```
STATUS      current
```

```
DESCRIPTION
```

```
    "The value of the PTSE checksum as it appears in the local  
    topology database."
```

```
::= { pnniPtseEntry 5 }
```

```
pnniPtseLifeTime OBJECT-TYPE
```

```
SYNTAX      Unsigned32 (0..65535)
```

```
UNITS       "seconds"
```

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

```
STATUS      current
```

```
DESCRIPTION
```

```
    "The value of the remaining lifetime for the given PTSE as  
    it appears in the local topology database."
```

```
::= { pnniPtseEntry 6 }
```

```
pnniPtseInfo OBJECT-TYPE
```

```
SYNTAX      OCTET STRING (SIZE(0..65535))
```

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

```
STATUS      current
```

```
DESCRIPTION
```

```
    "An unformatted hexadecimal dump of the PTSE contents in  
    full.
```

```
    Note: If the size of the PTSE contents is larger than the  
    maximum size of SNMP packets then this is truncated."
```

```
::= { pnniPtseEntry 7 }
```

```
-- pnni map table
```

```
pnniMapTable OBJECT-TYPE
```

```
SYNTAX      SEQUENCE OF PnniMapEntry
```

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

```
STATUS      current
```

```
DESCRIPTION
```

```
    "A table containing attributes necessary to find and analyze  
    the operation of all links and nodes within the PNNI  
    hierarchy, as seen from the perspective of a local node.  
    An instance of a pnniMap Object describes a link in terms  
    of a node at one end of the link. Normally there will be  
    two instances of the pnniMap object in the MIB for each  
    horizontal link. The two instances provide information for  
    Network management to map port identifiers from the nodes  
    at both ends to the link between them. A concatenation of  
    the Local Node Index, Originating Node Identifier and  
    Originating Port Identifier are used to form the instance  
    ID for this object.
```

```
    This entire object is read-only, reflecting the fact that  
    the map is discovered dynamically during operation of the  
    PNNI protocol rather than configured."
```

```
::= { pnniMIBObjects 14 }
```

pnniMapEntry OBJECT-TYPE

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

DESCRIPTION

"An entry in the table, containing connectivity information about a node or link in the PNNI routing domain, as seen from the perspective of a PNNI logical node in this switching system."

```
INDEX      { pnniNodeIndex,
              pnniMapOriginatingNodeId,
              pnniMapOriginatingPortId,
              pnniMapIndex }
```

```
::= { pnniMapTable 1 }
```

PnniMapEntry ::=

```
SEQUENCE {
    pnniMapOriginatingNodeId      PnniNodeId,
    pnniMapOriginatingPortId     PnniPortId,
    pnniMapIndex                  INTEGER,
    pnniMapType                   INTEGER,
    pnniMapPeerGroupId            PnniPeerGroupId,
    pnniMapAggrToken              PnniAggrToken,
    pnniMapRemoteNodeId           PnniNodeId,
    pnniMapRemotePortId          PnniPortId,
    pnniMapVPCapability           TruthValue,
    pnniMapPtseId                 Unsigned32,
    pnniMapMetricsTag             PnniMetricsTag
}
```

pnniMapOriginatingNodeId OBJECT-TYPE

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

DESCRIPTION

"The node identifier of the node whose connectivity within itself or to other nodes is being described."

```
::= { pnniMapEntry 1 }
```

pnniMapOriginatingPortId OBJECT-TYPE

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

DESCRIPTION

"The port identifier of the port as assigned by the originating node, to which the port is attached."

```
::= { pnniMapEntry 2 }
```

pnniMapIndex OBJECT-TYPE

```
SYNTAX      INTEGER (0..65535)
MAX-ACCESS  not-accessible
STATUS      current
```

DESCRIPTION

"An index into the set of link and nodal connectivity associated with the originating node and port. This index

is needed since there may be multiple entries for nodal connectivity from a specific node and port pair, in addition to any entry for a horizontal link or uplink."
 ::= { pnniMapEntry 3 }

pnniMapType OBJECT-TYPE

SYNTAX INTEGER {
 horizontalLink(1),
 uplink(2),
 node(3)
}
MAX-ACCESS read-only
STATUS current
DESCRIPTION
 "The type of PNNI entity being described by this entry in
 the table."
 ::= { pnniMapEntry 4 }

pnniMapPeerGroupId OBJECT-TYPE

SYNTAX PnniPeerGroupId
MAX-ACCESS read-only
STATUS current
DESCRIPTION
 "Identifies the peer group of the originating node."
 ::= { pnniMapEntry 5 }

pnniMapAggrToken OBJECT-TYPE

SYNTAX PnniAggrToken
MAX-ACCESS read-only
STATUS current
DESCRIPTION
 "For horizontal links to/from LGNs and for uplinks, this
 attribute contains the derived aggregation token value for
 this link. For nodes and for horizontal links between
 lowest-level nodes, this attribute is set to zero."
 ::= { pnniMapEntry 6 }

pnniMapRemoteNodeId OBJECT-TYPE

SYNTAX PnniNodeId
MAX-ACCESS read-only
STATUS current
DESCRIPTION
 "For horizontal links and uplinks, this attribute contains
 the node identifier of the node at the other end of the
 link from the originating node. If unknown, the PNNI
 protocol entity sets this attribute's value to (all)
 zero(s). For nodes, this attribute's value is set to (all)
 zero(s)."
 ::= { pnniMapEntry 7 }

pnniMapRemotePortId OBJECT-TYPE

SYNTAX PnniPortId
MAX-ACCESS read-only
STATUS current
DESCRIPTION
 "For horizontal links and uplinks, this attribute contains
 the port identifier of the port at the remote end of the

link as assigned by the remote node. If unknown, the PNNI protocol entity sets this attribute's value to zero.

For nodes, this attribute contains the port identifier of the port at the other end of the spoke or bypass from the originating port. When the originating port ID is zero, a value of zero indicates the default radius. When the originating port ID is non-zero, a value of zero indicates the nodal nucleus."

```
::= { pnniMapEntry 8 }
```

pnniMapVPCapability OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Indicates whether VPCs can be established across the PNNI entity being described by this entry in the pnniMapTable."

```
::= { pnniMapEntry 9 }
```

pnniMapPtseId OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The value of the PTSE Identifier for the PTSE being originated by the originating node which contains the information group(s) describing the PNNI entity."

```
::= { pnniMapEntry 10 }
```

pnniMapMetricsTag OBJECT-TYPE

SYNTAX PnniMetricsTag

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"An arbitrary integer that is used to associate a set of traffic parameters that are always advertised together. Within this set, the parameters are distinguished by the service categories and direction to which a set of parameters apply. This value is used as an index into the pnniMetricsTable. The distinguished value zero indicates that no metrics are associated with the link or nodal connectivity."

```
::= { pnniMapEntry 11 }
```

-- nodal map table

pnniMapNodeTable OBJECT-TYPE

SYNTAX SEQUENCE OF PnniMapNodeEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"A list of nodes as seen from the perspective of a local node. The pnniMapNodeTable contains all information

learned by the local node from nodal information PTSEs.
This entire object is read-only, reflecting the fact that
the map is discovered dynamically during operation of the
PNNI protocol rather than configured."

::= { pnniMIBObjects 15 }

pnniMapNodeEntry OBJECT-TYPE

SYNTAX PnniMapNodeEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"An entry in the table, containing information about a node
in the PNNI routing domain, as seen from the perspective of
a logical node in this switching system."

INDEX { pnniNodeIndex,
pnniMapNodeId }

::= { pnniMapNodeTable 1 }

PnniMapNodeEntry ::=

SEQUENCE {

pnniMapNodeId	PnniNodeId,
pnniMapNodePeerGroupId	PnniPeerGroupId,
pnniMapNodeAtmAddress	PnniAtmAddr,
pnniMapNodeRestrictedTransit	TruthValue,
pnniMapNodeComplexRep	TruthValue,
pnniMapNodeRestrictedBranching	TruthValue,
pnniMapNodeDatabaseOverload	TruthValue,
pnniMapNodeIAMLeader	TruthValue,
pnniMapNodeLeadershipPriority	INTEGER,
pnniMapNodePreferredPgl	PnniNodeId,
pnniMapNodeParentNodeId	PnniNodeId,
pnniMapNodeParentAtmAddress	PnniAtmAddr,
pnniMapNodeParentPeerGroupId	PnniPeerGroupId,
pnniMapNodeParentPglNodeId	PnniNodeId

}

pnniMapNodeId OBJECT-TYPE

SYNTAX PnniNodeId

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"Identifies the node whose nodal information is being
described."

::= { pnniMapNodeEntry 1 }

pnniMapNodePeerGroupId OBJECT-TYPE

SYNTAX PnniPeerGroupId

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Identifies the peer group of the originating node."

::= { pnniMapNodeEntry 2 }

pnniMapNodeAtmAddress OBJECT-TYPE

SYNTAX PnniAtmAddr

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The ATM End System Address of the originating node."
 ::= { pnniMapNodeEntry 3 }

pnniMapNodeRestrictedTransit OBJECT-TYPE

SYNTAX TruthValue
MAX-ACCESS read-only
STATUS current

DESCRIPTION

"Indicates whether the originating node is restricted to only allow support of SVCs originating or terminating at this node. A value of `true` indicates that the transit capabilities are restricted, i.e., transit connections are not allowed, whereas a value of `false` indicates that transit connections are allowed. This attribute reflects the setting of the restricted transit bit received in the nodal information PTSE of the originating node."
 ::= { pnniMapNodeEntry 4 }

pnniMapNodeComplexRep OBJECT-TYPE

SYNTAX TruthValue
MAX-ACCESS read-only
STATUS current

DESCRIPTION

"Indicates whether the originating node uses the complex node representation. If the value is `true`, the spokes and bypasses that make up the complex node representation should be found in the pnniMapTable. This attribute reflects the setting of the nodal representation bit received in the nodal information PTSE of the originating node."
 ::= { pnniMapNodeEntry 5 }

pnniMapNodeRestrictedBranching OBJECT-TYPE

SYNTAX TruthValue
MAX-ACCESS read-only
STATUS current

DESCRIPTION

"Indicates whether the originating node is able to support additional branches. If the value is `false`, then it can support additional branches. This attribute reflects the setting of the restricted branching bit received in the nodal information PTSE of the originating node."
 ::= { pnniMapNodeEntry 6 }

pnniMapNodeDatabaseOverload OBJECT-TYPE

SYNTAX TruthValue
MAX-ACCESS read-only
STATUS current

DESCRIPTION

"Indicates whether the originating node is currently operating in topology database overload state. This attribute has the same value as the Non-transit for PGL Election bit in the nodal information group originated by this node."
 ::= { pnniMapNodeEntry 7 }


```

pnniMapNodeIAmLeader OBJECT-TYPE
    SYNTAX          TruthValue
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "Indicates whether the originating node claims to be peer
        group leader of its peer group.  This attribute reflects
        the setting of the 'I am Leader' bit received in the nodal
        information PTSE of the originating node."
    ::= { pnniMapNodeEntry 8 }

pnniMapNodeLeadershipPriority OBJECT-TYPE
    SYNTAX          INTEGER (0..255)
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "The Leadership priority value advertised by the originating
        node."
    ::= { pnniMapNodeEntry 9 }

pnniMapNodePreferredPgl OBJECT-TYPE
    SYNTAX          PnniNodeId
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "Identifies the node which the originating node believes
        should be or is peer group leader of its peer group.  If
        the originating node has not chosen a Preferred PGL, this
        attribute's value is set to (all) zero(s)."
    ::= { pnniMapNodeEntry 10 }

pnniMapNodeParentNodeId OBJECT-TYPE
    SYNTAX          PnniNodeId
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "When the originating node is a peer group leader, indicates
        the node ID of the parent LGN.  If the originating node is
        not peer group leader of its peer group, this attribute's
        value is set to (all) zero(s)."

    ::= { pnniMapNodeEntry 11 }

pnniMapNodeParentAtmAddress OBJECT-TYPE
    SYNTAX          PnniAtmAddr
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "When the originating node is a peer group leader, indicates
        the ATM address of the parent LGN.  If the originating node
        is not peer group leader of its peer group, this
        attribute's value is set to (all) zero(s)."
    ::= { pnniMapNodeEntry 12 }

pnniMapNodeParentPeerGroupId OBJECT-TYPE
    SYNTAX          PnniPeerGroupId

```

```

MAX-ACCESS      read-only
STATUS          current
DESCRIPTION
    "When the originating node is a peer group leader, indicates
    the node's parent peer group ID.  If the originating node
    is not peer group leader of its peer group, this
    attribute's value is set to (all) zero(s)."
```

::= { pnniMapNodeEntry 13 }

pnniMapNodeParentPglNodeId OBJECT-TYPE

```

SYNTAX          PnniNodeId
MAX-ACCESS      read-only
STATUS          current
DESCRIPTION
    "When the originating node is a peer group leader,
    identifies the node elected as peer group leader of the
    parent peer group.  If the originating node is not peer
    group leader of its peer group, this attribute's value is
    set to (all) zero(s)."
```

::= { pnniMapNodeEntry 14 }

-- address map table

pnniMapAddrTable OBJECT-TYPE

```

SYNTAX          SEQUENCE OF PnniMapAddrEntry
MAX-ACCESS      not-accessible
STATUS          current
DESCRIPTION
    "The pnniMapAddr MIB Object contains a list of all reachable
    addresses from each node visible to the local node.  The
    Local Node Index, Advertising Node ID, Advertised Port ID,
    Reachable Address, and Address prefix length are combined
    to form an instance ID for this object.  The entire object
    is read-only, reflecting the fact that reachable addresses
    are discovered during dynamic operation of the PNNI
    protocol rather than configured."
```

::= { pnniMIBObjects 16 }

pnniMapAddrEntry OBJECT-TYPE

```

SYNTAX          PnniMapAddrEntry
MAX-ACCESS      not-accessible
STATUS          current
DESCRIPTION
    "An entry in the table, containing information about an
    address prefix reachable from a node in the PNNI routing
    domain, as seen from the perspective of a PNNI logical node
    in this switching system."
```

INDEX { pnniNodeIndex,
 pnniMapAddrAdvertisingNodeId,
 pnniMapAddrAdvertisedPortId,
 pnniMapAddrIndex }

::= { pnniMapAddrTable 1 }

PnniMapAddrEntry ::=

```

SEQUENCE {
    pnniMapAddrAdvertisingNodeId    PnniNodeId,
```

```

        pnniMapAddrAdvertisedPortId      PnniPortId,
        pnniMapAddrIndex                  INTEGER,
        pnniMapAddrAddress                 AtmAddrPrefix,
        pnniMapAddrPrefixLength           PnniPrefixLength
    }

```

pnniMapAddrAdvertisingNodeId OBJECT-TYPE

```

    SYNTAX      PnniNodeId
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The node ID of a node advertising reachability to the
         address prefix."
    ::= { pnniMapAddrEntry 1 }

```

pnniMapAddrAdvertisedPortId OBJECT-TYPE

```

    SYNTAX      PnniPortId
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The port identifier used from the advertising node to reach
         the given address prefix."
    ::= { pnniMapAddrEntry 2 }

```

pnniMapAddrIndex OBJECT-TYPE

```

    SYNTAX      INTEGER (1..2147483647)
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "An arbitrary index that is used to enumerate all of the
         addresses advertised by the specified node."
    ::= { pnniMapAddrEntry 3 }

```

pnniMapAddrAddress OBJECT-TYPE

```

    SYNTAX      AtmAddrPrefix
    MAX-ACCESS  read-only

    STATUS      current
    DESCRIPTION
        "The value of the ATM End System Address prefix."
    ::= { pnniMapAddrEntry 4 }

```

pnniMapAddrPrefixLength OBJECT-TYPE

```

    SYNTAX      PnniPrefixLength
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The Prefix length to be applied to the ATM End System
         Address prefix."
    ::= { pnniMapAddrEntry 5 }

```

-- TNS map table

pnniMapTnsTable OBJECT-TYPE

```

    SYNTAX      SEQUENCE OF PnniMapTnsEntry
    MAX-ACCESS  not-accessible

```

```

STATUS          current
DESCRIPTION
    "A list of all reachable transit networks from each node
    visible to the local node.  The Local Node Index,
    Advertising Node ID, Advertised Port ID, Transit Network
    Type, Transit Network Plan, and Transit Network ID are
    combined to form an instance ID for this object.  The entire
    object is read-only, reflecting the fact that reachable
    transit networks are discovered during dynamic operation of
    the PNNI protocol rather than configured."
 ::= { pnniMIBObjects 17 }

```

```

pnniMapTnsEntry OBJECT-TYPE

```

```

SYNTAX          PnniMapTnsEntry
MAX-ACCESS      not-accessible
STATUS          current
DESCRIPTION
    "An entry in the table, containing information about a
    transit network reachable from a node in the PNNI routing
    domain, as seen from the perspective of a PNNI logical node
    in this switching system."
INDEX           { pnniNodeIndex,
                  pnniMapTnsAdvertisingNodeId,
                  pnniMapTnsAdvertisedPortId,
                  pnniMapTnsType,
                  pnniMapTnsPlan,
                  pnniMapTnsId }
 ::= { pnniMapTnsTable 1 }

```

```

PnniMapTnsEntry ::=

```

```

SEQUENCE {
    pnniMapTnsAdvertisingNodeId    PnniNodeId,
    pnniMapTnsAdvertisedPortId    PnniPortId,
    pnniMapTnsType                 TnsType,
    pnniMapTnsPlan                 TnsPlan,
    pnniMapTnsId                   DisplayString
}

```

```

pnniMapTnsAdvertisingNodeId OBJECT-TYPE

```

```

SYNTAX          PnniNodeId
MAX-ACCESS      not-accessible
STATUS          current
DESCRIPTION
    "The node ID of a node advertising reachability to the
    transit network."
 ::= { pnniMapTnsEntry 1 }

```

```

pnniMapTnsAdvertisedPortId OBJECT-TYPE

```

```

SYNTAX          PnniPortId
MAX-ACCESS      not-accessible
STATUS          current
DESCRIPTION
    "The port identifier used from the advertising node to reach
    the given transit network."
 ::= { pnniMapTnsEntry 2 }

```

```

pnniMapTnsType OBJECT-TYPE

```

```

SYNTAX          TnsType
MAX-ACCESS      not-accessible
STATUS          current
DESCRIPTION
    "The type of network identification used for this transit
    network."
 ::= { pnniMapTnsEntry 3 }

pnniMapTnsPlan OBJECT-TYPE
SYNTAX          TnsPlan
MAX-ACCESS      not-accessible
STATUS          current
DESCRIPTION
    "The network identification plan according to which network
    identification has been assigned."
 ::= { pnniMapTnsEntry 4 }

pnniMapTnsId OBJECT-TYPE
SYNTAX          DisplayString
MAX-ACCESS      read-only
STATUS          current
DESCRIPTION
    "The value of the transit network identifier."
 ::= { pnniMapTnsEntry 5 }

-- pnni metrics table

pnniMetricsTable OBJECT-TYPE
SYNTAX          SEQUENCE OF PnniMetricsEntry
MAX-ACCESS      not-accessible
STATUS          current
DESCRIPTION
    "This entity's table of PNNI parameters either associated
    with a PNNI entity or for the connectivity between a PNNI
    node and a reachable address or transit network."
REFERENCE
    "ATM Forum PNNI 1.1 Section 5.8.1.1.3"
 ::= { pnniMIBObjects 18 }

pnniMetricsEntry OBJECT-TYPE
SYNTAX          PnniMetricsEntry
MAX-ACCESS      not-accessible
STATUS          current
DESCRIPTION
    "A set of parameters that applies to the connectivity from a
    certain node and port to another node or port or to one or
    more reachable address prefixes and/or transit networks,
    for one (or more) particular service category(s). Note
    that there can be multiple sets of parameters with the same
    tag, in which case all sets apply to the specified
    connectivity."
REFERENCE
    "ATM Forum PNNI 1.1 Section 5.8.1.1.3"
INDEX          { pnniNodeIndex,
                pnniMetricsTag,

```

```
        pnniMetricsDirection,  
        pnniMetricsIndex }  
 ::= { pnniMetricsTable 1 }
```

```
PnniMetricsEntry ::=  
  SEQUENCE {  
    pnniMetricsTag          PnniMetricsTag,  
    pnniMetricsDirection   INTEGER,  
    pnniMetricsIndex       Integer32,  
    pnniMetricsClasses     INTEGER,  
    pnniMetricsGcacClp     ClpType,  
    pnniMetricsAdminWeight Unsigned32,  
    pnniMetrics1           Unsigned32,  
    pnniMetrics2           Unsigned32,  
    pnniMetrics3           Unsigned32,  
    pnniMetrics4           Unsigned32,  
    pnniMetrics5           Unsigned32,  
    pnniMetrics6           Unsigned32,  
    pnniMetrics7           Unsigned32,  
    pnniMetrics8           Unsigned32,  
    pnniMetricsRowStatus   RowStatus,  
    pnniMetricsAvcrIndicatorForUbr TruthValue,  
    pnniMetrics9           Unsigned32,  
    pnniMetricsGfrCapability GfrCapability,  
    pnniMetrics10          Unsigned32  
  }
```

pnniMetricsTag OBJECT-TYPE

```
SYNTAX      PnniMetricsTag (1..2147483647)  
MAX-ACCESS  not-accessible  
STATUS      current  
DESCRIPTION
```

"An arbitrary integer that is used to associate a set of traffic parameters that are always advertised together. Within this set, the parameters are distinguished by the service categories and direction to which a set of parameters apply."

```
 ::= { pnniMetricsEntry 1 }
```

pnniMetricsDirection OBJECT-TYPE

```
SYNTAX      INTEGER { incoming(1), outgoing(2) }  
MAX-ACCESS  not-accessible  
STATUS      current  
DESCRIPTION
```

"The direction, with respect to the advertising node, in which the parameters in this entry apply."

```
 ::= { pnniMetricsEntry 2 }
```

pnniMetricsIndex OBJECT-TYPE

```
SYNTAX      Integer32 (1..2147483647)  
MAX-ACCESS  not-accessible  
STATUS      current  
DESCRIPTION
```

"An index into the set of parameters associated with the

given tag and direction."
 ::= { pnniMetricsEntry 3 }

pnniMetricsClasses OBJECT-TYPE

SYNTAX INTEGER(0..63)

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The service categories to which this set of parameters applies. This is an integer used as a bit mask with each bit that is set representing a single service category for which the resources indicated are available. Bit 6 represents GFR, bit 5 represents CBR, bit 4 represents real-time VBR, bit 3 represents non-real-time VBR, bit 2 represents ABR, and bit 1 (LSB) represents UBR."

REFERENCE

"ATM Forum Traffic Management 4.1 Section 2,
ATM Forum PNNI 1.1 Section 5.8.1.1.3.1,
ATM Forum Guaranteed Frame Rate (GFR) Signalling Specification
(PNNI, AINI, and UNI), Version 1.0 Section 4.2"

::= { pnniMetricsEntry 4 }

pnniMetricsGcacClp OBJECT-TYPE

SYNTAX ClpType

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"Indicates whether the advertised GCAC parameters apply for CLP=0 traffic or for CLP=0+1 traffic."

REFERENCE

"ATM Forum PNNI 1.1 Sections 5.8.1.1.3.1, 5.13.4.1"

::= { pnniMetricsEntry 5 }

pnniMetricsAdminWeight OBJECT-TYPE

SYNTAX Unsigned32 (1..16777215)

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The administrative weight from the advertising node to the remote end of the PNNI entity or to the reachable address or transit network, for the specified service categories."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.1.1.3.4"

DEFVAL { 5040 }

::= { pnniMetricsEntry 6 }

pnniMetrics1 OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"An alternate routing parameter from the advertising node to the remote end of the PNNI entity or to the reachable

address or transit network, for the specified service categories.

For information learned from PNNI nodes, this is the maximum cell rate in cells per second for the specified service categories.

If this parameter is not used, its value should be set to 0xFFFFFFFF."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.1.1.3.7"

DEFVAL { 'FFFFFFFF'h }

::= { pnniMetricsEntry 7 }

pnniMetrics2 OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"An alternate routing parameter from the advertising node to the remote end of the PNNI entity or to the reachable address or transit network, for the specified service categories.

For information learned from PNNI nodes, this is the available cell rate in cells per second for the specified service categories.

If this parameter is not used, its value should be set to 0xFFFFFFFF."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.1.1.3.8"

DEFVAL { 'FFFFFFFF'h }

::= { pnniMetricsEntry 8 }

pnniMetrics3 OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"An alternate routing parameter from the advertising node to the remote end of the PNNI entity or to the reachable address or transit network, for the specified service categories.

For information learned from PNNI nodes, this is the maximum cell transfer delay in microseconds for the specified service categories.

If this parameter is not used, its value should be set to 0xFFFFFFFF."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.1.1.3.3"

DEFVAL { 'FFFFFFFF'h }

::= { pnniMetricsEntry 9 }

pnniMetrics4 OBJECT-TYPE

SYNTAX Unsigned32
MAX-ACCESS read-create
STATUS current

DESCRIPTION

"An alternate routing parameter from the advertising node to the remote end of the PNNI entity or to the reachable address or transit network, for the specified service categories.

For information learned from PNNI nodes, this is the cell delay variation in microseconds for the specified service categories.

If this parameter is not used, its value should be set to 0xFFFFFFFF."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.1.1.3.2"

DEFVAL { 'FFFFFFFF'h }
 ::= { pnniMetricsEntry 10 }

pnniMetrics5 OBJECT-TYPE

SYNTAX Unsigned32
MAX-ACCESS read-create
STATUS current

DESCRIPTION

"An alternate routing parameter from the advertising node to the remote end of the PNNI entity or to the reachable address or transit network, for the specified service categories.

For PNNI, this is the cell loss ratio for CLP=0 traffic for the specified service categories. The cell loss ratio value is computed as $10^{*(-n)}$ where 'n' is the value returned in this variable.

If this parameter is not used, its value should be set to 0xFFFFFFFF."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.1.1.3.5"

DEFVAL { 'FFFFFFFF'h }
 ::= { pnniMetricsEntry 11 }

pnniMetrics6 OBJECT-TYPE

SYNTAX Unsigned32
MAX-ACCESS read-create
STATUS current

DESCRIPTION

"An alternate routing parameter from the advertising node to the remote end of the PNNI entity or to the reachable address or transit network, for the specified service categories.

For PNNI, this is the cell loss ratio for CLP=0+1 traffic for the specified service categories. The cell loss ratio value is computed as $10^{*(-n)}$ where 'n' is the value returned in this variable.

If this parameter is not used, its value should be set to 0xFFFFFFFF."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.1.1.3.6"

DEFVAL { 'FFFFFFFF'h }

::= { pnniMetricsEntry 12 }

pnniMetrics7 OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"An alternate routing parameter from the advertising node to the remote end of the PNNI entity or to the reachable address or transit network, for the specified service categories.

For information learned from PNNI nodes, this is the cell rate margin in cells per second for the specified service categories.

If this parameter is not used, its value should be set to 0xFFFFFFFF."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.1.1.3.9"

DEFVAL { 'FFFFFFFF'h }

::= { pnniMetricsEntry 13 }

pnniMetrics8 OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"An alternate routing parameter from the advertising node to the remote end of the PNNI entity or to the reachable address or transit network, for the specified service categories.

For information learned from PNNI nodes, this is the variance factor in units of $2^{*(-8)}$ for the specified service categories.

If this parameter is not used, its value should be set to 0xFFFFFFFF."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.1.1.3.10"

DEFVAL { 'FFFFFFFF'h }

::= { pnniMetricsEntry 14 }

pnniMetricsRowStatus OBJECT-TYPE

SYNTAX RowStatus
MAX-ACCESS read-create
STATUS current

DESCRIPTION

"To create, delete, activate and de-activate a set of metrics."

::= { pnniMetricsEntry 15 }

pnniMetricsAvcrIndicatorForUbr OBJECT-TYPE

SYNTAX TruthValue
MAX-ACCESS read-create
STATUS current

DESCRIPTION

"When bit 1 (UBR) of pnniMetricsClasses is set to one, this object reflects the value of the AvCR indicator for UBR. In this case, when the value of this object is 'true', then pnniMetrics2 provides a measure of the capacity not reserved for service commitments. When the value of this object is 'false', then pnniMetrics2 is not applicable to the UBR service category.

This object does not apply when bit 1 (UBR) of pnniMetricsClasses is set to zero."

REFERENCE

"UBR with MDCR Addendum to UNI Signalling 4.0, PNNI 1.0 and AINI Section 5.3 Clause 5.8.1.1.3.8/PNNI 1.1"

::= { pnniMetricsEntry 16 }

pnniMetrics9 OBJECT-TYPE

SYNTAX Unsigned32
MAX-ACCESS read-create
STATUS current

DESCRIPTION

"An alternate routing parameter from the advertising node to the remote end of the PNNI entity or to the reachable address or transit network, for the specified service categories.

For information learned from PNNI nodes, this is the BeCR in cells per second. This value is applicable only when bit 1 of pnniMetricsClasses is set to 1.

If this parameter is not used, its value should be set to 0xFFFFFFFF."

REFERENCE

"UBR with MDCR Addendum to UNI Signalling 4.0, PNNI 1.0 and AINI"

::= { pnniMetricsEntry 17 }

pnniMetricsGfrCapability OBJECT-TYPE

SYNTAX GfrCapability
MAX-ACCESS read-create
STATUS current

DESCRIPTION

"When bit 6 of the of the pnniMetricsClasses is set to one this object indicates the GFR Conformance definitions supported.

This object does not apply when bit 6 of the pnniMetricsClasses is set to zero."

REFERENCE

"ATM Forum Guaranteed Frame Rate (GFR) Signalling Specification (PNNI, AINI, and UNI), Version 1.0 Section 4.2"

::= { pnniMetricsEntry 18 }

pnniMetrics10 OBJECT-TYPE

SYNTAX Unsigned32
MAX-ACCESS read-create
STATUS current

DESCRIPTION

"An alternate routing parameter from the advertising node to the remote end of the PNNI entity or to the reachable address or transit network, for the specified service categories.

For information learned from PNNI nodes, this is the AccBCT expressed in units of cells. This value is applicable only for the GFR service category.

If this parameter is not used, its value should be set to 0xFFFFFFFF."

REFERENCE

"ATM Forum Guaranteed Frame Rate (GFR) Signalling Specification (PNNI, AINI, and UNI), Version 1.0 Section 4.2"

::= { pnniMetricsEntry 19 }

--

-- PNNI Routing Tables

--

pnniRoutingGroup OBJECT IDENTIFIER ::= { pnniMIBObjects 19 }

pnniRouteBaseGroup OBJECT IDENTIFIER ::= { pnniRoutingGroup 1 }

pnniRouteNodeNumber OBJECT-TYPE

SYNTAX Gauge32
MAX-ACCESS read-only
STATUS current

DESCRIPTION

"The number of current precalculated PNNI routes to PNNI nodes that are not invalid."

::= { pnniRouteBaseGroup 1 }

pnniRouteAddrNumber OBJECT-TYPE

SYNTAX Gauge32
MAX-ACCESS read-only
STATUS current

DESCRIPTION

"The number of current PNNI routes from nodes in the PNNI routing domain to addresses and transit networks that are not invalid."

::= { pnniRouteBaseGroup 2 }

-- Table of routes to other nodes

```

pnniRouteNodeTable OBJECT-TYPE
    SYNTAX          SEQUENCE OF PnniRouteNodeEntry
    MAX-ACCESS      not-accessible
    STATUS           current
    DESCRIPTION
        "This entity's PNNI Routing table (of routes to other
        nodes)."
```

::= { pnniRoutingGroup 2 }

```

pnniRouteNodeEntry OBJECT-TYPE
    SYNTAX          PnniRouteNodeEntry
    MAX-ACCESS      not-accessible
    STATUS           current
    DESCRIPTION
        "A particular route to a particular destination node, under
        a particular policy."
```

INDEX { pnniNodeIndex,
 pnniRouteNodeClass,
 pnniRouteNodeDestNodeId,
 pnniRouteNodeDTL }

::= { pnniRouteNodeTable 1 }

```

PnniRouteNodeEntry ::=
    SEQUENCE {
        pnniRouteNodeClass      ServiceCategory,
        pnniRouteNodeDestNodeId PnniNodeId,
        pnniRouteNodeDTL        Integer32,
        pnniRouteNodeDestPortId PnniPortId,
        pnniRouteNodeProto      INTEGER,
        pnniRouteNodeTimeStamp  TimeStamp,
        pnniRouteNodeInfo       OBJECT IDENTIFIER,
        pnniRouteNodeGcacClp    ClpType,
        pnniRouteNodeFwdMetricAW Unsigned32,
        pnniRouteNodeFwdMetric1 Unsigned32,
        pnniRouteNodeFwdMetric2 Unsigned32,
        pnniRouteNodeFwdMetric3 Unsigned32,
        pnniRouteNodeFwdMetric4 Unsigned32,
        pnniRouteNodeFwdMetric5 Unsigned32,
        pnniRouteNodeFwdMetric6 Unsigned32,
        pnniRouteNodeFwdMetric7 Unsigned32,
        pnniRouteNodeFwdMetric8 Unsigned32,
        pnniRouteNodeBwdMetricAW Unsigned32,
        pnniRouteNodeBwdMetric1 Unsigned32,
        pnniRouteNodeBwdMetric2 Unsigned32,
        pnniRouteNodeBwdMetric3 Unsigned32,
        pnniRouteNodeBwdMetric4 Unsigned32,
        pnniRouteNodeBwdMetric5 Unsigned32,
        pnniRouteNodeBwdMetric6 Unsigned32,
        pnniRouteNodeBwdMetric7 Unsigned32,
        pnniRouteNodeBwdMetric8 Unsigned32,
        pnniRouteNodeVPCapability TruthValue,
        pnniRouteNodeStatus      RowStatus,
        pnniRouteNodeGfrCapability GfrCapability
    }
```

```

pnniRouteNodeClass OBJECT-TYPE
    SYNTAX          ServiceCategory
```

```

MAX-ACCESS    not-accessible
STATUS        current
DESCRIPTION
    "Indicates the service category with which this forwarding
      table entry is associated."
 ::= { pnniRouteNodeEntry 1 }

pnniRouteNodeDestNodeId OBJECT-TYPE
SYNTAX        PnniNodeId
MAX-ACCESS    not-accessible
STATUS        current
DESCRIPTION
    "The node ID of the destination node to which this route
      proceeds, and at which the DTL stack for this route
      terminates."
 ::= { pnniRouteNodeEntry 2 }

pnniRouteNodeDTL OBJECT-TYPE
SYNTAX        Integer32 (1..2147483647)
MAX-ACCESS    not-accessible
STATUS        current
DESCRIPTION
    "The index into the owning PNNI node's DTL table of the DTL
      stack that goes with this route."
 ::= { pnniRouteNodeEntry 3 }

pnniRouteNodeDestPortId OBJECT-TYPE
SYNTAX        PnniPortId
MAX-ACCESS    read-create
STATUS        current
DESCRIPTION
    "The port ID of the destination node at which the route
      terminates. A port ID of zero indicates the node nucleus.
      When the destination node is represented by the simple node
      representation, this value should be set to zero."
DEFVAL { 0 }
 ::= { pnniRouteNodeEntry 4 }

pnniRouteNodeProto OBJECT-TYPE
SYNTAX        INTEGER {
                    other(1), -- not specified
                    local(2), -- e.g. ilmi
                    mgmt(3), -- configured by management,
                               -- for example by SNMP or console
                               -- the following are all dynamic
                               -- routing protocols
                    pnni(4) -- ATM Forum PNNI
                }
MAX-ACCESS    read-only
STATUS        current
DESCRIPTION
    "The routing mechanism via which this route was learned."
 ::= { pnniRouteNodeEntry 5 }

pnniRouteNodeTimeStamp OBJECT-TYPE
SYNTAX        TimeStamp

```

```

MAX-ACCESS      read-only
STATUS          current
DESCRIPTION
    "The time at which this route was last updated or
    otherwise determined to be correct. Note that no
    semantics of `too old' can be implied except through
    knowledge of the routing protocol by which the route
    was learned."
 ::= { pnniRouteNodeEntry 6 }

pnniRouteNodeInfo OBJECT-TYPE
SYNTAX          OBJECT IDENTIFIER
MAX-ACCESS      read-create
STATUS          current
DESCRIPTION
    "A reference to MIB definitions specific to the particular
    routing protocol which is responsible for this route, as
    determined by the value specified in the route's
    pnniRouteNodeProto value. If this information is not
    present, its value should be set to the OBJECT IDENTIFIER
    zeroDotZero."
DEFVAL { zeroDotZero }
 ::= { pnniRouteNodeEntry 7 }

pnniRouteNodeGcacClp OBJECT-TYPE
SYNTAX          ClpType
MAX-ACCESS      read-create
STATUS          current
DESCRIPTION
    "For PNNI, indicates whether any advertised GCAC parameters
    apply for CLP=0 traffic or for CLP=0+1 traffic."
 ::= { pnniRouteNodeEntry 8 }

pnniRouteNodeFwdMetricAW OBJECT-TYPE
SYNTAX          Unsigned32
MAX-ACCESS      read-create
STATUS          current
DESCRIPTION
    "The cumulative administrative weight calculated for the
    forward direction of this route. If this metric is not
    used, its value should be set to 0xFFFFFFFF."
REFERENCE
    "ATM Forum PNNI 1.1 Section 5.8.1.1.3.4"
DEFVAL { 'FFFFFFFF'h }
 ::= { pnniRouteNodeEntry 9 }

pnniRouteNodeFwdMetricCl OBJECT-TYPE
SYNTAX          Unsigned32
MAX-ACCESS      read-create
STATUS          current
DESCRIPTION
    "An alternate routing parameter for the forward direction of
    this route.

    For information learned from PNNI nodes, this is the
    maximum possible cell rate (in cells per second) for the
    forward direction of the route."

```

If this parameter is not used, its value should be set to 0xFFFFFFFF."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.1.1.3.7"

DEFVAL { 'FFFFFFFF'h }

::= { pnniRouteNodeEntry 10 }

pnniRouteNodeFwdMetric2 OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"An alternate routing parameter for the forward direction of this route.

For information learned from PNNI nodes, this is the Available cell rate (in cells per second) for the forward direction of the route. Further information on available bandwidth may be obtainable by reference to the nodal advertisements of the nodes in the path.

If this parameter is not used, its value should be set to 0xFFFFFFFF."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.1.1.3.8"

DEFVAL { 'FFFFFFFF'h }

::= { pnniRouteNodeEntry 11 }

pnniRouteNodeFwdMetric3 OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"An alternate routing parameter for the forward direction of this route.

For information learned from PNNI nodes, this is the cumulative Maximum Cell Transfer Delay (in microseconds) for the forward direction of the route.

If this parameter is not used, its value should be set to 0xFFFFFFFF."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.1.1.3.3"

DEFVAL { 'FFFFFFFF'h }

::= { pnniRouteNodeEntry 12 }

pnniRouteNodeFwdMetric4 OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"An alternate routing parameter for the forward direction of this route.

For information learned from PNNI nodes, this is the

cumulative Cell Delay Variation (in microseconds) for the forward direction of the route.

If this parameter is not used, its value should be set to 0xFFFFFFFF."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.1.1.3.2"

DEFVAL { 'FFFFFFFF'h }

::= { pnniRouteNodeEntry 13 }

pnniRouteNodeFwdMetric5 OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"An alternate routing parameter for the forward direction of this route.

For information learned from PNNI nodes, this is the cumulative Cell Loss Ratio for CLP=0 traffic for the forward direction of the route. The cell loss ratio value is computed as $10^{*(-n)}$ where 'n' is the value returned in this variable.

If this parameter is not used, its value should be set to 0xFFFFFFFF."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.1.1.3.5"

DEFVAL { 'FFFFFFFF'h }

::= { pnniRouteNodeEntry 14 }

pnniRouteNodeFwdMetric6 OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"An alternate routing parameter for the forward direction of this route.

For information learned from PNNI nodes, this is the cumulative Cell Loss Ratio for CLP=0+1 traffic for the forward direction of the route. The cell loss ratio value is computed as $10^{*(-n)}$ where 'n' is the value returned in this variable.

If this parameter is not used, its value should be set to 0xFFFFFFFF."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.1.1.3.6"

DEFVAL { 'FFFFFFFF'h }

::= { pnniRouteNodeEntry 15 }

pnniRouteNodeFwdMetric7 OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"An alternate routing parameter for the forward direction of this route.

For information learned from PNNI nodes, this is the Cell Rate Margin (in cells per second) for the forward direction of the route.

If this parameter is not used, its value should be set to 0xFFFFFFFF."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.1.1.3.9"

DEFVAL { 'FFFFFFFF'h }

::= { pnniRouteNodeEntry 16 }

pnniRouteNodeFwdMetric8 OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"An alternate routing parameter for the forward direction of this route.

For information learned from PNNI nodes, this is the Variance Factor (in units of $2^{(-8)}$) for the forward direction of the route.

If this parameter is not used, its value should be set to 0xFFFFFFFF."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.1.1.3.10"

DEFVAL { 'FFFFFFFF'h }

::= { pnniRouteNodeEntry 17 }

pnniRouteNodeBwdMetricAW OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The administrative weight calculated for the backward direction of this route. If this metric is not used, its value should be set to 0xFFFFFFFF."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.1.1.3.4"

DEFVAL { 'FFFFFFFF'h }

::= { pnniRouteNodeEntry 18 }

pnniRouteNodeBwdMetric1 OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"An alternate routing parameter for the backward direction of this route.

For information learned from PNNI nodes, this is the maximum possible cell rate (in cells per second) for the

backward direction of the route.

If this parameter is not used, its value should be set to 0xFFFFFFFF."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.1.1.3.7"

DEFVAL { 'FFFFFFFF'h }

::= { pnniRouteNodeEntry 19 }

pnniRouteNodeBwdMetric2 OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"An alternate routing parameter for the backward direction of this route.

For information learned from PNNI nodes, this is the Available cell rate (in cells per second) for the backward direction of the route. Further information on available bandwidth may be obtainable by reference to the nodal advertisements of the nodes in the path.

If this parameter is not used, its value should be set to 0xFFFFFFFF."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.1.1.3.8"

DEFVAL { 'FFFFFFFF'h }

::= { pnniRouteNodeEntry 20 }

pnniRouteNodeBwdMetric3 OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"An alternate routing parameter for the backward direction of this route.

For information learned from PNNI nodes, this is the cumulative Maximum Cell Transfer Delay (in microseconds) for the backward direction of the route.

If this parameter is not used, its value should be set to 0xFFFFFFFF."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.1.1.3.3"

DEFVAL { 'FFFFFFFF'h }

::= { pnniRouteNodeEntry 21 }

pnniRouteNodeBwdMetric4 OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"An alternate routing parameter for the backward direction of this route.

For information learned from PNNI nodes, this is the cumulative Cell Delay Variation (in microseconds) for the backward direction of the route.

If this parameter is not used, its value should be set to 0xFFFFFFFF."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.1.1.3.2"

DEFVAL { 'FFFFFFFF'h }

::= { pnniRouteNodeEntry 22 }

pnniRouteNodeBwdMetric5 OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"An alternate routing parameter for the backward direction of this route.

For information learned from PNNI nodes, this is the cumulative Cell Loss Ratio for CLP=0 traffic for the backward direction of the route. The cell loss ratio value is computed as $10^{*(-n)}$ where 'n' is the value returned in this variable.

If this parameter is not used, its value should be set to 0xFFFFFFFF."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.1.1.3.5"

DEFVAL { 'FFFFFFFF'h }

::= { pnniRouteNodeEntry 23 }

pnniRouteNodeBwdMetric6 OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"An alternate routing parameter for the backward direction of this route.

For information learned from PNNI nodes, this is the cumulative Cell Loss Ratio for CLP=0+1 traffic for the backward direction of the route. The cell loss ratio value is computed as $10^{*(-n)}$ where 'n' is the value returned in this variable.

If this parameter is not used, its value should be set to 0xFFFFFFFF."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.1.1.3.6"

DEFVAL { 'FFFFFFFF'h }

::= { pnniRouteNodeEntry 24 }

pnniRouteNodeBwdMetric7 OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current
DESCRIPTION
"An alternate routing parameter for the backward direction of this route.

For information learned from PNNI nodes, this is the Cell Rate Margin (in cells per second) for the backward direction of the route.

If this parameter is not used, its value should be set to 0xFFFFFFFF."
REFERENCE
"ATM Forum PNNI 1.1 Section 5.8.1.1.3.9"
DEFVAL { 'FFFFFFFF'h }
::= { pnniRouteNodeEntry 25 }

pnniRouteNodeBwdMetric8 OBJECT-TYPE

SYNTAX Unsigned32
MAX-ACCESS read-create
STATUS current
DESCRIPTION
"An alternate routing parameter for the backward direction of this route.

For information learned from PNNI nodes, this is the Variance Factor (in units of $2^{(-8)}$) for the backward direction of the route.

If this parameter is not used, its value should be set to 0xFFFFFFFF."
REFERENCE
"ATM Forum PNNI 1.1 Section 5.8.1.1.3.10"
DEFVAL { 'FFFFFFFF'h }
::= { pnniRouteNodeEntry 26 }

pnniRouteNodeVPCapability OBJECT-TYPE

SYNTAX TruthValue
MAX-ACCESS read-create
STATUS current
DESCRIPTION
"This attribute indicates whether a VPC setup on this route is possible."
::= { pnniRouteNodeEntry 27 }

pnniRouteNodeStatus OBJECT-TYPE

SYNTAX RowStatus
MAX-ACCESS read-create
STATUS current
DESCRIPTION
"The row status variable, used according to row installation and removal conventions."
::= { pnniRouteNodeEntry 28 }

pnniRouteNodeGfrCapability OBJECT-TYPE

SYNTAX GfrCapability
MAX-ACCESS read-create
STATUS current

DESCRIPTION

"When pnniRouteNodeClass is set to 'gfr', this object indicates the GFR conformance definitions supported on this route. This object does not apply when the pnniRouteNodeClass is set to any other value than 'gfr'."

REFERENCE

"ATM Forum Guaranteed Frame Rate (GFR) Signalling Specification (PNNI, AINI, and UNI), Version 1.0 Section 4.2"

::= { pnniRouteNodeEntry 29 }

-- Table of DTL stacks for routes to other nodes

pnniDTLTable OBJECT-TYPE

SYNTAX SEQUENCE OF PnniDTLEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"The set of all DTL stacks used for the pre-computed routes maintained by this managed entity."

::= { pnniRoutingGroup 3 }

pnniDTLEntry OBJECT-TYPE

SYNTAX PnniDTLEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"A segment of a DTL stack. The complete DTL stack is formed by traversing the rows of the table for which the pnniDTLIndex is the same. Level transitions are indicated using the pnniDTLLinkType column."

INDEX {
 pnniNodeIndex,
 pnniDTLIndex,
 pnniDTLEntryIndex
}

::= { pnniDTLTable 1 }

PnniDTLEntry ::=

SEQUENCE {
 pnniDTLIndex Integer32,
 pnniDTLEntryIndex Integer32,
 pnniDTLNodeId PnniNodeId,
 pnniDTLPortId PnniPortId,
 pnniDTLLinkType INTEGER,
 pnniDTLStatus RowStatus
}

pnniDTLIndex OBJECT-TYPE

SYNTAX Integer32 (1..2147483647)

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"The index in the node's DTL table of this DTL stack."

::= { pnniDTLEntry 1 }

pnniDTLEntryIndex OBJECT-TYPE

```

SYNTAX      Integer32 (1..200)
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "The index in the current DTL stack of this entry."
 ::= { pnniDTLEntry 2 }

```

pnniDTLNodeId OBJECT-TYPE

```

SYNTAX      PnniNodeId
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "The node which is this hop in the DTL stack."
 ::= { pnniDTLEntry 3 }

```

pnniDTLPortId OBJECT-TYPE

```

SYNTAX      PnniPortId
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "The port from the pnniDTLNodeId to use as the exit.  If the
    DTL stack does not care, this is coded as zero."
 ::= { pnniDTLEntry 4 }

```

pnniDTLLinkType OBJECT-TYPE

```

SYNTAX      INTEGER {
                invalid      (1), -- An invalid link
                horizontal   (2), -- A normal link within
                                -- the containing peer group
                uplink       (3), -- A link going up a
                                -- level
                last         (4) -- The last entry in the
                                -- DTL stack
            }
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "The type of link out from this node (pnniDTLNodeId).  This
    is well defined even if the specific port is not
    specified."
 ::= { pnniDTLEntry 5 }

```

pnniDTLStatus OBJECT-TYPE

```

SYNTAX      RowStatus
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "The row status variable, used according to row installation
    and removal conventions."
 ::= { pnniDTLEntry 6 }

```

-- Table of routes from nodes to reachable addresses

pnniRouteAddrTable OBJECT-TYPE

```

SYNTAX      SEQUENCE OF PnniRouteAddrEntry
MAX-ACCESS  not-accessible

```

STATUS current

DESCRIPTION
 "A table containing all the attributes necessary to determine what the PNNI entity believes is reachable in terms of ATM End System Addresses and to determine which nodes are advertising this reachability. This table is also used to configure static routes to reachable address prefixes. The local node index that received the reachability information, reachable address, address prefix length, and an index that distinguishes between multiple listings of connectivity to a given address prefix from a given local node are combined to form an instance ID for this object."

REFERENCE
 "ATM Forum PNNI 1.1 Section 5.8.1.3"
 ::= { pnniRoutingGroup 4 }

pnniRouteAddrEntry OBJECT-TYPE
 SYNTAX PnniRouteAddrEntry
 MAX-ACCESS not-accessible
 STATUS current
 DESCRIPTION
 "An entry in the table, containing information about a reachable address prefix."
 REFERENCE
 "ATM Forum PNNI 1.1 Section 5.8.1.3"
 INDEX { pnniNodeIndex,
 pnniRouteAddrAddress,
 pnniRouteAddrPrefixLength,
 pnniRouteAddrIndex }
 ::= { pnniRouteAddrTable 1 }

PnniRouteAddrEntry ::=

SEQUENCE {		
	pnniRouteAddrAddress	AtmAddrPrefix,
	pnniRouteAddrPrefixLength	PnniPrefixLength,
	pnniRouteAddrIndex	Integer32,
	pnniRouteAddrIfIndex	InterfaceIndex,
	pnniRouteAddrAdvertisingNodeId	PnniNodeId,
	pnniRouteAddrAdvertisedPortId	PnniPortId,
	pnniRouteAddrType	INTEGER,
	pnniRouteAddrProto	INTEGER,
	pnniRouteAddrPnniScope	PnniLevel,
	pnniRouteAddrVPCapability	TruthValue,
	pnniRouteAddrMetricsTag	PnniMetricsTag,
	pnniRouteAddrPtseId	Unsigned32,
	pnniRouteAddrOriginateAdvertisement	TruthValue,
	pnniRouteAddrInfo	OBJECT IDENTIFIER,
	pnniRouteAddrOperStatus	INTEGER,
	pnniRouteAddrTimeStamp	TimeStamp,
	pnniRouteAddrRowStatus	RowStatus
}		

pnniRouteAddrAddress OBJECT-TYPE
 SYNTAX AtmAddrPrefix
 MAX-ACCESS not-accessible
 STATUS current
 DESCRIPTION
 "The value of the ATM End System Address prefix."


```

 ::= { pnniRouteAddrEntry 1 }

pnniRouteAddrPrefixLength OBJECT-TYPE
    SYNTAX      PnniPrefixLength
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The prefix length to be applied to the ATM End System
        Address prefix."
 ::= { pnniRouteAddrEntry 2 }

pnniRouteAddrIndex OBJECT-TYPE
    SYNTAX      Integer32 (1..65535)
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "An index into the set of listings of connectivity to a
        given address prefix from a given local node."
 ::= { pnniRouteAddrEntry 3 }

pnniRouteAddrIfIndex OBJECT-TYPE
    SYNTAX      InterfaceIndex
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The local interface over which the reachable address can be
        reached. The value zero indicates an unknown interface or
        reachability through a remote node.

        This object may only have a non-zero value if the value of
        the corresponding instance of pnniRouteAddrProto is other
        than 'pnni', pnniRouteAddrType is other than 'reject', and
        the node identified by pnniRouteAddrAdvertisingNodeId is
        instantiated within this switching system."
 ::= { pnniRouteAddrEntry 4 }

pnniRouteAddrAdvertisingNodeId OBJECT-TYPE
    SYNTAX      PnniNodeId
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The node ID of a node advertising reachability to the
        address prefix. If the local node index is zero, then the
        advertising node ID must be set to all zeros."
 ::= { pnniRouteAddrEntry 5 }

pnniRouteAddrAdvertisedPortId OBJECT-TYPE
    SYNTAX      PnniPortId
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The port identifier used from the advertising node to reach
        the given address prefix."
    DEFVAL { 0 }
 ::= { pnniRouteAddrEntry 6 }

pnniRouteAddrType OBJECT-TYPE
    SYNTAX      INTEGER {

```

```

        other(1), -- not specified by this MIB
        reject(2), -- route which discards
                    -- traffic
        internal(3),
        exterior(4)
    }
MAX-ACCESS      read-create
STATUS          current
DESCRIPTION
    "The type (e.g. internal or exterior) of reachability from
    the advertising node to the address prefix.

    Reject(2) refers to an address prefix which, if matched,
    indicates that the message should be discarded as
    unreachable. This is used in some protocols as a means of
    correctly aggregating routes."
REFERENCE
    "ATM Forum PNNI 1.1 Section 5.8.1.3"
DEFVAL { exterior }
 ::= { pnniRouteAddrEntry 7 }

pnniRouteAddrProto OBJECT-TYPE
    SYNTAX          INTEGER {
        other(1), -- not specified
        local(2), -- e.g. ilmi
        mgmt(3), -- configured by management,
                    -- for example by SNMP or console
                    -- the following are all dynamic
                    -- routing protocols
        pnni(4) -- ATM Forum PNNI
    }
MAX-ACCESS      read-only
STATUS          current
DESCRIPTION
    "The routing mechanism via which the connectivity from the
    advertising node to the reachable address prefix was
    learned."
 ::= { pnniRouteAddrEntry 8 }

pnniRouteAddrPnniScope OBJECT-TYPE
    SYNTAX          PnniLevel
MAX-ACCESS      read-create
STATUS          current
DESCRIPTION
    "The PNNI scope of advertisement (i.e. level of PNNI
    hierarchy) of the reachability from the advertising node to
    the address prefix."
REFERENCE
    "ATM Forum PNNI 1.1 Sections 5.3.6, 5.9.1"
 ::= { pnniRouteAddrEntry 9 }

pnniRouteAddrVPCapability OBJECT-TYPE
    SYNTAX          TruthValue
MAX-ACCESS      read-create
STATUS          current
DESCRIPTION

```

"Indicates whether VPCs can be established from the advertising node to the reachable address prefix."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.14.9.1 Table 5-34"

::= { pnniRouteAddrEntry 10 }

pnniRouteAddrMetricsTag OBJECT-TYPE

SYNTAX PnniMetricsTag

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The index into the pnniMetricsTable for the traffic parameter values that apply for the connectivity from the advertising node to the reachable address prefix. There will be one or more entries in the pnniMetricsTable whose first instance identifier matches the value of this variable.

If there are no parameters associated with this reachable address prefix then the distinguished value zero is used."

DEFVAL { 0 }

::= { pnniRouteAddrEntry 11 }

pnniRouteAddrPtseId OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"For reachable addresses learned via PNNI, this attribute contains the value of the PTSE Identifier for the PTSE being originated by the originating node which contains the information group(s) describing the reachable address. For reachable addresses learned by means other than PNNI, this attribute is set to zero."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.2"

::= { pnniRouteAddrEntry 12 }

pnniRouteAddrOriginateAdvertisement OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"Whether or not the reachable address specified by this entry is to be advertised by the local node into its PNNI routing domain.

This object may only take on the value 'true' when the value of the corresponding instance of pnniRouteAddrProto is other than 'pnni'."

DEFVAL { true }

::= { pnniRouteAddrEntry 13 }

pnniRouteAddrInfo OBJECT-TYPE

SYNTAX OBJECT IDENTIFIER

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"A reference to MIB definitions specific to the particular routing protocol which is responsible for this reachable address prefix, as determined by the value specified in the route's pnniRouteAddrProto value. If this information is not present, its value should be set to the OBJECT IDENTIFIER zeroDotZero."

DEFVAL { zeroDotZero }
 ::= { pnniRouteAddrEntry 14 }

pnniRouteAddrOperStatus OBJECT-TYPE

SYNTAX INTEGER {
 inactive(1),
 active(2), -- i.e. reachability to this
 -- prefix exists and is not
 -- being advertised in PNNI
 advertised(3)
 }

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Indicates whether the reachable address prefix is operationally valid and whether it is being advertised by this node."

::= { pnniRouteAddrEntry 15 }

pnniRouteAddrTimeStamp OBJECT-TYPE

SYNTAX TimeStamp

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Indicates when the connectivity from the advertising node to the reachable address prefix became known to the local node."

::= { pnniRouteAddrEntry 16 }

pnniRouteAddrRowStatus OBJECT-TYPE

SYNTAX RowStatus

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"To create, delete, activate and de-activate a reachable address prefix."

::= { pnniRouteAddrEntry 17 }

-- Table of routes from nodes to reachable transit networks

pnniRouteTnsTable OBJECT-TYPE

SYNTAX SEQUENCE OF PnniRouteTnsEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"A table containing all the attributes necessary to determine what transit networks the PNNI entity believes are reachable and to determine which nodes are advertising this reachability. This table is also used to add static

routes to reachable transit networks. The local node index which received the reachability information, type of network identification, network identification plan, transit network identifier, and an index that distinguishes between multiple listings of connectivity to a given transit network from a given local node are combined to form an instance ID for this object."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.1.3.2"

::= { pnniRoutingGroup 5 }

pnniRouteTnsEntry OBJECT-TYPE

SYNTAX PnniRouteTnsEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"An entry in the table, containing information about a reachable transit network."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.1.3.2"

INDEX { pnniNodeIndex,
pnniRouteTnsType,
pnniRouteTnsPlan,
pnniRouteTnsId,
pnniRouteTnsIndex }

::= { pnniRouteTnsTable 1 }

PnniRouteTnsEntry ::=

SEQUENCE {

pnniRouteTnsType	TnsType,
pnniRouteTnsPlan	TnsPlan,
pnniRouteTnsId	DisplayString,
pnniRouteTnsIndex	Integer32,
pnniRouteTnsIfIndex	InterfaceIndex,
pnniRouteTnsAdvertisingNodeId	PnniNodeId,
pnniRouteTnsAdvertisedPortId	PnniPortId,
pnniRouteTnsRouteType	INTEGER,
pnniRouteTnsProto	INTEGER,
pnniRouteTnsPnniScope	PnniLevel,
pnniRouteTnsVPCapability	TruthValue,
pnniRouteTnsMetricsTag	PnniMetricsTag,
pnniRouteTnsPtseId	Unsigned32,
pnniRouteTnsOriginateAdvertisement	TruthValue,
pnniRouteTnsInfo	OBJECT IDENTIFIER,
pnniRouteTnsOperStatus	INTEGER,
pnniRouteTnsTimeStamp	TimeStamp,
pnniRouteTnsRowStatus	RowStatus

}

pnniRouteTnsType OBJECT-TYPE

SYNTAX TnsType

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"The type of network identification used for this transit network."

::= { pnniRouteTnsEntry 1 }

```

pnniRouteTnsPlan OBJECT-TYPE
    SYNTAX          TnsPlan
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION
        "The network identification plan according to which network
        identification has been assigned."
    ::= { pnniRouteTnsEntry 2 }

pnniRouteTnsId OBJECT-TYPE
    SYNTAX          DisplayString
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION
        "The value of the transit network identifier."
    ::= { pnniRouteTnsEntry 3 }

pnniRouteTnsIndex OBJECT-TYPE
    SYNTAX          Integer32 (1..65535)
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION
        "An index into the set of listings of connectivity to a
        given transit network from a given local node."
    ::= { pnniRouteTnsEntry 4 }

pnniRouteTnsIfIndex OBJECT-TYPE
    SYNTAX          InterfaceIndex
    MAX-ACCESS      read-create
    STATUS          current
    DESCRIPTION
        "The local interface over which the transit network can be
        reached.  The value zero indicates an unknown interface or
        reachability through a remote node.

        This object may only have a non-zero value if the value of
        the corresponding instance of pnniRouteTnsProto is other
        than 'pnni' and the node identified by
        pnniRouteTnsAdvertisingNodeId is instantiated within this
        switching system."
    ::= { pnniRouteTnsEntry 5 }

pnniRouteTnsAdvertisingNodeId OBJECT-TYPE
    SYNTAX          PnniNodeId
    MAX-ACCESS      read-create
    STATUS          current
    DESCRIPTION
        "The node ID of a node advertising reachability to the
        transit network.  If the local node index is zero, then the
        advertising node ID must also be set to zero."
    ::= { pnniRouteTnsEntry 6 }

pnniRouteTnsAdvertisedPortId OBJECT-TYPE
    SYNTAX          PnniPortId
    MAX-ACCESS      read-create
    STATUS          current
    DESCRIPTION

```

```

        "The port identifier used from the advertising node to
        reach the given transit network."
    DEFVAL { 0 }
    ::= { pnniRouteTnsEntry 7 }

pnniRouteTnsRouteType OBJECT-TYPE
    SYNTAX          INTEGER {
                                other(1), -- not specified by this MIB
                                exterior(4)
                            }
    MAX-ACCESS      read-create
    STATUS           current
    DESCRIPTION
        "The type (e.g. exterior or other) of reachability from the
        advertising node to the transit network."
    REFERENCE
        "ATM Forum PNNI 1.1 Section 5.8.1.3"
    DEFVAL { exterior }
    ::= { pnniRouteTnsEntry 8 }

pnniRouteTnsProto OBJECT-TYPE
    SYNTAX          INTEGER {
                                other(1), -- not specified
                                local(2), -- e.g. ilmi
                                mgmt(3), -- configured by management,
                                        -- for example by SNMP or console
                                        -- the following are all dynamic
                                        -- routing protocols
                                pnni(4) -- ATM Forum PNNI
                            }
    MAX-ACCESS      read-only
    STATUS           current
    DESCRIPTION
        "The routing mechanism via which the connectivity from the
        advertising node to the transit network was learned."
    ::= { pnniRouteTnsEntry 9 }

pnniRouteTnsPnniScope OBJECT-TYPE
    SYNTAX          PnniLevel
    MAX-ACCESS      read-create
    STATUS           current
    DESCRIPTION
        "The PNNI scope of advertisement (i.e. level of PNNI
        hierarchy) of the reachability from the advertising node to
        the transit network."
    REFERENCE
        "ATM Forum PNNI 1.1 Section 5.3.6"
    ::= { pnniRouteTnsEntry 10 }

pnniRouteTnsVPCapability OBJECT-TYPE
    SYNTAX          TruthValue
    MAX-ACCESS      read-create
    STATUS           current
    DESCRIPTION
        "Indicates whether VPCs can be established from the
        advertising node to the reachable transit network."

```

REFERENCE

"ATM Forum PNNI 1.1 Section 5.14.9.1 Table 5-34"

::= { pnniRouteTnsEntry 11 }

pnniRouteTnsMetricsTag OBJECT-TYPE

SYNTAX PnniMetricsTag

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The index into the pnniMetricsTable for the traffic parameter values that apply for the connectivity from the advertising node to the transit network. There will be one or more entries in the pnniMetricsTable whose first instance identifier matches the value of this variable.

If there are no parameters associated with this transit network then the distinguished value zero is used."

DEFVAL { 0 }

::= { pnniRouteTnsEntry 12 }

pnniRouteTnsPtseId OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"For reachable transit networks learned via PNNI, this attribute contains the value of the PTSE Identifier for the PTSE being originated by the originating node which contains the information group(s) describing the transit network. For reachable transit networks learned by means other than PNNI, this attribute is set to zero."

REFERENCE

"ATM Forum PNNI 1.1 Section 5.8.2"

::= { pnniRouteTnsEntry 13 }

pnniRouteTnsOriginateAdvertisement OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"Whether or not the transit network specified by this entry is to be advertised by the local node into its PNNI routing domain.

This object may only take on the value 'true' when the value of the corresponding instance of pnniRouteNodeProto is other than 'pnni'."

DEFVAL { true }

::= { pnniRouteTnsEntry 14 }

pnniRouteTnsInfo OBJECT-TYPE

SYNTAX OBJECT IDENTIFIER

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"A reference to MIB definitions specific to the particular routing protocol which is responsible for this transit


```

        network, as determined by the value specified in the
        route's pnniRouteTnsProto value.  If this information is
        not present, its value should be set to the OBJECT
        IDENTIFIER zeroDotZero."
    DEFVAL { zeroDotZero }
    ::= { pnniRouteTnsEntry 15 }

pnniRouteTnsOperStatus OBJECT-TYPE
    SYNTAX          INTEGER {
                        inactive(1),
                        active(2), -- i.e. reachability to this
                                -- transit network exists and is
                                -- not being advertised in PNNI
                        advertised(3)
                    }
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "Indicates whether the reachable transit network is
        operationally valid and whether it is being advertised by
        this node."
    ::= { pnniRouteTnsEntry 16 }

pnniRouteTnsTimeStamp OBJECT-TYPE
    SYNTAX          TimeStamp
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "Indicates how long the connectivity from the advertising
        node to the reachable transit network has been known to the
        local node."
    ::= { pnniRouteTnsEntry 17 }

pnniRouteTnsRowStatus OBJECT-TYPE
    SYNTAX          RowStatus
    MAX-ACCESS      read-create
    STATUS          current
    DESCRIPTION
        "To create, delete, activate and de-activate a reachable
        transit network."
    ::= { pnniRouteTnsEntry 18 }

pnniMibTraps OBJECT IDENTIFIER
    ::= { pnniMIB 3 }

pnniSvccRccTrapsPrfx OBJECT IDENTIFIER
    ::= { pnniMibTraps 1 }

pnniSvccRccTraps OBJECT IDENTIFIER
    ::= { pnniSvccRccTrapsPrfx 0 }

pnniSvccFailureNotif NOTIFICATION-TYPE
    OBJECTS        {
                    pnniSvccRccRemoteNodeId,
                    pnniSvccRccLastRelCause,
                    pnniSvccRccLastRelDiagnostic
                }

```

```

    }
STATUS      current
DESCRIPTION
    "A pnniSvccFailureNotif notification is sent when the value of
    pnniSvccRccFailureCount reaches pnniNodeSvccFailuresThreshold.
    If the value of pnniNodeSvccFailuresThreshold is zero, then
    the notification is sent when the pnniSvccRccFailureCount
    reaches the value one."
 ::= { pnniSvccRccTraps 1 }

pnniSvccRccTestNotif NOTIFICATION-TYPE
OBJECTS      {
    pnniSvccRccTestLastResult,
    pnniSvccRccRemoteNodeId,
    pnniSvccRccRemoteAtmAddress
}
STATUS      current
DESCRIPTION
    "A pnniSvccRccTestNotif notification is sent when the state of
    the SVCC-based RCC diagnostic test changes from 'success' or
    'noresult' to 'failure' or from 'failure' to 'success'."
 ::= { pnniSvccRccTraps 2 }

pnniSvccRccRemovalNotif NOTIFICATION-TYPE
OBJECTS      {
    pnniSvccRccRemoteNodeId
}
STATUS      current
DESCRIPTION
    "This notification is sent when a pnniSvccRccEntry is deleted
    due to loss of the neighbor relationship. The value of the
    pnniSvccRccRemoteNodeId sent in the trap is the value that
    was known before the entry was removed."
 ::= { pnniSvccRccTraps 3 }

-- conformance information

pnniMIBConformance
OBJECT IDENTIFIER ::= { pnniMIB 2 }
pnniMIBCompliances
OBJECT IDENTIFIER ::= { pnniMIBConformance 1 }
pnniMIBGroups
OBJECT IDENTIFIER ::= { pnniMIBConformance 2 }

-- compliance statements

pnniMIBCompliance MODULE-COMPLIANCE
STATUS      current
DESCRIPTION
    "The compliance statement for entities which implement
    the PNNI MIB.

    Groups of PNNI objects required for management of a minimum
    function node are identified by the suffix MinGroup."

```

Groups of PNNI objects required for management of a border node are identified by the suffix BorderGroup.

Groups of PNNI objects required for management of a PGL/LGN capable node are identified by the suffix LgnGroup.

Groups of optional PNNI objects are identified by the suffix OptionalGroup."

```
MODULE -- this module
  MANDATORY-GROUPS { pnniGeneralMinGroup,
                    pnniNodeMinGroup,
                    pnniNodePglMinGroup,
                    pnniNodeTimerMinGroup,
                    pnniScopeMinGroup,
                    pnniIfMinGroup,
                    pnniLinkMinGroup,
                    pnniNbrPeerMinGroup,
                    pnniNbrPeerPortMinGroup }

OBJECT pnniNodeId
MIN-ACCESS read-only
DESCRIPTION
  "Support for manual configuration of node IDs is optional."

OBJECT pnniNodeLowest
MIN-ACCESS read-only
DESCRIPTION
  "Only switching systems that are PGL/LGN capable are allowed
  to provide write/create access to the pnniNodeLowest
  object."

OBJECT pnniNodeRestrictedTransit
MIN-ACCESS read-only
DESCRIPTION
  "Support for the restricted transit capability is optional."

OBJECT pnniNodeComplexRep
MIN-ACCESS read-only
DESCRIPTION
  "The ability to generate the complex node representation is
  only required for PGL/LGN capable switching systems, and is
  otherwise optional."

OBJECT pnniNodeRowStatus
SYNTAX INTEGER { active(1) }
MIN-ACCESS read-only
DESCRIPTION
  "The ability to create more than one node in a switching
  system is optional."

OBJECT pnniNodePglLeadershipPriority
MIN-ACCESS read-only
DESCRIPTION
  "Only switching systems that are PGL/LGN capable are allowed
  to provide write/create access to the
  pnniNodePglLeadershipPriority object."

OBJECT pnniIfNodeIndex
```

```

MIN-ACCESS read-only
DESCRIPTION
    "Write access to the pnniIfNodeIndex object is optional. It
    only applies when there can be multiple lowest-level nodes
    in the switching system."

OBJECT pnniIfVPCapability
MIN-ACCESS read-only
DESCRIPTION
    "The ability to support switched virtual paths is optional."

 ::= { pnniMIBCompliances 1 }

-- units of conformance

pnniGeneralMinGroup OBJECT-GROUP
OBJECTS {
    pnniHighestVersion,
    pnniLowestVersion,
    pnniDtlCountOriginator,
    pnniCrankbackCountOriginator,
    pnniAltRouteCountOriginator,
    pnniRouteFailCountOriginator,
    pnniRouteFailUnreachableOriginator
}
STATUS current
DESCRIPTION
    "A collection of general PNNI objects required for
    management of a minimum function switching system."
 ::= { pnniMIBGroups 1 }

pnniGeneralBorderGroup OBJECT-GROUP
OBJECTS {
    pnniDtlCountBorder,
    pnniCrankbackCountBorder,
    pnniAltRouteCountBorder,
    pnniRouteFailCountBorder,
    pnniRouteFailUnreachableBorder
}
STATUS current
DESCRIPTION
    "A collection of general PNNI objects required for
    management of a border node."
 ::= { pnniMIBGroups 2 }

pnniNodeMinGroup OBJECT-GROUP
OBJECTS {
    pnniNodeLevel,
    pnniNodeId,
    pnniNodeLowest,
    pnniNodeAdminStatus,
    pnniNodeOperStatus,
    pnniNodeDomainName,
    pnniNodeAtmAddress,
    pnniNodePeerGroupId,
    pnniNodeRestrictedTransit,
    pnniNodeComplexRep,

```

```

        pnniNodeRestrictedBranching,
        pnniNodeDatabaseOverload,
        pnniNodePtses,
        pnniNodeRowStatus
    }
STATUS current
DESCRIPTION
    "A collection of per node PNNI objects required for
    management of a minimum function switching system."
 ::= { pnniMIBGroups 3 }

pnniNodePglMinGroup OBJECT-GROUP
OBJECTS {
    pnniNodePglLeadershipPriority,
    pnniNodePglInitTime,
    pnniNodePglReelectTime ,
    pnniNodePglState,
    pnniNodePreferredPgl,
    pnniNodePeerGroupLeader,
    pnniNodePglTimeStamp,
    pnniNodeActiveParentNodeId
}
STATUS current
DESCRIPTION
    "A collection of per node PGL election related PNNI objects
    required for management of a minimum function switching
    system."
 ::= { pnniMIBGroups 4 }

pnniNodePglLgnGroup OBJECT-GROUP
OBJECTS {
    pnniNodeCfgParentNodeIndex,
    pnniNodePglOverrideDelay
}
STATUS current
DESCRIPTION
    "A collection of per node PGL election related PNNI objects
    required for management of a PGL/LGN capable switching
    system."
 ::= { pnniMIBGroups 5 }

pnniNodeTimerMinGroup OBJECT-GROUP
OBJECTS {
    pnniNodePtseHolddown,
    pnniNodeHelloHolddown,
    pnniNodeHelloInterval,
    pnniNodeHelloInactivityFactor,
    pnniNodePtseRefreshInterval,
    pnniNodePtseLifetimeFactor,
    pnniNodeRxmtInterval,
    pnniNodePeerDelayedAckInterval,
    pnniNodeAvcrPm,
    pnniNodeAvcrMt,
    pnniNodeCdvPm,
    pnniNodeCtdPm
}
STATUS current

```

DESCRIPTION

"A collection of per node PNNI objects required for management of timers and significant change thresholds in a minimum function switching system."

::= { pnniMIBGroups 6 }

pnniNodeTimerLgnGroup OBJECT-GROUP

OBJECTS {
 pnniNodeHlinkInact
}

STATUS current

DESCRIPTION

"A collection of per node PNNI objects required for management of timers in a PGL/LGN capable switching system."

::= { pnniMIBGroups 7 }

pnniNodeSvccLgnGroup OBJECT-GROUP

OBJECTS {
 pnniNodeSvccInitTime,
 pnniNodeSvccRetryTime,
 pnniNodeSvccCallingIntegrityTime,
 pnniNodeSvccCalledIntegrityTime,
 pnniNodeSvccTrafficDescriptorIndex
}

STATUS current

DESCRIPTION

"A collection of per node SVCC-based RCC related PNNI objects required for management of a PGL/LGN capable switching system."

::= { pnniMIBGroups 8 }

pnniScopeMinGroup OBJECT-GROUP

OBJECTS {
 pnniScopeLocalNetwork,
 pnniScopeLocalNetworkPlusOne,
 pnniScopeLocalNetworkPlusTwo,
 pnniScopeSiteMinusOne,
 pnniScopeIntraSite,
 pnniScopeSitePlusOne,
 pnniScopeOrganizationMinusOne,
 pnniScopeIntraOrganization,
 pnniScopeOrganizationPlusOne,
 pnniScopeCommunityMinusOne,
 pnniScopeIntraCommunity,
 pnniScopeCommunityPlusOne,
 pnniScopeRegional,
 pnniScopeInterRegional,
 pnniScopeGlobal
}

STATUS current

DESCRIPTION

"A collection of per node scope mapping related PNNI objects required for management of a minimum function switching system."

::= { pnniMIBGroups 9 }

```

pnniSummaryLgnGroup OBJECT-GROUP
    OBJECTS {
        pnniSummaryType,
        pnniSummarySuppress,
        pnniSummaryState,
        pnniSummaryRowStatus
    }
    STATUS deprecated
    DESCRIPTION
        "A collection of PNNI objects required for controlling
        address summarization."
    ::= { pnniMIBGroups 10 }

pnniSummaryAddressLgnGroup OBJECT-GROUP
    OBJECTS {
        pnniSummaryAddressSuppress,
        pnniSummaryAddressState,
        pnniSummaryAddressRowStatus
    }
    STATUS current
    DESCRIPTION
        "A collection of PNNI objects required for controlling address
        summarization."
    ::= { pnniMIBGroups 31 }

pnniIfMinGroup OBJECT-GROUP
    OBJECTS {
        pnniIfNodeIndex,
        pnniIfPortId,
        pnniIfVPCapability,
        pnniIfAdmWeightCbr,
        pnniIfAdmWeightRtVbr,
        pnniIfAdmWeightNrtVbr,
        pnniIfAdmWeightAbr,
        pnniIfAdmWeightUbr,
        pnniIfRccServiceCategory,
        pnniIfRccTrafficDescrIndex
    }
    STATUS current
    DESCRIPTION
        "A collection of per interface PNNI objects required for
        management of a minimum function switching system."
    ::= { pnniMIBGroups 11 }

pnniIfBorderGroup OBJECT-GROUP
    OBJECTS {
        pnniIfAggrToken
    }
    STATUS current
    DESCRIPTION
        "A collection of per interface PNNI objects required for
        management of a border node."
    ::= { pnniMIBGroups 12 }

pnniLinkMinGroup OBJECT-GROUP
    OBJECTS {

```

```

        pnniLinkType,
        pnniLinkVersion,
        pnniLinkHelloState,
        pnniLinkRemoteNodeId,
        pnniLinkRemotePortId,
        pnniLinkIfIndex,
        pnniLinkRcvHellos,
        pnniLinkXmtHellos
    }
STATUS current
DESCRIPTION
    "A collection of per link PNNI objects required for
    management of a minimum function switching system."
 ::= { pnniMIBGroups 13 }

pnniLinkBorderOrLgnGroup OBJECT-GROUP
OBJECTS {
    pnniLinkDerivedAggrToken,
    pnniLinkUpnodeId,
    pnniLinkUpnodeAtmAddress,
    pnniLinkCommonPeerGroupId
}
STATUS current
DESCRIPTION
    "A collection of per link PNNI objects required for
    management of a border node or a PGL/LGN capable switching
    system."
 ::= { pnniMIBGroups 14 }

pnniLinkLgnGroup OBJECT-GROUP
OBJECTS {
    pnniLinkSvccRccIndex
}
STATUS current
DESCRIPTION
    "A collection of per link PNNI objects required for
    management of a PGL/LGN capable switching system."
 ::= { pnniMIBGroups 15 }

pnniNbrPeerMinGroup OBJECT-GROUP
OBJECTS {
    pnniNbrPeerState,
    pnniNbrPeerPortCount,
    pnniNbrPeerRcvDbSums,
    pnniNbrPeerXmtDbSums,
    pnniNbrPeerRcvPtsp,
    pnniNbrPeerXmtPtsp,
    pnniNbrPeerRcvPtseReqs,
    pnniNbrPeerXmtPtseReqs,
    pnniNbrPeerRcvPtseAcks,
    pnniNbrPeerXmtPtseAcks
}
STATUS current
DESCRIPTION
    "A collection of per neighboring peer PNNI objects required
    for management of a minimum function switching system."
 ::= { pnniMIBGroups 16 }

```



```
pnniNbrPeerLgnGroup OBJECT-GROUP
  OBJECTS {
    pnniNbrPeerSvccRccIndex
  }
  STATUS current
  DESCRIPTION
    "A collection of per neighboring peer PNNI objects required
    for management of a PGL/LGN capable switching system."
  ::= { pnniMIBGroups 17 }
```

```
pnniNbrPeerPortMinGroup OBJECT-GROUP
  OBJECTS {
    pnniNbrPeerPortFloodStatus
  }
  STATUS current
  DESCRIPTION
    "A collection of per port to neighboring peer PNNI objects
    required for management of a minimum function switching
    system."
  ::= { pnniMIBGroups 18 }
```

```
pnniSvccRccLgnGroup OBJECT-GROUP
  OBJECTS {
    pnniSvccRccVersion,
    pnniSvccRccHelloState,
    pnniSvccRccRemoteNodeId ,
    pnniSvccRccRemoteAtmAddress,
    pnniSvccRccRcvHellos,
    pnniSvccRccXmtHellos,
    pnniSvccRccIfIndex,
    pnniSvccRccVpi,
    pnniSvccRccVci
  }
  STATUS current
  DESCRIPTION
    "A collection of per SVCC-based RCC PNNI objects required
    for management of a PGL/LGN capable switching system."
  ::= { pnniMIBGroups 19 }
```

```
pnniPtseOptionalGroup OBJECT-GROUP
  OBJECTS {
    pnniPtseType,
    pnniPtseSequenceNum,
    pnniPtseChecksum,
    pnniPtseLifeTime,
    pnniPtseInfo
  }
  STATUS current
  DESCRIPTION
    "A collection of optional per PTSE PNNI objects."
  ::= { pnniMIBGroups 20 }
```

```
pnniMapOptionalGroup OBJECT-GROUP
  OBJECTS {
    pnniMapType,
```

```

        pnniMapPeerGroupId,
        pnniMapAggrToken,
        pnniMapRemoteNodeId,
        pnniMapRemotePortId,
        pnniMapVPCapability,
        pnniMapPtseId,
        pnniMapMetricsTag
    }
STATUS current
DESCRIPTION
    "A collection of optional PNNI objects used to create a map
    of nodes and links in the PNNI routing domain."
 ::= { pnniMIBGroups 21 }

pnniMapNodeOptionalGroup OBJECT-GROUP
OBJECTS {
    pnniMapNodePeerGroupId,
    pnniMapNodeAtmAddress,
    pnniMapNodeRestrictedTransit,
    pnniMapNodeComplexRep,
    pnniMapNodeRestrictedBranching,
    pnniMapNodeDatabaseOverload,
    pnniMapNodeIAmLeader,
    pnniMapNodeLeadershipPriority,
    pnniMapNodePreferredPgl,
    pnniMapNodeParentNodeId,
    pnniMapNodeParentAtmAddress,
    pnniMapNodeParentPeerGroupId,
    pnniMapNodeParentPglNodeId
}
STATUS current
DESCRIPTION
    "A collection of optional PNNI objects used to create a map
    of nodes in the PNNI routing domain."
 ::= { pnniMIBGroups 22 }

pnniMapAddrOptionalGroup OBJECT-GROUP
OBJECTS {
    pnniMapAddrAddress,
    pnniMapAddrPrefixLength
}
STATUS current
DESCRIPTION
    "A collection of optional PNNI objects used to create a map
    of reachable addresses in the PNNI routing domain."
 ::= { pnniMIBGroups 23 }

pnniMapTnsOptionalGroup OBJECT-GROUP
OBJECTS {
    pnniMapTnsId
}
STATUS current
DESCRIPTION
    "A collection of optional PNNI objects used to create a map
    of reachable transit networks in the PNNI routing domain."
 ::= { pnniMIBGroups 24 }

```

```
pnniMetricsOptionalGroup OBJECT-GROUP
  OBJECTS {
    pnniMetricsClasses,
    pnniMetricsGcacClp,
    pnniMetricsAdminWeight,
    pnniMetrics1,
    pnniMetrics2,
    pnniMetrics3,
    pnniMetrics4,
    pnniMetrics5,
    pnniMetrics6,
    pnniMetrics7,
    pnniMetrics8,
    pnniMetricsRowStatus
  }
  STATUS current
  DESCRIPTION
    "A collection of optional PNNI objects used to manage
    metrics and attributes associated with PNNI entities."
  ::= { pnniMIBGroups 25 }
```

```
pnniRouteGeneralOptionalGroup OBJECT-GROUP
  OBJECTS {
    pnniRouteNodeNumber,
    pnniRouteAddrNumber
  }
  STATUS current
  DESCRIPTION
    "A collection of optional PNNI objects."
  ::= { pnniMIBGroups 26 }
```

```
pnniRouteNodeOptionalGroup OBJECT-GROUP
  OBJECTS {
    pnniRouteNodeDestPortId,
    pnniRouteNodeProto,
    pnniRouteNodeTimeStamp,
    pnniRouteNodeInfo,
    pnniRouteNodeGcacClp,
    pnniRouteNodeFwdMetricAW,
    pnniRouteNodeFwdMetric1,
    pnniRouteNodeFwdMetric2,
    pnniRouteNodeFwdMetric3,
    pnniRouteNodeFwdMetric4,
    pnniRouteNodeFwdMetric5,
    pnniRouteNodeFwdMetric6,
    pnniRouteNodeFwdMetric7,
    pnniRouteNodeFwdMetric8,
    pnniRouteNodeBwdMetricAW,
    pnniRouteNodeBwdMetric1,
    pnniRouteNodeBwdMetric2,
    pnniRouteNodeBwdMetric3,
    pnniRouteNodeBwdMetric4,
    pnniRouteNodeBwdMetric5,
    pnniRouteNodeBwdMetric6,
    pnniRouteNodeBwdMetric7,
    pnniRouteNodeBwdMetric8,
    pnniRouteNodeVPCapability,
```

```

        pnniRouteNodeStatus
    }
STATUS current
DESCRIPTION
    "A collection of optional PNNI objects used to manage
    precalculated routes to nodes in the PNNI routing domain."
 ::= { pnniMIBGroups 27 }

pnniDTLOptionalGroup OBJECT-GROUP
OBJECTS {
    pnniDTLNodeId,
    pnniDTLPortId,
    pnniDTLLinkType,
    pnniDTLStatus
}
STATUS current
DESCRIPTION
    "A collection of optional PNNI objects used to manage
    precalculated routes to nodes in the PNNI routing domain."
 ::= { pnniMIBGroups 28 }

pnniRouteAddrOptionalGroup OBJECT-GROUP
OBJECTS {
    pnniRouteAddrIfIndex,
    pnniRouteAddrAdvertisingNodeId,
    pnniRouteAddrAdvertisedPortId,
    pnniRouteAddrType,
    pnniRouteAddrProto,
    pnniRouteAddrPnniScope,
    pnniRouteAddrVPCapability,
    pnniRouteAddrMetricsTag,
    pnniRouteAddrPtseId,
    pnniRouteAddrOriginateAdvertisement,
    pnniRouteAddrInfo,
    pnniRouteAddrOperStatus,
    pnniRouteAddrTimeStamp,
    pnniRouteAddrRowStatus
}
STATUS current
DESCRIPTION
    "A collection of optional PNNI objects used to manage routes
    to reachable addresses in the PNNI routing domain."
 ::= { pnniMIBGroups 29 }

pnniRouteTnsOptionalGroup OBJECT-GROUP
OBJECTS {
    pnniRouteTnsIfIndex,
    pnniRouteTnsAdvertisingNodeId,
    pnniRouteTnsAdvertisedPortId,
    pnniRouteTnsRouteType,
    pnniRouteTnsProto,
    pnniRouteTnsPnniScope,
    pnniRouteTnsVPCapability,
    pnniRouteTnsMetricsTag,
    pnniRouteTnsPtseId,
    pnniRouteTnsOriginateAdvertisement,
    pnniRouteTnsInfo,

```

```

        pnniRouteTnsOperStatus,
        pnniRouteTnsTimeStamp,
        pnniRouteTnsRowStatus
    }
STATUS current
DESCRIPTION
    "A collection of optional PNNI objects used to manage routes
    to reachable transit networks in the PNNI routing domain."
 ::= { pnniMIBGroups 30 }

pnniNodeGssOptionalGroup OBJECT-GROUP
OBJECTS {
    pnniNodeCoBiTransportSupported,
    pnniNodeClBiTransportSupported
}
STATUS current
DESCRIPTION
    "A collection of optional per-node PNNI objects used for
    management of generic support for supplementary services."
 ::= { pnniMIBGroups 32 }

pnniUbrWithMdcrcOptionalGroup OBJECT-GROUP
OBJECTS {
    pnniNodeBeCRT,
    pnniNodeGenerateUbrAvCR,
    pnniNodeGenerateBeCR,
    pnniNodeBeCRTuningFactor,
    pnniMetricsAvcrIndicatorForUbr,
    pnniMetrics9
}
STATUS current
DESCRIPTION
    "A collection of optional PNNI objects used for
    management of the UBR with MDCR capability."
 ::= { pnniMIBGroups 33 }

pnniGfrOptionalGroup OBJECT-GROUP
OBJECTS {
    pnniIfAdmWeightGfr,
    pnniMetricsGfrCapability,
    pnniMetrics10,
    pnniRouteNodeGfrCapability,
    pnniNodeAccBctPm}
STATUS current
DESCRIPTION
    "A collection of optional PNNI objects used for the management
    of the GFR ATM Service Category."
 ::= { pnniMIBGroups 34 }

pnniVersionOneDotOneOptionalGroup OBJECT-GROUP
OBJECTS {
    pnniNodeEmbedAddrAESAPrefixAdvType,
    pnniNodeMinTimeToFlush,
    pnniNodeMaxTimeToFlush
}
STATUS current
DESCRIPTION

```

```

        "A collection of optional PNNI objects used for the
        management of new and revised capabilities in PNNI
        version 1.1."
 ::= { pnniMIBGroups 35 }

pnniNodeTimeOptionalGroup OBJECT-GROUP
OBJECTS {
    pnniNodeStartTimeStamp,
    pnniNbrPeerSyncInitTimeStamp,
    pnniNbrPeerSyncDoneTimeStamp
}
STATUS current
DESCRIPTION
    "A collection of optional PNNI Node time related
    objects."
 ::= { pnniMIBGroups 36 }

pnniResyncOptionalGroup OBJECT-GROUP
OBJECTS {
    pnniNodeResyncEnabled,
    pnniNodeMaxResyncRetries,
    pnniNodeResyncInactInterval,
    pnniNodeResyncRetryInterval,
    pnniNodeNmaxresync,
    pnniNbrPeerLclResyncCongStatus,
    pnniNbrPeerAggResyncCongStatus,
    pnniNbrPeerResyncRetryCount,
    pnniNbrPeerTriggerResync
}
STATUS current
DESCRIPTION
    "A collection of optional PNNI objects used for the
    management of database resynchronization."
 ::= { pnniMIBGroups 37 }

pnniGraceRestartOptionalGroup OBJECT-GROUP
OBJECTS {
    pnniNodeRestartAdminStatus,
    pnniNodeRestartOperStatus,
    pnniNodeGracefulRestartInterval,
    pnniNodeDatabaseBackupInterval,
    pnniNodeStressInactFacRestart,
    pnniNodeRestartInitTimeStamp,
    pnniNodeRestartDoneTimeStamp,
    pnniNodeLastBackupTimeStamp
}
STATUS current
DESCRIPTION
    "A collection of optional PNNI objects used for the
    management of graceful restart."
 ::= { pnniMIBGroups 38 }

pnniNodeSvccLgnOptionalGroup OBJECT-GROUP
OBJECTS {
    pnniNodeSvccFailuresTrapEnable,
    pnniNodeSvccFailuresThreshold,
    pnniNodeSvccRemovalTrapEnable
}

```

```

    }
    STATUS current
    DESCRIPTION
        "A collection of optional per node SVCC-based RCC related
        PNNI objects used for management of a PGL/LGN capable
        switching system."
    ::= { pnniMIBGroups 39 }

pnniSvccRccLgnOptionalGroup OBJECT-GROUP
    OBJECTS {
        pnniSvccRccLastRelCause,
        pnniSvccRccLastRelDiagnostic,
        pnniSvccRccFailureCount,
        pnniSvccRccLastConnectTime
    }
    STATUS current
    DESCRIPTION
        "A collection of optional per SVCC-based RCC PNNI objects
        required for management of a PGL/LGN capable switching
        system."
    ::= { pnniMIBGroups 40 }

pnniNodeSvccTestOptionalGroup OBJECT-GROUP
    OBJECTS {
        pnniNodeSvccTestIntervalEnable,
        pnniNodeSvccTestInterval,
        pnniNodeSvccTestAtmAddress,
        pnniNodeSvccTestTrapEnable
    }
    STATUS current
    DESCRIPTION
        "A collection of optional per node PNNI objects used for the
        management of SVCC-based RCC diagnostic tests and
        related traps."
    ::= { pnniMIBGroups 41 }

pnniSvccRccTestOptionalGroup OBJECT-GROUP
    OBJECTS {
        pnniSvccRccTestLastTime,
        pnniSvccRccTestLastResult,
        pnniSvccRccTestFailureCount,
        pnniSvccRccTestLastRelCause,
        pnniSvccRccTestLastRelDiag,
        pnniSvccRccTestTriggerTest
    }
    STATUS current
    DESCRIPTION
        "A collection of optional per SVCC-based RCC PNNI objects
        required for management of SVCC-based RCC diagnostic tests."
    ::= { pnniMIBGroups 42 }

```

END