

SNA APPN Node MIB

Status of this Memo

This memo provides information for the Internet community. This memo does not specify an Internet standard of any kind. Distribution of this memo is unlimited.

Abstract

This RFC describes IBM's SNMP support for SNA Advanced Peer-to-Peer Networking (APPN) nodes.

Table of Contents

1.0	Introduction	2
2.0	Definitions	3
2.1	APPN Node Group	3
2.1.1	APPN Node General Information	4
2.1.2	APPN Network Node Information	6
2.1.3	APPN End Node Information	8
2.1.4	APPN Port Information	10
2.1.4.1	General Port Information	10
2.1.4.2	TCP/IP Port Information	14
2.1.4.3	Data Link Switch Port Information	15
2.1.4.4	Token Ring Port Information	16
2.1.4.5	Port DLC Trace Information	17
2.1.5	APPN Link Station Information	23
2.1.5.1	General Link Station Information	23
2.1.5.2	TCP/IP Link Station Information	35
2.1.5.3	Data Link Switch Link Station Information	37
2.1.5.4	Token Ring Link Station Information	39
2.1.5.5	Link Station Status Information	41
2.1.6	SNMP Performance Information for APPN Subagent	46
2.1.7	Performance Information for APPN Node	49
2.1.8	XID Statistics	50
2.2	APPN Topology Group	51
2.2.1	Topology Performance Information	52
2.2.1.1	Topology Route Information	58
2.2.2	Adjacent Node Table	60
2.2.3	Network Node Topology	62
2.2.3.1	NN Topology Table (Indexed by Node Name)	62

2.2.3.2	NN TG Table (Indexed by Node Names and TG Number)	66
2.2.3.3	NN Topology Table (Indexed by FRSN and Node Name)	73
2.2.3.4	NN TG Table (Indexed by FRSN, Node Names, and TG Number)	77
2.3	APPN Node Local Topology Group	83
2.3.1	Local Topology This Node	84
2.3.1.1	Local General Information	84
2.3.1.2	Local NN Specific Information	85
2.3.1.3	Local TG Information	87
2.3.2	Client End Nodes Topology Known to Serving NN	93
2.3.2.1	Client End Nodes Information	93
2.3.2.2	Client End Nodes TG Information (Tail Vectors)	94
2.4	APPN Directory Group	99
2.4.1	Directory Performance Information	99
2.4.2	Directory Cache Table	102
2.5	APPN Class Of Service Group	105
2.5.1	COS Mode Table	108
2.5.2	COS Name Table	109
2.5.3	COS Node Row Table	110
2.5.4	COS TG Row Table	113
3.0	Acknowledgements	119
4.0	Security Considerations	119
5.0	Authors' Addresses	120

1.0 Introduction

This module contains managed objects which describe the following:

- o The APPN node (either an APPN network node or an APPN end node)
- o The connections of the node to other SNA nodes
- o The APPN network topology (as reflected in the network topology database that is replicated in each APPN network node).

This module does not describe the SNA logical units (LUs) served by the APPN node nor does it describe the sessions between LUs. Managed objects for that information are under development.

2.0 Definitions

```

IBM-6611-APPN-MIB DEFINITIONS          ::= BEGIN

IMPORTS

    enterprises, Counter, IPAddress,
    Gauge, TimeTicks
        FROM RFC1155-SMI

    DisplayString
        FROM RFC1213-MIB

OBJECT-TYPE
    FROM RFC-1212;

-- *****
ibm                OBJECT IDENTIFIER ::= { enterprises 2 }
ibmProd            OBJECT IDENTIFIER ::= { ibm 6 }
ibm6611            OBJECT IDENTIFIER ::= { ibmProd 2 }
ibmappn            OBJECT IDENTIFIER ::= { ibm6611 13 }

-- ***** The APPN Node Group *****

ibmappnNode        OBJECT IDENTIFIER ::= { ibmappn 1 }
ibmappnGeneralInfoAndCaps OBJECT IDENTIFIER ::= { ibmappnNode 1 }
ibmappnNnUniqueInfoAndCaps OBJECT IDENTIFIER ::= { ibmappnNode 2 }
ibmappnEnUniqueCaps OBJECT IDENTIFIER ::= { ibmappnNode 3 }
ibmappnPortInformation OBJECT IDENTIFIER ::= { ibmappnNode 4 }
ibmappnLinkStationInformation OBJECT IDENTIFIER ::= { ibmappnNode 5 }
ibmappnSnmpInformation OBJECT IDENTIFIER ::= { ibmappnNode 6 }
ibmappnMemoryUse   OBJECT IDENTIFIER ::= { ibmappnNode 7 }
ibmappnXidInformation OBJECT IDENTIFIER ::= { ibmappnNode 8 }

-- This group provides global information about the
-- APPN node, which is either a network node or an end node.

-- The first section applies to all APPN nodes.
-- The second section applies only to network nodes.
-- The third section applies only to end nodes.
-- The fourth section applies to Port information.
-- The fifth section applies to SNA link station Information.
-- The sixth section applies to SNMP traffic for this APPN sub-agent
-- The seventh section applies to APPN memory usage.
-- The eighth section applies to XID activities.

```

-- APPN General Information
-- This section applies to both network and end nodes.

```
ibmappnNodeCpName    OBJECT-TYPE
    SYNTAX DisplayString (SIZE (3..17))
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Administratively-assigned network name
         for this node in the format NETID.CPNAME."

 ::= { ibmappnGeneralInfoAndCaps 1 }

ibmappnNodeNetid     OBJECT-TYPE
    SYNTAX DisplayString (SIZE (1..8))
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Administratively-assigned APPN network identification,
         which can be from one to eight characters.
         This ID is used with the control point name
         to create a fully-qualified control point name."

 ::= { ibmappnGeneralInfoAndCaps 2 }

ibmappnNodeBlockNum  OBJECT-TYPE
    SYNTAX DisplayString (SIZE (3))
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "The block number is the first three digits of the node_id.
         These 3 hexadecimal digits identify the product and are not
         configurable."

 ::= { ibmappnGeneralInfoAndCaps 3 }

ibmappnNodeIdNum     OBJECT-TYPE
    SYNTAX DisplayString (SIZE (5))
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "The ID number is the last 5 digits of the node_id.
         These 5 hexadecimal digits are administratively defined and
         combined with the 3 digit block number form the node_id.
         This node_id is used to identify the local node and is
         include in APPN alerts as well as being included in XIDs.
         A unique value is required for connections to SNA
```

sub-area."

::= { ibmappnGeneralInfoAndCaps 4 }

ibmappnNodeType OBJECT-TYPE

SYNTAX INTEGER {
networkNode(1),
endNode(2),
len(4)
}

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Type of APPN node, either network, len, or end node."

::= { ibmappnGeneralInfoAndCaps 5 }

ibmappnNodeUpTime OBJECT-TYPE

SYNTAX TimeTicks

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Time (in hundredths of a second) since this APPN node was initialized."

::= { ibmappnGeneralInfoAndCaps 6 }

ibmappnNodeNegotLs OBJECT-TYPE

SYNTAX INTEGER {yes(1), no(2)}

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Indicates whether this node supports negotiable link stations."

::= { ibmappnGeneralInfoAndCaps 7 }

ibmappnNodeSegReasm OBJECT-TYPE

SYNTAX INTEGER {yes(1), no(2)}

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Indicates whether this node supports segment reassembly. This is only supported when segment generation is also supported."

::= { ibmappnGeneralInfoAndCaps 8 }

```

ibmappnNodeBindReasm OBJECT-TYPE
    SYNTAX INTEGER {yes(1), no(2)}
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Indicates whether this node supports Bind segment
        reassembly. This will only be supported when Bind
        segment generation is also supported."

 ::= { ibmappnGeneralInfoAndCaps 9 }

ibmappnNodeParallelTg OBJECT-TYPE
    SYNTAX INTEGER {yes(1), no(2)}
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Indicates whether this node supports parallel TGs."

 ::= { ibmappnGeneralInfoAndCaps 10 }

ibmappnNodeService OBJECT-TYPE
    SYNTAX INTEGER {yes(1), no(2)}
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Indicates whether this node allows call-in from nodes not
        defined locally."

 ::= { ibmappnGeneralInfoAndCaps 11 }

ibmappnNodeAdaptiveBindPacing OBJECT-TYPE
    SYNTAX INTEGER {yes(1), no(2)}
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Indicates whether this node supports adaptive bind pacing."

 ::= { ibmappnGeneralInfoAndCaps 12 }

-- *****
-- APPN Network Node Information
-- This section provides global information about the
-- APPN network node.

ibmappnNodeNnRcvRegChar OBJECT-TYPE
    SYNTAX INTEGER {yes(1), no(2)}

```

```

ACCESS read-only
STATUS mandatory
DESCRIPTION
    "Indicates whether this node supports receiving registered
    characteristics."

```

```
 ::= { ibmappnNnUniqueInfoAndCaps 1 }
```

```

ibmappnNodeNnGateway    OBJECT-TYPE
SYNTAX INTEGER {yes(1), no(2)}
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "Indicates whether this is a gateway node."

```

```
 ::= { ibmappnNnUniqueInfoAndCaps 2 }
```

```

ibmappnNodeNnCentralDirectory OBJECT-TYPE
SYNTAX INTEGER {yes(1), no(2)}
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "Indicates whether this node supports central directory
    cache."

```

```
 ::= { ibmappnNnUniqueInfoAndCaps 3 }
```

```

ibmappnNodeNnTreeCache OBJECT-TYPE
SYNTAX INTEGER {yes(1), no(2)}
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "Indicates whether this node supports route tree cache."

```

```
 ::= { ibmappnNnUniqueInfoAndCaps 4 }
```

```

ibmappnNodeNnTreeUpdate OBJECT-TYPE
SYNTAX INTEGER {yes(1), no(2)}
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "Indicates whether this node supports
    incremental_tree_update, which is only
    supported when tree caching is supported."

```

```
 ::= { ibmappnNnUniqueInfoAndCaps 5 }
```

```

ibmappnNodeNnRouteAddResist    OBJECT-TYPE

```

```

SYNTAX INTEGER
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "Route addition resistance is a value that
    indicates the relative desirability
    of using this node for intermediate session traffic.
    The value, which can be any integer 0-255,
    is used in route computation.  The lower the value,
    the more desirable the node is for intermediate routing."

 ::= { ibmappnNnUniqueInfoAndCaps 6 }

```

```

ibmappnNodeNnIsr      OBJECT-TYPE
    SYNTAX INTEGER {yes(1), no(2)}
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Indicates whether the node supports intermediate
        session routing."

 ::= { ibmappnNnUniqueInfoAndCaps 7 }

```

```

ibmappnNodeNnFrsn      OBJECT-TYPE
    SYNTAX INTEGER (0..65535)
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Flow reduction sequence numbers (FRSNs) are associated
        with Topology Database Updates (TDUs) and are unique
        only within each APPN network node.  A TDU can be
        associated with multiple APPN resources.  This object
        is the last FRSN sent in a topology update to
        adjacent network nodes."

 ::= { ibmappnNnUniqueInfoAndCaps 8 }

```

```

-- *****
-- APPN End Node Information

```

```

ibmappnNodeEnSegGen    OBJECT-TYPE
    SYNTAX INTEGER {yes(1), no(2)}
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Indicates whether this end node supports segment generation."

```



```
::= { ibmappnEnUniqueCaps 1 }
```

```
ibmappnNodeEnModeCosMap OBJECT-TYPE
    SYNTAX INTEGER {yes(1), no(2)}
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Indicates whether this end node supports
        mode name to COS name mapping."
```

```
::= { ibmappnEnUniqueCaps 2 }
```

```
ibmappnNodeEnLocateCdinit OBJECT-TYPE
    SYNTAX INTEGER {yes(1), no(2)}
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Indicates whether this end node supports Locate Cdinit."
```

```
::= { ibmappnEnUniqueCaps 3 }
```

```
ibmappnNodeEnSendRegNames OBJECT-TYPE
    SYNTAX INTEGER {yes(1), no(2)}
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Indicates whether the node will register its LUs with the
        adjacent serving network node:

        NO - do not register names
        YES - register names"
```

```
::= { ibmappnEnUniqueCaps 4 }
```

```
ibmappnNodeEnSendRegChar OBJECT-TYPE
    SYNTAX INTEGER {yes(1), no(2)}
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Indicates whether this node supports
        send register characteristics, which is only
        supported when send registered names is also
        supported."
```

```
::= { ibmappnEnUniqueCaps 5 }
```

```
-- *****
-- APPN Port information
--
```

```
ibmappnNodePortTable OBJECT-TYPE
    SYNTAX SEQUENCE OF IbmappnNodePortEntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION
        "The Port table describes the configuration and current
        status of the ports used by APPN.  The type of DLC is
        included in this table as a pointer to the DLC port
        specific tables."

    ::= { ibmappnPortInformation 1 }
```

```
ibmappnNodePortEntry OBJECT-TYPE
    SYNTAX IbmappnNodePortEntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION
        "The Port Name is used as the index to this table."

    INDEX
        { ibmappnNodePortName }

    ::= { ibmappnNodePortTable 1 }
```

```
IbmappnNodePortEntry ::= SEQUENCE {
    ibmappnNodePortName          DisplayString,
    ibmappnNodePortState        INTEGER,

    ibmappnNodePortDlcType      INTEGER,
    ibmappnNodePortPortType     INTEGER,
    ibmappnNodePortSIMRIM       INTEGER,
    ibmappnNodePortLsRole       INTEGER,
    ibmappnNodePortMaxRcvBtuSize  INTEGER,
    ibmappnNodePortMaxIframeWindow  INTEGER,
    ibmappnNodePortDefLsGoodXids Counter,
    ibmappnNodePortDefLsBadXids Counter,
    ibmappnNodePortDynLsGoodXids Counter,
    ibmappnNodePortDynLsBadXids Counter,
    ibmappnNodePortSpecific     OBJECT IDENTIFIER
}
```

```
ibmappnNodePortName OBJECT-TYPE
```

```

SYNTAX DisplayString (SIZE (1..8))
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "Administratively-assigned name for this APPN port.
    The name can be from one to eight characters."

```

```
 ::= { ibmappnNodePortEntry 1 }
```

```

ibmappnNodePortState      OBJECT-TYPE
SYNTAX INTEGER           {
    inactive(1),
    pendactive(2),
    active(3),
    pendinact(4)
}

```

```

ACCESS read-write
STATUS mandatory
DESCRIPTION
    "Indicates the current state of this port."

```

```
 ::= { ibmappnNodePortEntry 2 }
```

```

ibmappnNodePortDlcType OBJECT-TYPE
SYNTAX INTEGER {
    other(1),          -- none of the following
    sdlc(2),
    dls(3),
    socket(4),
    ethernet(5),
    tokenRing(6)
}

```

```

ACCESS read-only
STATUS mandatory
DESCRIPTION
    "The type of DLC interface, distinguished according
    to the protocol immediately 'below' this layer."

```

```
 ::= { ibmappnNodePortEntry 3 }
```

```

ibmappnNodePortPortType OBJECT-TYPE
SYNTAX INTEGER {
    leased(1),
    switched(2),
    sharedAccessFacilities(3)
}

```

```

ACCESS read-only
STATUS mandatory

```

DESCRIPTION

"Identifies the type of line used by this port."

::= { ibmappnNodePortEntry 4 }

ibmappnNodePortSIMRIM OBJECT-TYPE

SYNTAX INTEGER {yes(1), no(2)}

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Indicates whether Set Initialization Mode (SIM) and Receive Initialization Mode (RIM) are supported."

::= { ibmappnNodePortEntry 5 }

ibmappnNodePortLsRole OBJECT-TYPE

SYNTAX INTEGER {
 primary(1),
 secondary(2),
 negotiable(3),
 abm(4)
 }

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Initial role for LSs activated through this port, where 'abm' indicates asynchronous balance mode."

::= { ibmappnNodePortEntry 6 }

ibmappnNodePortMaxRcvBtuSize OBJECT-TYPE

SYNTAX INTEGER

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Maximum Basic Transmission Size (BTU) that a link station on this port can receive."

::= { ibmappnNodePortEntry 7 }

ibmappnNodePortMaxIframeWindow OBJECT-TYPE

SYNTAX INTEGER

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Maximum number of I-frames that can be received by the XID sender before an acknowledgement is received."

```
::= { ibmappnNodePortEntry 8 }
```

```
ibmappnNodePortDefLsGoodXids    OBJECT-TYPE
    SYNTAX Counter
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "The total number of successfull XIDs that have occurred
        on all defined link stations on this port since the last
        time this port was started."
```

```
::= { ibmappnNodePortEntry 9 }
```

```
ibmappnNodePortDefLsBadXids    OBJECT-TYPE
    SYNTAX Counter
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "The total number of unsuccessfull XIDs that have occurred
        on all defined link stations on this port since the last
        time this port was started."
```

```
::= { ibmappnNodePortEntry 10 }
```

```
ibmappnNodePortDynLsGoodXids   OBJECT-TYPE
    SYNTAX Counter
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "The total number of successfull XIDs that have occurred
        on all dynamic link stations on this port since the last
        time this port was started."
```

```
::= { ibmappnNodePortEntry 11 }
```

```
ibmappnNodePortDynLsBadXids    OBJECT-TYPE
    SYNTAX Counter
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "The total number of unsuccessfull XIDs that have occurred
        on all dynamic link stations on this port since the last
        time this port was started."
```

```
::= { ibmappnNodePortEntry 12 }
```

```
ibmappnNodePortSpecific OBJECT-TYPE
    SYNTAX OBJECT IDENTIFIER
```

```

ACCESS read-only
STATUS mandatory
DESCRIPTION
    "Identifies the port specific OBJECT IDENTIFIER
    that can provide additional information."

```

```
 ::= { ibmappnNodePortEntry 13 }
```

```

-- *****
--
--

```

```

ibmappnNodePortIpTable OBJECT-TYPE
    SYNTAX SEQUENCE OF IbmappnNodePortIpEntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION
        "Port table (TCP/IP specific)."
```

```
 ::= { ibmappnPortInformation 2 }
```

```

ibmappnNodePortIpEntry OBJECT-TYPE
    SYNTAX IbmappnNodePortIpEntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION
        "The IP Name is used as the index to this table."

```

```

INDEX
    {ibmappnNodePortIpName }

```

```
 ::= { ibmappnNodePortIpTable 1 }
```

```

IbmappnNodePortIpEntry ::= SEQUENCE {
    ibmappnNodePortIpName      DisplayString,
    ibmappnNodePortIpPortNum   INTEGER
}

```

```

ibmappnNodePortIpName OBJECT-TYPE
    SYNTAX DisplayString (SIZE (1..8))
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Administratively-assigned name for this APPN port.
        The name can be from one to eight characters."

```

```
 ::= { ibmappnNodePortIpEntry 1 }
```

```
ibmappnNodePortIpPortNum OBJECT-TYPE
    SYNTAX INTEGER
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Local TCP/IP port number."
```

```
 ::= { ibmappnNodePortIpEntry 2 }
```

```
-- *****
--
--
```

```
ibmappnNodePortDlsTable OBJECT-TYPE
    SYNTAX SEQUENCE OF IbmappnNodePortDlsEntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION
        "Port table (DLS specific)."
```

```
 ::= { ibmappnPortInformation 3 }
```

```
ibmappnNodePortDlsEntry OBJECT-TYPE
    SYNTAX IbmappnNodePortDlsEntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION
        "The DLS Name is used as the index to this table."
```

```
INDEX
    {ibmappnNodePortDlsName }
```

```
 ::= { ibmappnNodePortDlsTable 1 }
```

```
IbmappnNodePortDlsEntry ::= SEQUENCE {
    ibmappnNodePortDlsName      DisplayString,
    ibmappnNodePortDlsMac       OCTET STRING,
    ibmappnNodePortDlsSap       OCTET STRING
}
```

```
ibmappnNodePortDlsName OBJECT-TYPE
    SYNTAX DisplayString (SIZE (1..8))
    ACCESS read-only
    STATUS mandatory
```

DESCRIPTION

"Administratively-assigned name for this APPN DLS port.
The name can be from one to eight characters."

::= { ibmappnNodePortDlsEntry 1 }

ibmappnNodePortDlsMac OBJECT-TYPE

SYNTAX OCTET STRING (SIZE (6))

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Local DLS MAC address."

::= { ibmappnNodePortDlsEntry 2 }

ibmappnNodePortDlsSap OBJECT-TYPE

SYNTAX OCTET STRING (SIZE (1))

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Local DLS Sap address."

::= { ibmappnNodePortDlsEntry 3 }

-- *****
--
--

ibmappnNodePortTrTable OBJECT-TYPE

SYNTAX SEQUENCE OF IbmappnNodePortTrEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION

"Port table (Token Ring specific)."

::= { ibmappnPortInformation 4 }

ibmappnNodePortTrEntry OBJECT-TYPE

SYNTAX IbmappnNodePortTrEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION

"The TR Name is used as the index to this table."

INDEX

{ ibmappnNodePortTrName }


```
 ::= { ibmappnNodePortTrTable 1 }
```

```
IbmappnNodePortTrEntry ::= SEQUENCE {
    ibmappnNodePortTrName      DisplayString,
    ibmappnNodePortTrMac      OCTET STRING,
    ibmappnNodePortTrSap      OCTET STRING
}
```

```
ibmappnNodePortTrName OBJECT-TYPE
    SYNTAX DisplayString (SIZE (1..8))
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Administratively-assigned name for this APPN port.
        The name can be from one to eight characters."
```

```
 ::= { ibmappnNodePortTrEntry 1 }
```

```
ibmappnNodePortTrMac OBJECT-TYPE
    SYNTAX OCTET STRING (SIZE (6))
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Local Token Ring MAC address."
```

```
 ::= { ibmappnNodePortTrEntry 2 }
```

```
ibmappnNodePortTrSap OBJECT-TYPE
    SYNTAX OCTET STRING (SIZE (1))
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Local Token Ring Sap address."
```

```
 ::= { ibmappnNodePortTrEntry 3 }
```

```
-- *****
-- APPN generic DLC Trace
--
```

```
ibmappnNodePortDlcTraceTable OBJECT-TYPE
    SYNTAX SEQUENCE OF IbmappnNodePortDlcTraceEntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION
        "Port table generic DLC trace table."
```

```
::= { ibmappnPortInformation 5 }
```

```
ibmappnNodePortDlcTraceEntry OBJECT-TYPE
    SYNTAX IbmappnNodePortDlcTraceEntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION
```

```
    "The Port name and a dynamic integer are the index to
    this table."
```

```
INDEX
```

```
    { ibmappnNodePortDlcTracPortName,
      ibmappnNodePortDlcTracIndex }
```

```
::= { ibmappnNodePortDlcTraceTable 1 }
```

```
IbmappnNodePortDlcTraceEntry ::= SEQUENCE {
    ibmappnNodePortDlcTracPortName      DisplayString,
    ibmappnNodePortDlcTracIndex        INTEGER,
    ibmappnNodePortDlcTracDlcType      INTEGER,
    ibmappnNodePortDlcTracLocalAddr    DisplayString,
    ibmappnNodePortDlcTracRemoteAddr   DisplayString,
    ibmappnNodePortDlcTracMsgType      INTEGER,
    ibmappnNodePortDlcTracCmdType      INTEGER,
    ibmappnNodePortDlcTracUseWan       INTEGER
}
```

```
ibmappnNodePortDlcTracPortName OBJECT-TYPE
```

```
    SYNTAX DisplayString
```

```
    ACCESS read-only
```

```
    STATUS mandatory
```

```
    DESCRIPTION
```

```
        "The Port name associated with this this trace table entry."
```

```
::= { ibmappnNodePortDlcTraceEntry 1 }
```

```
ibmappnNodePortDlcTracIndex OBJECT-TYPE
```

```
    SYNTAX INTEGER
```

```
    ACCESS read-only
```

```
    STATUS mandatory
```

```
    DESCRIPTION
```

```
        "This index value is updated every time a new trace entry
        is created which provides a means to retrieve only the
        updated entries and also provides a simple method of
        correlating the entries. The table will wrap when the
        table is full, which will result in previous entries
        being written over. The mangement station can over
        come this by retrieving the table using this index to
```

retrieve only the new table entries."

```
::= { ibmappnNodePortDlcTraceEntry 2 }
```

ibmappnNodePortDlcTracDlcType OBJECT-TYPE

```
SYNTAX INTEGER {
    other(1),          -- none of the following
    sdlc(2),
    dls(3),
    socket(4),
    ethernet(5),
    tokenRing(6)
}
```

ACCESS read-only

STATUS mandatory

DESCRIPTION

"The type of DLC interface, distinguished according to the protocol immediately 'below' this layer."

```
::= { ibmappnNodePortDlcTraceEntry 3 }
```

ibmappnNodePortDlcTracLocalAddr OBJECT-TYPE

SYNTAX DisplayString

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Local address in format described below:

```
other      = free form DisplayString
ip         = ld. ld. ld. ld / 2d
tr         = lx: lx: lx: lx: lx: lx . lx
dlsw      = lx: lx: lx: lx: lx: lx . lx
ethernet  = lx: lx: lx: lx: lx: lx . lx
"
```

```
::= { ibmappnNodePortDlcTraceEntry 4 }
```

ibmappnNodePortDlcTracRemoteAddr OBJECT-TYPE

SYNTAX DisplayString

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Remote Address in the format described below:

```
other      = free form DisplayString
ip         = ld. ld. ld. ld / 2d
tr         = lx: lx: lx: lx: lx: lx . lx
dlsw      = lx: lx: lx: lx: lx: lx . lx
```

```

ethernet = lx: lx: lx: lx: lx: lx . lx
"

```

```

 ::= { ibmappnNodePortDlcTraceEntry 5 }

```

```

ibmappnNodePortDlcTracMsgType OBJECT-TYPE

```

```

  SYNTAX INTEGER {

```

```

--      enumeration values between 1 and 1999 are reserved
--      for potential undefined message types.

```

```

          other(1),
          unknown(2),
          request(3),
          confirm(4),
          indication(5),
          response(6)

```

```

--      enumeration values between 2000 and 3999 are reserved
--      for IP socket traces,

```

```

--      enumeration values between 4000 and 5999 are reserved
--      for DLS traces,

```

```

--      enumeration values between 6000 and 7999 are reserved
--      for TR traces,

```

```

    }

```

```

  ACCESS read-only

```

```

  STATUS mandatory

```

```

  DESCRIPTION

```

```

    "Indicates the type of trace record entry"

```

```

 ::= { ibmappnNodePortDlcTraceEntry 6 }

```

```

ibmappnNodePortDlcTracCmdType OBJECT-TYPE

```

```

  SYNTAX INTEGER {

```

```

--      enumeration values between 1 and 1999 are reserved
--      for potential undefined message types.

```

```

          testFrame(1),
          respFrame(2),
          curFrame(3),
          icrFrame(4),

```

```
respAck(5),
dgrmFrame(6),
xidFrame(7),
contFrame(8),
contedFrame(9),
iFrame(10),
enterBusy(12),
exitBusy(13),
haltFrame(14),
lsHalted(15),
restartLs(16),
lsRestarted(17),
netBioSnq(18),
netBioSnr(19),
gnetFrame(20),
netdFrame(21),
oobFrame(22),
alterSap(23),
testRsp(24),
haltLsNow(25),
testReq(26),
```

```
-- enumeration values between 2000 and 3999 are reserved
-- for IP socket traces.
```

```
ipTestFrame(2001),
ipRespFrame(2002),
ipCurFrame(2003),
ipIcrFrame(2004),
ipRespAck(2005),
ipDgrmFrame(2006),
ipXidFrame(2007),
ipContFrame(2008),
ipContedFrame(2009),
ipIFrame(2010),
ipEnterBusy(2012),
ipExitBusy(2013),
ipHaltFrame(2014),
ipLsHalted(2015),
ipRestartLs(2016),
ipLsRestarted(2017),
ipNetBioSnq(2018),
ipNetBioSnr(2019),
ipGnetFrame(2020),
ipNetdFrame(2021),
ipOobFrame(2022),
ipAlterSap(2023),
ipTestRsp(2024),
ipHaltLsNow(2025),
```

```

        ipTestReq(2026),

--      enumeration values between 4000 and 5999 are reserved
--      for DLS traces.

        dlsIpm(4124),

--      enumeration values between 6000 and 7999 are reserved for
--      TR traces.
        trTestFrame(6001),
        trRespFrame(6002),
        trCurFrame(6003),
        trIcrFrame(6004),
        trRespAck(6005),
        trDgrmFrame(6006),
        trXidFrame(6007),
        trContFrame(6008),
        trContedFrame(6009),
        trIFrame(6010),
        trEnterBusy(6012),
        trExitBusy(6013),
        trHaltFrame(6014),
        trLsHalted(6015),
        trRestartLs(6016),
        trLsRestarted(6017),
        trNetBioSnq(6018),
        trNetBioSnr(6019),
        trGnetFrame(6020),
        trNetdFrame(6021),
        trOobFrame(6022),
        trAlterSap(6023),
        trTestRsp(6024),
        trHaltLsNow(6025),
        trTestReq(6026)
    }

ACCESS read-only
STATUS mandatory
DESCRIPTION
    "Indicates the command type of the trace entry."

 ::= { ibmappnNodePortDlcTraceEntry 7 }

ibmappnNodePortDlcTracUseWan OBJECT-TYPE
SYNTAX INTEGER {
    other(1),
    notApplicable(2),
    useUnknown(3),

```

```

        useWan(4),
        useLan(5)
    }

```

```

ACCESS read-only
STATUS mandatory
DESCRIPTION

```

```

    "Indicates the type of connection of the trace entry.
    For example, token ring and ethernet ports will have
    useLan as connection. For the dls port, it could be
    either useWan if connection is across Wan via dls
    sessions, or useLan if connection is to a local attached
    LAN."

```

```

 ::= { ibmappnNodePortDlcTraceEntry 8 }

```

```

-- *****
-- APPN Link Station Information
--

```

```

ibmappnNodeLsTable OBJECT-TYPE

```

```

    SYNTAX SEQUENCE OF IbmappnNodeLsEntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION

```

```

        "This table contains detail information about the
        link station configuration and current status."

```

```

 ::= { ibmappnLinkStationInformation 1 }

```

```

ibmappnNodeLsEntry OBJECT-TYPE

```

```

    SYNTAX IbmappnNodeLsEntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION

```

```

        "This table is indexed by the link station name."

```

```

INDEX

```

```

    { ibmappnNodeLsName }

```

```

 ::= { ibmappnNodeLsTable 1 }

```

```

IbmappnNodeLsEntry ::= SEQUENCE {

```

```

    ibmappnNodeLsName          DisplayString,
    ibmappnNodeLsPortName     DisplayString,
    ibmappnNodeLsDlcType      INTEGER,

```

```

        ibmappnNodeLsDynamic          INTEGER,
        ibmappnNodeLsState            INTEGER,
-- ls defined data / xid info
        ibmappnNodeLsCpName           DisplayString,
        ibmappnNodeLsTgNum            INTEGER,
        ibmappnNodeLsLimResource      INTEGER,
        ibmappnNodeLsMigration        INTEGER,
        ibmappnNodeLsBlockNum         DisplayString,
        ibmappnNodeLsIdNum            DisplayString,
        ibmappnNodeLsCpCpSession      INTEGER,
-- ls parms (common) / xid info
        ibmappnNodeLsTargetPacingCount INTEGER,
        ibmappnNodeLsMaxSendBtuSize   INTEGER,
-- tg characteristics
        ibmappnNodeLsEffCap           INTEGER,
        ibmappnNodeLsConnCost         INTEGER,
        ibmappnNodeLsByteCost         INTEGER,
        ibmappnNodeLsSecurity         INTEGER,
        ibmappnNodeLsDelay            INTEGER,
        ibmappnNodeLsUsr1             INTEGER,
        ibmappnNodeLsUsr2             INTEGER,
        ibmappnNodeLsUsr3             INTEGER,
-- ls (performance data)
        ibmappnNodeLsInXidBytes       Counter,
        ibmappnNodeLsInMsgBytes       Counter,
        ibmappnNodeLsInXidFrames      Counter,
        ibmappnNodeLsInMsgFrames      Counter,
        ibmappnNodeLsOutXidBytes      Counter,
        ibmappnNodeLsOutMsgBytes      Counter,
        ibmappnNodeLsOutXidFrames     Counter,
        ibmappnNodeLsOutMsgFrames     Counter,
-- ls (propagation delay)
        ibmappnNodeLsEchoRspSps       Counter,
        ibmappnNodeLsCurrentDelay      INTEGER,
        ibmappnNodeLsMaxDelay          INTEGER,
        ibmappnNodeLsMinDelay          INTEGER,
        ibmappnNodeLsMaxDelayTime     TimeTicks,
-- ls (Xid Statistics)
        ibmappnNodeLsGoodXids         Counter,
        ibmappnNodeLsBadXids          Counter,
-- Dlc specific
        ibmappnNodeLsSpecific         OBJECT IDENTIFIER,
        ibmappnNodeLsSubState         INTEGER,
        ibmappnNodeLsStartTime        TimeTicks,
        ibmappnNodeLsActiveTime       TimeTicks,
        ibmappnNodeLsCurrentStateTime TimeTicks
    }

```



```

ibmappnNodeLsName OBJECT-TYPE
    SYNTAX DisplayString (SIZE (1..8))
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Administratively-assigned name for the link station.
         The name can be from one to eight characters."

 ::= { ibmappnNodeLsEntry 1 }

ibmappnNodeLsPortName OBJECT-TYPE
    SYNTAX DisplayString (SIZE (1..8))
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Administratively-assigned name for the port.
         The name can be from one to eight characters."

 ::= { ibmappnNodeLsEntry 2 }

ibmappnNodeLsDlcType OBJECT-TYPE
    SYNTAX INTEGER {
        other(1),          -- none of the following
        sdlc(2),
        dls(3),
        socket(4),
        ethernet(5),
        tokenRing(6)
    }
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "The type of DLC interface, distinguished according
         to the protocol immediately 'below' this layer."

 ::= { ibmappnNodeLsEntry 3 }

ibmappnNodeLsDynamic OBJECT-TYPE
    SYNTAX INTEGER {yes(1), no(2)}
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Identifies whether this resource is a dynamic link station.
         Dynamic link stations are created when adjacent nodes
         that have not been locally defined establish a connection
         with this node."

```

```
::= { ibmappnNodeLsEntry 4 }
```

```
ibmappnNodeLsState      OBJECT-TYPE
  SYNTAX INTEGER        {
    inactive(1),
    pendactive(2),
    active(3),
    pendinact(4)
  }
  ACCESS read-write
  STATUS mandatory
  DESCRIPTION
    "State of this link station."
```

```
::= { ibmappnNodeLsEntry 5 }
```

```
ibmappnNodeLsCpName     OBJECT-TYPE
  SYNTAX DisplayString (SIZE (3..17))
  ACCESS read-only
  STATUS mandatory
  DESCRIPTION
    "Fully-qualified name of the adjacent node for this link
    station. The name can be from three to seventeen
    characters. Format is netid.cpname."
```

```
::= { ibmappnNodeLsEntry 6 }
```

```
ibmappnNodeLsTgNum      OBJECT-TYPE
  SYNTAX INTEGER
  ACCESS read-only
  STATUS mandatory
  DESCRIPTION
    "Number associated with the TG to this link station."
```

```
::= { ibmappnNodeLsEntry 7 }
```

```
ibmappnNodeLsLimResource OBJECT-TYPE
  SYNTAX INTEGER {yes(1), no(2)}
  ACCESS read-only
  STATUS mandatory
  DESCRIPTION
    "Indicates whether the link station is
    a limited resource. If it is, the TG
    is deactivated when there are no sessions."
```

```
::= { ibmappnNodeLsEntry 8 }
```

```

ibmappnNodeLsMigration OBJECT-TYPE
    SYNTAX INTEGER {yes(1), no(2)}
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Indicates whether this link station will be used
        for connections to down-level or migration partners."

 ::= { ibmappnNodeLsEntry 9 }

ibmappnNodeLsBlockNum OBJECT-TYPE
    SYNTAX DisplayString (SIZE (3))
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "The block number is the first three digits of the node_id.
        These 3 hexadecimal digits identify the product and are not
        configurable."

 ::= { ibmappnNodeLsEntry 10 }

ibmappnNodeLsIdNum OBJECT-TYPE
    SYNTAX DisplayString (SIZE (5))
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "The ID number is the last 5 digits of the node_id.
        These 5 hexadecimal digits are administratively defined and
        combined with the 3 digit block number form the node_id.
        This node_id is used to identify the local node and is
        include in APPN alerts as well as being included in XIDs.
        A unique value is required for connections to SNA
        sub-area."

 ::= { ibmappnNodeLsEntry 11 }

ibmappnNodeLsCpCpSession OBJECT-TYPE
    SYNTAX INTEGER {yes(1), no(2)}
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Indicates whether CP-CP sessions are
        supported by this link station."

 ::= { ibmappnNodeLsEntry 12 }

ibmappnNodeLsTargetPacingCount OBJECT-TYPE
    SYNTAX INTEGER

```

ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Numeric value between 0 and 32767 inclusive indicating
 the desired pacing window size for BINDs on this TG.
 The number is significant only when fixed bind pacing
 is being performed."

::= { ibmappnNodeLsEntry 13 }

ibmappnNodeLsMaxSendBtuSize OBJECT-TYPE
 SYNTAX INTEGER
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Numeric value between 0 and 32767 inclusive indicating
 the desired number of bytes in a Basic Transmission Unit
 (BTU) that can be sent on this TG.
 This is an administratively assigned value."

::= { ibmappnNodeLsEntry 14 }

ibmappnNodeLsEffCap OBJECT-TYPE
 SYNTAX INTEGER
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "The effective capacity is an integer value that indicates
 the kilo bits per second.
 It is derived from the link bandwidth and maximum load
 factor with the range of 0 thru 603,979,776.
 This is an administratively assigned value associated
 with the TG using this link station."

::= { ibmappnNodeLsEntry 15 }

ibmappnNodeLsConnCost OBJECT-TYPE
 SYNTAX INTEGER (0..255)
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Cost per connect time: a value representing
 the relative cost per unit of time to use
 the TG. Range is from 0, which means no cost,
 to 255, which indicates maximum cost.
 This is an administratively assigned value associated
 with the TG using this link station."

```
::= { ibmappnNodeLsEntry 16 }
```

```
ibmappnNodeLsByteCost OBJECT-TYPE
```

```
SYNTAX INTEGER (0..255)
```

```
ACCESS read-only
```

```
STATUS mandatory
```

```
DESCRIPTION
```

```
"Relative cost of transmitting a byte over this link.
```

```
Range is from 0 (lowest cost) to 255.
```

```
This is an administratively assigned value associated  
with the TG using this link station."
```

```
::= { ibmappnNodeLsEntry 17 }
```

```
ibmappnNodeLsSecurity OBJECT-TYPE
```

```
SYNTAX INTEGER {
```

```
nonsecure(1), --X'01'
```

```
publicSwitchedNetwork(32), --X'20'
```

```
undergroundCable(64), --X'40'
```

```
secureConduit(96), --X'60'
```

```
guardedConduit(128), --X'80'
```

```
encrypted(160), --X'A0'
```

```
guardedRadiation(192) --X'C0'
```

```
}
```

```
ACCESS read-only
```

```
STATUS mandatory
```

```
DESCRIPTION
```

```
"The security is represented as an integer with a range of  
1 thru 255 with the most common values enumerated as  
defined above.
```

```
This is an administratively assigned value associated  
with the TG using this link station."
```

```
::= { ibmappnNodeLsEntry 18 }
```

```
ibmappnNodeLsDelay OBJECT-TYPE
```

```
SYNTAX INTEGER {
```

```
minimum(0), --X'00'
```

```
negligible(384), --X'4C'
```

```
terrestrial(9216), --X'71'
```

```
packet(147456), --X'91'
```

```
long(294912), --X'99'
```

```
maximum(2013265920) --X'FF'
```

```
}
```

```
ACCESS read-only
```

```
STATUS mandatory
```

```
DESCRIPTION
```

```
"Relative amount of time that it takes for a signal to
```

travel the length of the logical link. This time is represented in micro seconds, with some of the more common values enumerated.
This is an administratively assigned value associated with the TG using this link station."

::= { ibmappnNodeLsEntry 19 }

ibmappnNodeLsUsr1 OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION

"First user-defined TG characteristic for this TG with a range of 0-255.

This is an administratively assigned value associated with the TG using this link station."

::= { ibmappnNodeLsEntry 20 }

ibmappnNodeLsUsr2 OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Second user-defined TG characteristic for this TG with a range of 0-255.

This is an administratively assigned value associated with the TG using this link station."

::= { ibmappnNodeLsEntry 21 }

ibmappnNodeLsUsr3 OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Third user-defined TG characteristic for this TG with a range of 0-255.

This is an administratively assigned value associated with the TG using this link station."

::= { ibmappnNodeLsEntry 22 }

ibmappnNodeLsInXidBytes OBJECT-TYPE

SYNTAX Counter

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Number of XID bytes received."

::= { ibmappnNodeLsEntry 23 }

ibmappnNodeLsInMsgBytes OBJECT-TYPE

SYNTAX Counter

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Number of message (I-frame) bytes received."

::= { ibmappnNodeLsEntry 24 }

ibmappnNodeLsInXidFrames OBJECT-TYPE

SYNTAX Counter

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Number of XID frames received."

::= { ibmappnNodeLsEntry 25 }

ibmappnNodeLsInMsgFrames OBJECT-TYPE

SYNTAX Counter

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Number of message (I-frame) frames received."

::= { ibmappnNodeLsEntry 26 }

ibmappnNodeLsOutXidBytes OBJECT-TYPE

SYNTAX Counter

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Number of XID bytes sent."

::= { ibmappnNodeLsEntry 27 }

ibmappnNodeLsOutMsgBytes OBJECT-TYPE

SYNTAX Counter

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Number of message (I-frame) bytes sent."

```
::= { ibmappnNodeLsEntry 28 }
```

```
ibmappnNodeLsOutXidFrames OBJECT-TYPE
    SYNTAX Counter
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Number of XID frames sent."
```

```
::= { ibmappnNodeLsEntry 29 }
```

```
ibmappnNodeLsOutMsgFrames OBJECT-TYPE
    SYNTAX Counter
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Number of message (I-frame) frames sent."
```

```
::= { ibmappnNodeLsEntry 30 }
```

```
ibmappnNodeLsEchoRsps      OBJECT-TYPE
    SYNTAX Counter
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Number of responses returned from adjacent link station.
        A response should be returned for each test frame sent by
        this node.
        Test frames are sent to adjacent nodes periodically to
        verify connectivity and to measure that actual round trip
        time, that is the time the test frame is sent until the
        response is received."
```

```
::= { ibmappnNodeLsEntry 31 }
```

```
ibmappnNodeLsCurrentDelay OBJECT-TYPE
    SYNTAX INTEGER
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "The time that it took for the last test signal to be
        sent and returned from this link station to the
        adjacent links station.
        This time is represented in milliseconds."
```

```
::= { ibmappnNodeLsEntry 32 }
```

```
ibmappnNodeLsMaxDelay      OBJECT-TYPE
```


SYNTAX INTEGER
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "The longest time it took for a test signal
 to be sent and returned from this link station to the
 adjacent links station.
 This time is represented in milliseconds ."

::= { ibmappnNodeLsEntry 33 }

ibmappnNodeLsMinDelay OBJECT-TYPE
 SYNTAX INTEGER
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "The shortest time it took for a test signal
 to be sent and returned from this link station to the
 adjacent links station.
 This time is represented in milliseconds."

::= { ibmappnNodeLsEntry 34 }

ibmappnNodeLsMaxDelayTime OBJECT-TYPE
 SYNTAX TimeTicks
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "The time (since system up in hundredth of seconds)
 when the longest delay occurred.
 This time can be used to identify when this high
 water mark occurred in relation to the last initialization
 of the APPN node."

::= { ibmappnNodeLsEntry 35 }

ibmappnNodeLsGoodXids OBJECT-TYPE
 SYNTAX Counter
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "The total number of successful XIDs that have occurred
 on this link station since the time it was started."

::= { ibmappnNodeLsEntry 36 }

ibmappnNodeLsBadXids OBJECT-TYPE
 SYNTAX Counter

```

ACCESS read-only
STATUS mandatory
DESCRIPTION
    "The total number of unsuccessful XIDs that have occurred
    on this link station since the time it was started."

```

```
 ::= { ibmappnNodeLsEntry 37 }
```

```

ibmappnNodeLsSpecific OBJECT-TYPE
SYNTAX OBJECT IDENTIFIER
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "Identifies the DLC specific OBJECT IDENTIFIER
    that can provide additional information."

```

```
 ::= { ibmappnNodeLsEntry 38 }
```

```

ibmappnNodeLsSubState      OBJECT-TYPE
SYNTAX INTEGER             {
    inactive(1),
    sentReqOpnstn(2),
    pendXidExch(3),
    sentActAs(4),
    sentSetMode(5),
    active(6),
    sentDeactAsOrd(7),
    sentDiscOrd(8),
    sentDestroyTg(9),
    sentCreateTg(10),
    sentConnReq(11),
    pendRcvConnInd(12),
    pendSendConnRsp(13),
    sentConnRsp(14),
    pendDeact(15)
}
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "State of this link station."

```

```
 ::= { ibmappnNodeLsEntry 39 }
```

```

ibmappnNodeLsStartTime    OBJECT-TYPE
SYNTAX TimeTicks
ACCESS read-only
STATUS mandatory
DESCRIPTION

```

"The time (in hundredth of seconds) this link station has been active the last time since the time APPN was initialized."

::= { ibmappnNodeLsEntry 40 }

ibmappnNodeLsActiveTime OBJECT-TYPE

SYNTAX TimeTicks

ACCESS read-only

STATUS mandatory

DESCRIPTION

"The time (in hundredth of seconds) this link station has been in the active state.

A zero value indicates the link station has never been active."

::= { ibmappnNodeLsEntry 41 }

ibmappnNodeLsCurrentStateTime OBJECT-TYPE

SYNTAX TimeTicks

ACCESS read-only

STATUS mandatory

DESCRIPTION

"The time (in hundredth of seconds) the link station is in the current state."

::= { ibmappnNodeLsEntry 42 }

-- *****
 -- Link station table (TCP/IP specific)
 --

ibmappnNodeLsIpTable OBJECT-TYPE

SYNTAX SEQUENCE OF IbmappnNodeLsIpEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION

"Link station table (TCP/IP specific)."

::= { ibmappnLinkStationInformation 2 }

ibmappnNodeLsIpEntry OBJECT-TYPE

SYNTAX IbmappnNodeLsIpEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION

"The IP Name is used as the index to this table."

INDEX

```
{ibmappnNodeLsIpName }
```

```
::= { ibmappnNodeLsIpTable 1 }
```

```
IbmappnNodeLsIpEntry ::= SEQUENCE {
    ibmappnNodeLsIpName          DisplayString,
    ibmappnNodeLsIpState         INTEGER,
    ibmappnNodeLsLocalIpAddr     IpAddress,
    ibmappnNodeLsLocalIpPortNum  INTEGER,
    ibmappnNodeLsRemoteIpAddr    IpAddress,
    ibmappnNodeLsRemoteIpPortNum INTEGER
}
```

```
ibmappnNodeLsIpName OBJECT-TYPE
```

```
SYNTAX DisplayString (SIZE (1..8))
```

```
ACCESS read-only
```

```
STATUS mandatory
```

```
DESCRIPTION
```

```
"Administratively-assigned name for this link station. The
name can be from one to eight characters."
```

```
::= { ibmappnNodeLsIpEntry 1 }
```

```
ibmappnNodeLsIpState OBJECT-TYPE
```

```
SYNTAX INTEGER {
    inactive(1),
    pendactive(2),
    active(3),
    pendinact(4)
}
```

```
ACCESS read-only
```

```
STATUS mandatory
```

```
DESCRIPTION
```

```
"State of this link station."
```

```
::= { ibmappnNodeLsIpEntry 2 }
```

```
ibmappnNodeLsLocalIpAddr OBJECT-TYPE
```

```
SYNTAX IpAddress
```

```
ACCESS read-only
```

```
STATUS mandatory
```

```
DESCRIPTION
```

```
"Local IP address."
```

```
::= { ibmappnNodeLsIpEntry 3 }
```

```
ibmappnNodeLsLocalIpPortNum OBJECT-TYPE
```

```

SYNTAX INTEGER
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "Local TCP/IP port number.
    The default listening port will be administratively
    assigned and will dynamically change if this node
    initiates a session with adjacent node."

 ::= { ibmappnNodeLsIpEntry 4 }

```

```

ibmappnNodeLsRemoteIpAddr OBJECT-TYPE
    SYNTAX IpAddress
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Remote IP address."

 ::= { ibmappnNodeLsIpEntry 5 }

```

```

ibmappnNodeLsRemoteIpPortNum OBJECT-TYPE
    SYNTAX INTEGER
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Remote TCP/IP port number."

 ::= { ibmappnNodeLsIpEntry 6 }

```

```

-- *****
-- Ls Table (DLS specific)
--

```

```

ibmappnNodeLsDlsTable OBJECT-TYPE
    SYNTAX SEQUENCE OF IbmappnNodeLsDlsEntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION
        "Ls Table (DLS specific)."

```

```

ibmappnNodeLsDlsEntry OBJECT-TYPE
    SYNTAX IbmappnNodeLsDlsEntry

```

```

ACCESS not-accessible
STATUS mandatory
DESCRIPTION
    "The DLS Name is used as the index to this table."

```

```

INDEX
    { ibmappnNodeLsDlsName }

 ::= { ibmappnNodeLsDlsTable 1 }

```

```

IbmappnNodeLsDlsEntry ::= SEQUENCE {
    ibmappnNodeLsDlsName      DisplayString,
    ibmappnNodeLsDlsState     INTEGER,
    ibmappnNodeLsLocalDlsMac  OCTET STRING,
    ibmappnNodeLsLocalDlsSap  OCTET STRING,
    ibmappnNodeLsRemoteDlsMac OCTET STRING,
    ibmappnNodeLsRemoteDlsSap OCTET STRING
}

```

```

ibmappnNodeLsDlsName OBJECT-TYPE
    SYNTAX DisplayString (SIZE (1..8))
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Administratively-assigned name for this link station.
         The name can be from one to eight characters."

 ::= { ibmappnNodeLsDlsEntry 1 }

```

```

ibmappnNodeLsDlsState      OBJECT-TYPE
    SYNTAX INTEGER {
        inactive(1),
        pendactive(2),
        active(3),
        pendinact(4)
    }

    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "State of this link station."

 ::= { ibmappnNodeLsDlsEntry 2 }

```

```

ibmappnNodeLsLocalDlsMac OBJECT-TYPE
    SYNTAX OCTET STRING (SIZE (6))
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION

```

"Local MAC address."

::= { ibmappnNodeLsDlsEntry 3 }

ibmappnNodeLsLocalDlsSap OBJECT-TYPE
 SYNTAX OCTET STRING (SIZE (1))
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Local SAP address."

::= { ibmappnNodeLsDlsEntry 4 }

ibmappnNodeLsRemoteDlsMac OBJECT-TYPE
 SYNTAX OCTET STRING (SIZE (6))
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Remote MAC address."

::= { ibmappnNodeLsDlsEntry 5 }

ibmappnNodeLsRemoteDlsSap OBJECT-TYPE
 SYNTAX OCTET STRING (SIZE (1))
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Remote SAP address."

::= { ibmappnNodeLsDlsEntry 6 }

-- *****
 -- Ls Table (Token Ring specific)
 --

ibmappnNodeLsTrTable OBJECT-TYPE
 SYNTAX SEQUENCE OF IbmappnNodeLsTrEntry
 ACCESS not-accessible
 STATUS mandatory
 DESCRIPTION
 "Ls Table (Token Ring specific)."

::= { ibmappnLinkStationInformation 4 }

ibmappnNodeLsTrEntry OBJECT-TYPE
 SYNTAX IbmappnNodeLsTrEntry

```

ACCESS not-accessible
STATUS mandatory
DESCRIPTION
    "The TR Name is used as the index to this table."
INDEX
    { ibmappnNodeLsTrName }

 ::= { ibmappnNodeLsTrTable 1 }

```

```

IbmappnNodeLsTrEntry ::= SEQUENCE {
    ibmappnNodeLsTrName      DisplayString,
    ibmappnNodeLsTrState     INTEGER,
    ibmappnNodeLsLocalTrMac  OCTET STRING,
    ibmappnNodeLsLocalTrSap  OCTET STRING,
    ibmappnNodeLsRemoteTrMac OCTET STRING,
    ibmappnNodeLsRemoteTrSap OCTET STRING
}

```

```

ibmappnNodeLsTrName OBJECT-TYPE
    SYNTAX DisplayString (SIZE (1..8))
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Administratively-assigned name for this link station.
        The name can be from one to eight characters."

 ::= { ibmappnNodeLsTrEntry 1 }

```

```

ibmappnNodeLsTrState      OBJECT-TYPE
    SYNTAX INTEGER {
        inactive(1),
        pendactive(2),
        active(3),
        pendinact(4)
    }

    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "State of this link station."

 ::= { ibmappnNodeLsTrEntry 2 }

```

```

ibmappnNodeLsLocalTrMac OBJECT-TYPE
    SYNTAX OCTET STRING (SIZE (6))
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Local MAC address."

```



```
 ::= { ibmappnNodeLsTrEntry 3 }
```

```
ibmappnNodeLsLocalTrSap OBJECT-TYPE
    SYNTAX OCTET STRING (SIZE (1))
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Local SAP address."
```

```
 ::= { ibmappnNodeLsTrEntry 4 }
```

```
ibmappnNodeLsRemoteTrMac OBJECT-TYPE
    SYNTAX OCTET STRING (SIZE (6))
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Remote MAC address."
```

```
 ::= { ibmappnNodeLsTrEntry 5 }
```

```
ibmappnNodeLsRemoteTrSap OBJECT-TYPE
    SYNTAX OCTET STRING (SIZE (1))
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Remote SAP address."
```

```
 ::= { ibmappnNodeLsTrEntry 6 }
```

```
-- *****
-- This table provides information about errors this node encountered
-- with connections to adjacent nodes. This includes all exceptional
-- conditions encountered establishing connections and all exceptional
-- conditions that result in terminating the connection.
-- *****
```

```
ibmappnNodeLsStatusTable OBJECT-TYPE
    SYNTAX SEQUENCE OF IbmappnNodeLsStatusEntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION
        "This table contains information related to exceptional
        and potential exceptional conditions that occur during
        the activation, XID exchange, and termination of the
        connection."
```

```
 ::= { ibmappnLinkStationInformation 5 }
```

```

ibmappnNodeLsStatusEntry OBJECT-TYPE
    SYNTAX IbmappnNodeLsStatusEntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION
        "This table is indexed by the LsStatusIndex, which is an
        integer that is continuously updated until it eventually
        wraps. This provides the management station the ability
        to retrieve only the updates to the table by using the
        standard GET NEXT."

    INDEX
        { ibmappnNodeLsStatusIndex }

    ::= { ibmappnNodeLsStatusTable 1 }

IbmappnNodeLsStatusEntry ::= SEQUENCE {
    ibmappnNodeLsStatusIndex          INTEGER,
    ibmappnNodeLsStatusTime          TimeTicks,
    ibmappnNodeLsStatusLsName        DisplayString,
    ibmappnNodeLsStatusCpName        DisplayString,
    ibmappnNodeLsStatusNodeId        OCTET STRING,
    ibmappnNodeLsStatusTgNum         INTEGER,
    ibmappnNodeLsStatusGeneralSense  OCTET STRING,
    ibmappnNodeLsStatusNofRetry      INTEGER,
    ibmappnNodeLsStatusEndSense      OCTET STRING,
    ibmappnNodeLsStatusXidLocalSense OCTET STRING,
    ibmappnNodeLsStatusXidRemoteSense OCTET STRING,
    ibmappnNodeLsStatusXidByteInError INTEGER,
    ibmappnNodeLsStatusXidBitInError INTEGER,
    ibmappnNodeLsStatusDlcType       INTEGER,
    ibmappnNodeLsStatusLocalAddr     DisplayString,
    ibmappnNodeLsStatusRemoteAddr    DisplayString
}

ibmappnNodeLsStatusIndex          OBJECT-TYPE
    SYNTAX INTEGER
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "This index is continuous index this table."

    ::= { ibmappnNodeLsStatusEntry 1 }

ibmappnNodeLsStatusTime          OBJECT-TYPE
    SYNTAX TimeTicks
    ACCESS read-only

```

STATUS mandatory
 DESCRIPTION
 "Time (in hundreds of a second) since this node was last
 initialized."

::= { ibmappnNodeLsStatusEntry 2 }

ibmappnNodeLsStatusLsName OBJECT-TYPE
 SYNTAX DisplayString (SIZE (1..8))
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Administratively-assigned name for this link station."

::= { ibmappnNodeLsStatusEntry 3 }

ibmappnNodeLsStatusCpName OBJECT-TYPE
 SYNTAX DisplayString (SIZE (3..17))
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Administratively-assigned fully-qualified name of the
 adjacent node partner. This will be provided when the
 adjacent node has been defined at this node or when the
 XID sequence has proceeded far enough to to identify the
 adjacent node. A blank CP name will indicate the name is
 unknown."

::= { ibmappnNodeLsStatusEntry 4 }

ibmappnNodeLsStatusNodeId OBJECT-TYPE
 SYNTAX OCTET STRING
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Adjacent Node id"

::= { ibmappnNodeLsStatusEntry 5 }

ibmappnNodeLsStatusTgNum OBJECT-TYPE
 SYNTAX INTEGER (0..256)
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Number associated with the TG to this link station
 with a range from 0 to 256. A value of 256 indicates

the tg number has not been negotiated and is unknown at this time."

::= { ibmappnNodeLsStatusEntry 6 }

ibmappnNodeLsStatusGeneralSense OBJECT-TYPE

SYNTAX OCTET STRING

ACCESS read-only

STATUS mandatory

DESCRIPTION

"The error sense code associated with the start sequence of activation of a link up to the beginning of the XID sequence."

::= { ibmappnNodeLsStatusEntry 7 }

ibmappnNodeLsStatusNofRetry OBJECT-TYPE

SYNTAX INTEGER {
 retry(1),
 noretry(2)
}

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Indicates whether Node Operator Facility will retry the start request to activate the link."

::= { ibmappnNodeLsStatusEntry 8 }

ibmappnNodeLsStatusEndSense OBJECT-TYPE

SYNTAX OCTET STRING

ACCESS read-only

STATUS mandatory

DESCRIPTION

"The sense code associated with the termination of the link connection to adjacent node. This includes all sense information included in the disconnect received from the lower layer DLCs and also sense information indicating the link termination originated by upper layer APPN components."

::= { ibmappnNodeLsStatusEntry 9 }

ibmappnNodeLsStatusXidLocalSense OBJECT-TYPE

SYNTAX OCTET STRING

ACCESS read-only

STATUS mandatory

DESCRIPTION

"The error sense code associated with the rejection of the

XID."

::= { ibmappnNodeLsStatusEntry 10 }

ibmappnNodeLsStatusXidRemoteSense OBJECT-TYPE

SYNTAX OCTET STRING

ACCESS read-only

STATUS mandatory

DESCRIPTION

"The error sense code adjacent node returned to this node indicating the reason the XID was rejected."

::= { ibmappnNodeLsStatusEntry 11 }

ibmappnNodeLsStatusXidByteInError OBJECT-TYPE

SYNTAX INTEGER {
na(1000)
}

ACCESS read-only

STATUS mandatory

DESCRIPTION

"This identifies the actual byte in the XID that caused the error. The value of zero (0) indicates that the variable has no meaning."

::= { ibmappnNodeLsStatusEntry 12 }

ibmappnNodeLsStatusXidBitInError OBJECT-TYPE

SYNTAX INTEGER {
na(8) -- not applicable
}

ACCESS read-only

STATUS mandatory

DESCRIPTION

"This identifies the actual bit within the error byte of the XID. This only has meaning when the byte in error is greater than zero."

::= { ibmappnNodeLsStatusEntry 13 }

ibmappnNodeLsStatusDlcType OBJECT-TYPE

SYNTAX INTEGER {
other(1),
sdlc(2),
dls(3),
socket(4),
ethernet(5),
tr(6)
}

```

    }
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "This identifies DLC type that was being used when error
    occurred. This also is used to the format of the
    local and remote address provided.

    other      = free form DisplayString

    ip         = ld. ld. ld. ld / 2d

    tr         = lx: lx: lx: lx: lx: lx . lx

    dlsw       = lx: lx: lx: lx: lx: lx . lx

    ethernet   = lx: lx: lx: lx: lx: lx . lx

    "
 ::= { ibmappnNodeLsStatusEntry 14 }

ibmappnNodeLsStatusLocalAddr OBJECT-TYPE
SYNTAX DisplayString
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "This contains a displayable string that identifies the
    DLC type and appropriate address. See DlcType above for
    details of the format."
 ::= { ibmappnNodeLsStatusEntry 15 }

ibmappnNodeLsStatusRemoteAddr OBJECT-TYPE
SYNTAX DisplayString
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "This contains a displayable string that identifies the
    DLC type and appropriate address. See DlcType above for
    details of the format."
 ::= { ibmappnNodeLsStatusEntry 16 }

-- *****
-- APPN SNMP Performance Information

```

--

```
ibmappnSnmpInPkts OBJECT-TYPE
    SYNTAX Counter
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Total number of messages delivered to the APPN SNMP sub-agent."

    ::= { ibmappnSnmpInformation 1 }

ibmappnSnmpInGetRequests OBJECT-TYPE
    SYNTAX Counter
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Total number of GET requests delivered to the APPN SNMP
        sub-agent."

    ::= { ibmappnSnmpInformation 2 }

ibmappnSnmpInGetNexts OBJECT-TYPE
    SYNTAX Counter
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Total number of GETNEXT requests delivered to the APPN SNMP
        sub-agent."

    ::= { ibmappnSnmpInformation 3 }

ibmappnSnmpInSetRequests OBJECT-TYPE
    SYNTAX Counter
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Total number of SET requests delivered to the APPN SNMP
        sub-agent."

    ::= { ibmappnSnmpInformation 4 }

ibmappnSnmpInTotalVars OBJECT-TYPE
    SYNTAX Counter
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Total number of VARIABLES included in both
        GET and GETNEXT requests to the APPN SNMP sub-agent."
```

```
::= { ibmappnSnmpInformation 5 }
```

```
ibmappnSnmpInGetVars OBJECT-TYPE
```

```
SYNTAX Counter
```

```
ACCESS read-only
```

```
STATUS mandatory
```

```
DESCRIPTION
```

```
"Total number of VARIABLES included in all  
GET requests to the APPN SNMP sub-agent."
```

```
::= { ibmappnSnmpInformation 6 }
```

```
ibmappnSnmpInGetNextVars OBJECT-TYPE
```

```
SYNTAX Counter
```

```
ACCESS read-only
```

```
STATUS mandatory
```

```
DESCRIPTION
```

```
"Total number of VARIABLES included in all  
GETNEXT requests to the APPN SNMP sub-agent."
```

```
::= { ibmappnSnmpInformation 7 }
```

```
ibmappnSnmpInSetVars OBJECT-TYPE
```

```
SYNTAX Counter
```

```
ACCESS read-only
```

```
STATUS mandatory
```

```
DESCRIPTION
```

```
"Total number of VARIABLES included in all  
SET requests to the APPN SNMP sub-agent."
```

```
::= { ibmappnSnmpInformation 8 }
```

```
ibmappnSnmpOutNoSuchNames OBJECT-TYPE
```

```
SYNTAX Counter
```

```
ACCESS read-only
```

```
STATUS mandatory
```

```
DESCRIPTION
```

```
"Total number of VARIABLES that could not  
be found by the APPN SNMP sub-agent."
```

```
::= { ibmappnSnmpInformation 9 }
```

```
ibmappnSnmpOutGenErrs OBJECT-TYPE
```

```
SYNTAX Counter
```

```
ACCESS read-only
```

```
STATUS mandatory
```

```
DESCRIPTION
```

```
"Total number of undefined errors that
```


occurred processing SNMP request to the
APPN SNMP sub-agent."

```
::= { ibmappnSnmpInformation 10 }
```

```
-- *****
```

```
-- This group provides global information about the  
-- APPN node performance.
```

```
-- The first section applies to the APPN control point  
-- storage utilization.
```

```
ibmappnMemorySize OBJECT-TYPE
```

```
SYNTAX INTEGER
```

```
ACCESS read-only
```

```
STATUS mandatory
```

```
DESCRIPTION
```

```
"Size of the shared storage segment, as obtained  
by storage management from the underlying operating  
system."
```

```
::= { ibmappnMemoryUse 1 }
```

```
ibmappnMemoryUsed OBJECT-TYPE
```

```
SYNTAX INTEGER
```

```
ACCESS read-only
```

```
STATUS mandatory
```

```
DESCRIPTION
```

```
"Number of bytes in the segment that are currently  
allocated to process."
```

```
::= { ibmappnMemoryUse 2 }
```

```
ibmappnMemoryWarnThresh OBJECT-TYPE
```

```
SYNTAX INTEGER
```

```
ACCESS read-only
```

```
STATUS mandatory
```

```
DESCRIPTION
```

```
"Allocation threshold beyond which storage  
management considers the storage resources  
to be constrained."
```

```
::= { ibmappnMemoryUse 3 }
```

```
ibmappnMemoryCritThresh OBJECT-TYPE
```

```

SYNTAX INTEGER
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "Allocation threshold beyond which storage
    management considers the storage resources
    to be critically constrained."

```

```
 ::= { ibmappnMemoryUse 4 }
```

```

-- *****
-- The following are Counters maintained by the APPN CS component that
-- relate to total overall XID activity.
-----

```

```

ibmappnNodeDefLsGoodXids      OBJECT-TYPE
    SYNTAX Counter
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "The current number of successfull XIDs that have occurred
        on all defined link stations since the last time this
        node was initialized."

```

```
 ::= { ibmappnXidInformation 1 }
```

```

ibmappnNodeDefLsBadXids      OBJECT-TYPE
    SYNTAX Counter
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "The current number of unsuccessfull XIDs that have
        occurred on all defined link stations since the last
        time this node was initialized."

```

```
 ::= { ibmappnXidInformation 2 }
```

```

ibmappnNodeDynLsGoodXids     OBJECT-TYPE
    SYNTAX Counter
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "The current number of successfull XIDs that have
        occurred on all dynamic link stations since the last
        time this node was initialized."

```

```
 ::= { ibmappnXidInformation 3 }
```

```

ibmappnNodeDynLsBadXids      OBJECT-TYPE
    SYNTAX Counter
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "The current number of unsuccessfull XIDs that have
        occurred on all dynamic link stations since the last
        time this node was initialized."

 ::= { ibmappnXidInformation 4 }

-- ***** The APPN Topology Group *****

ibmappnNn                     OBJECT IDENTIFIER ::= { ibmappn 2 }
ibmappnNnTopo                 OBJECT IDENTIFIER ::= { ibmappnNn 1 }
ibmappnNnTopology            OBJECT IDENTIFIER ::= { ibmappnNn 3 }

-- This group will be used to represent the entire APPN network
-- topology, including Network nodes, virtual nodes and
-- all TGs associated with these nodes.
--
-- Network nodes
-- The APPN topology database consists of information about every
-- APPN network node. This information is learned over time
-- as each network node exchanges topology information with
-- each of its adjacent network nodes. The database consists
-- of information about each node and all of the transmissions
-- groups used by each node.
--
-- Virtual nodes
-- Information about virtual nodes (connection networks) is treated
-- the same as information about network node
-- and is replicated at each network node.
-- The node name is the only meaningful information. The other
-- node objects use default values. Each node that has defined
-- a TG with this virtual node as the destination also defines a
-- TG on this virtual node. There is a TG record for each node
-- that uses this virtual node.
--
-- The APPN node table represents the APPN topology
-- database with the APPN CP fully-qualified name
-- being used as the index to this table.
-- This entire table could be retrieved using the GET NEXT command,

```

```
-- however, due to the dynamics of APPN, nodes could come and
-- go and status could change as the table is being
-- retrieved. Although in most cases the data retrieved will be valid,
-- missing and invalid status could cause problems for
-- a management application that was graphically displaying
-- this data.
-- This potential problem can be eliminated by
-- retrieving the FRSN before and after completion
-- of retrieval of the APPN topology table.
-- If the FRSN has changed, then repeat the
-- retrieval of the entire topology table
-- until the FRSN remains unchanged.
-- Object 'appnNnFrsn' represents the last
-- change or update to this node's topology
-- database.
--
--
-- The format of the actual database is as follows:
--
-- Node table (entry for each node in network)
-- TG table (entry for each TG owned by node)
--
-- Due to SNMP ASN.1 limitations, we cannot represent
-- the TG table within the node table. We define
-- separate tables for nodes and TGs, adding the node
-- name to each TG entry to provide a means of
-- correlating each TG with its originating node.
```

```
ibmappnNnTopoMaxNodes OBJECT-TYPE
    SYNTAX INTEGER
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Maximum number of nodes allowed in the APPN topology
        database. This administratively assigned value must be
        equal to or greater than the maximum total number of end
        nodes and network nodes.
        If the number of nodes exceeds this value, APPN will issue
        an Alert and the node can no longer participate as a network
        node."

    ::= { ibmappnNnTopo 1 }

ibmappnNnTopoCurNumNodes OBJECT-TYPE
    SYNTAX Gauge
    ACCESS read-only
```

STATUS mandatory

DESCRIPTION

"Current number of nodes in this node's topology database. If this value exceeds the maximum number of nodes allowed (NnTopoMaxNodes), APPN alert CPDB002 is issued."

::= { ibmappnNnTopo 2 }

ibmappnNnTopoInTdus OBJECT-TYPE

SYNTAX Counter

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Total number of TDUs received from all adjacent NN since last initialization."

::= { ibmappnNnTopo 3 }

ibmappnNnTopoOutTdus OBJECT-TYPE

SYNTAX Counter

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Total number of TDUs built by this node to be sent to all adjacent NN since last initialization."

::= { ibmappnNnTopo 4 }

ibmappnNnTopoNodeLowRsns OBJECT-TYPE

SYNTAX Counter

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Total number of topology node updates received by this node with a RSN less than the current RSN. Both even and odd RSN are included in this count. These TDUs are not errors, but result when TDUs are broadcast to all adjacent network nodes. No update to this node's topology database occurs, but this node will send a TDU with it's higher RSN to the adjacent node that sent this low RSN."

::= { ibmappnNnTopo 5 }

ibmappnNnTopoNodeEqualRsns OBJECT-TYPE

SYNTAX Counter

ACCESS read-only

STATUS mandatory
DESCRIPTION

"Total number of topology node updates received by this node with a RSN equal to the current RSN. Both even and odd RSN are included in this count. These TDUs are not errors, but result when TDUs are broadcast to all adjacent network nodes. No update to this node's topology database occurs."

::= { ibmappnNnTopo 6 }

ibmappnNnTopoNodeGoodHighRsns OBJECT-TYPE

SYNTAX Counter
ACCESS read-only
STATUS mandatory
DESCRIPTION

"Total number of topology node updates received by this node with a RSN greater than the current RSN. This results in updating this nodes topology and broadcasting a TDU to all adjacent network nodes. It is not required to send a TDU to the sender of this update because that node already has the update."

::= { ibmappnNnTopo 7 }

ibmappnNnTopoNodeBadHighRsns OBJECT-TYPE

SYNTAX Counter
ACCESS read-only
STATUS mandatory
DESCRIPTION

"Total number of topology node updates received by this node with an odd RSN greater than the current RSN. These updates represent a topology inconsistency detected by one of the APPN network nodes. This results in updating this nodes topology and broadcasting a TDU to all adjacent network nodes."

::= { ibmappnNnTopo 8 }

ibmappnNnTopoNodeStateUpdates OBJECT-TYPE

SYNTAX Counter
ACCESS read-only
STATUS mandatory
DESCRIPTION

"Total number of topology Node records built as a result

of internally detected node state changes that affect APPN topology and routing. Updates are sent via TDUs to all adjacent network nodes."

::= { ibmappnNnTopo 9 }

ibmappnNnTopoNodeErrors OBJECT-TYPE

SYNTAX Counter

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Total number of topology node records inconsistencies detected by this node. This occurs when this node attempts to update its topology database and detects a data inconsistency. This node will create a TDU with the current RSN incremented to the next odd number and broadcast it to all adjacent NNs."

::= { ibmappnNnTopo 10 }

ibmappnNnTopoNodeTimerUpdates OBJECT-TYPE

SYNTAX Counter

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Total number of topology node records built for this node's resource due to timer updates. Updates are sent via TDUs to all adjacent network nodes. These updates insure other network nodes do not delete this node's resources from their topology database."

::= { ibmappnNnTopo 11 }

ibmappnNnTopoNodePurges OBJECT-TYPE

SYNTAX Counter

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Total number of topology node records purged from this node's topology database. This occurs when a node has not been updated in a specified amount of time. The owning node is responsible for broadcasting updates for its resource that it wants kept in the network topology."

::= { ibmappnNnTopo 12 }

ibmappnNnTopoTgLowRsns OBJECT-TYPE

SYNTAX Counter
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION

"Total number of topology TG updates received by this node with a RSN less than the current RSN. Both even and odd RSN are included in this count. These TDUs are not errors, but result when TDUs are broadcast to all adjacent network nodes. No update to this node's topology database occurs, but this node will send a TDU with it's higher RSN to the sender of the low RSN."

::= { ibmappnNnTopo 13 }

ibmappnNnTopoTgEqualRsns OBJECT-TYPE

SYNTAX Counter
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION

"Total number of topology TG updates received by this node with a RSN equal to the current RSN. Both even and odd RSN are included in this count. These TDUs are not errors, but result when TDUs are broadcast to all adjacent network nodes. No update to this node's topology database occurs."

::= { ibmappnNnTopo 14 }

ibmappnNnTopoTgGoodHighRsns OBJECT-TYPE

SYNTAX Counter
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION

"Total number of topology TG updates received by this node with a RSN greater than the current RSN. This results in updating this nodes topology and broadcasting the update to all adjacent network nodes."

::= { ibmappnNnTopo 15 }

ibmappnNnTopoTgBadHighRsns OBJECT-TYPE

SYNTAX Counter
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION

"Total number of topology TG updates received by this

node with an odd RSN greater than the current RSN. These updates represent a topology inconsistency detected by one of the APPN network nodes. This results in updating this nodes topology and broadcasting a TDU to all adjacent network nodes."

```
::= { ibmappnNnTopo 16 }
```

```
ibmappnNnTopoTgStateUpdates OBJECT-TYPE
```

```
SYNTAX Counter
```

```
ACCESS read-only
```

```
STATUS mandatory
```

```
DESCRIPTION
```

"Total number of topology TG records built as a result of internally detected node state changes that affect APPN topology and routing. Updates are sent via TDUs to all adjacent network nodes."

```
::= { ibmappnNnTopo 17 }
```

```
ibmappnNnTopoTgErrors OBJECT-TYPE
```

```
SYNTAX Counter
```

```
ACCESS read-only
```

```
STATUS mandatory
```

```
DESCRIPTION
```

"Total number of topology TG records inconsistencies detected by this node. This occurs when this node attempts to update its topology database and detects a data inconsistency. This node will create a TDU with the current RSN incremented to the next odd number and broadcast it to all adjacent NNS."

```
::= { ibmappnNnTopo 18 }
```

```
ibmappnNnTopoTgTimerUpdates OBJECT-TYPE
```

```
SYNTAX Counter
```

```
ACCESS read-only
```

```
STATUS mandatory
```

```
DESCRIPTION
```

"Total number of topology TG records built for this node's resource due to timer updates. Updates are sent via TDUs to all adjacent network nodes. These updates insure other network nodes do not delete this node's resources from their topology database."

```
::= { ibmappnNnTopo 19 }
```

```

ibmappnNnTopoTgPurges      OBJECT-TYPE
    SYNTAX Counter
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Total number of topology TG records purged from this
        node's topology database. This occurs when a TG has not
        been updated in a specified amount of time. The owning
        node is responsible for broadcasting updates for its
        resource that it wants to keep in the network topology."

 ::= { ibmappnNnTopo 20 }

```

```

ibmappnNnTopoTotalRouteCalcs OBJECT-TYPE
    SYNTAX Counter
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Number of routes calculated for all class of services
        since the last initialization."

 ::= { ibmappnNnTopo 21 }

```

```

ibmappnNnTopoTotalRouteRejs OBJECT-TYPE
    SYNTAX Counter
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Number of route requests for all class of services that
        could not be calculated since last initialization."

 ::= { ibmappnNnTopo 22 }

```

```

ibmappnNnTopoRouteTable OBJECT-TYPE
    SYNTAX SEQUENCE OF IbmapppNnTopoRouteEntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION
        "Table containing an entry for every Class of Service
        that it has calculated a route for."

 ::= { ibmappnNnTopo 23 }

```

```

ibmappnNnTopoRouteEntry OBJECT-TYPE

```

```

SYNTAX IbmappnNnTopoRouteEntry
ACCESS not-accessible
STATUS mandatory
DESCRIPTION
    "The Class of Service name is the index for this table."

```

```

INDEX
    {ibmappnNnTopoRouteCos}

 ::= { ibmappnNnTopoRouteTable 1 }

```

```

IbmappnNnTopoRouteEntry ::= SEQUENCE {
    ibmappnNnTopoRouteCos          DisplayString,
    ibmappnNnTopoRouteTrees       Counter,
    ibmappnNnTopoRouteCalcs       Counter,
    ibmappnNnTopoRouteRejs        Counter
}

```

```

ibmappnNnTopoRouteCos OBJECT-TYPE
    SYNTAX DisplayString
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "The Class of Service for the route."

 ::= { ibmappnNnTopoRouteEntry 1 }

```

```

ibmappnNnTopoRouteTrees OBJECT-TYPE
    SYNTAX Counter
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Number of routes tree caches built for this Class of
        Service since the last initialization."

 ::= { ibmappnNnTopoRouteEntry 2 }

```

```

ibmappnNnTopoRouteCalcs OBJECT-TYPE
    SYNTAX Counter
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Number of routes calculated since last initialization."

 ::= { ibmappnNnTopoRouteEntry 3 }

```

```

ibmappnNnTopoRouteRejs OBJECT-TYPE
    SYNTAX Counter
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Number of route requests that could not
        be calculated since last initialization."

 ::= { ibmappnNnTopoRouteEntry 4 }

--Adjacent node table
-- Node name (only applies to adjacent nodes)
-- Number of out of sequence TDUs
-- Status of CP-CP sessions (ConWinner/ConLoser)
-- Last FRSN sent
-- Last FRSN received

ibmappnNnAdjNodeTable OBJECT-TYPE
    SYNTAX SEQUENCE OF IbmapppnNnAdjNodeEntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION
        "Table containing an entry for every node. The information
        kept in this table is the last FRSN sent and received,
        the status of the CP-CP sessions, and a gauge that
        indicates the number of outstanding TDUs."

 ::= { ibmappnNn 2 }

ibmappnNnAdjNodeEntry OBJECT-TYPE
    SYNTAX IbmapppnNnAdjNodeEntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION
        "The adjacent node name is the index for this table."

    INDEX
        {ibmappnNnAdjNodeAdjName}

 ::= { ibmappnNnAdjNodeTable 1 }

IbmapppnNnAdjNodeEntry ::= SEQUENCE {
    ibmappnNnAdjNodeAdjName          DisplayString,
    ibmappnNnAdjNodeCpCpSessStatus  INTEGER,
    ibmappnNnAdjNodeOutOfSeqTdus    Gauge,

```

```

    ibmappnNnAdjNodeLastFrnsSent      INTEGER,
    ibmappnNnAdjNodeLastFrnsRcvd     INTEGER
    }

```

```

ibmappnNnAdjNodeAdjName      OBJECT-TYPE
    SYNTAX DisplayString (SIZE (3..17))
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "An administratively-assigned fully-qualified
         name of this node's adjacent network node."

 ::= { ibmappnNnAdjNodeEntry 1 }

```

```

ibmappnNnAdjNodeCpCpSessStatus  OBJECT-TYPE
    SYNTAX INTEGER {
        active(1),
        conLoserActive(2),
        conWinnerActive(3),
        inactive(4)
    }
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Indicates the state of CP-CP sessions between this node
         and adjacent network and end nodes. Inactive indicates no
         CP-CP sessions exists between this node and the adjacent
         node. Active indicates CP-CP sessions are active using both
         the ConWinner and ConLoser sessions. The session initiated
         by this node is referred to as the ConWinner session and is
         used by this node to send to the adjacent node. The
         ConLoserr session is initiated by the adjacent node and
         is used by this node to receive from the adjacent node."

 ::= { ibmappnNnAdjNodeEntry 2 }

```

```

ibmappnNnAdjNodeOutOfSeqTdus  OBJECT-TYPE
    SYNTAX Gauge
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Number of out of sequence Topology Database
         Updates (TDUs). In a quiesced state, this value is
         zero. In normal operation, the value varies
         depending on the network environment."

 ::= { ibmappnNnAdjNodeEntry 3 }

```

```

ibmappnNnAdjNodeLastFrnsSent OBJECT-TYPE
    SYNTAX INTEGER (0..65535)
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Flow reduction sequence numbers (FRSNs) are associated
        with Topology Database Updates (TDUs) and are unique
        only within each APPN network node.  A TDU can be
        associated with multiple APPN resources.  This FRSN
        indicates the last TDU sent to this adjacent node."

 ::= { ibmappnNnAdjNodeEntry 4 }

ibmappnNnAdjNodeLastFrnsRcvd OBJECT-TYPE
    SYNTAX INTEGER (0..65535)
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Flow reduction sequence numbers (FRSNs) are associated
        with Topology Database Updates (TDUs) and are unique
        only within each APPN network node.  A TDU can be
        associated with multiple APPN resources.  This FRSN
        indicates the last TDU received from this adjacent node."

 ::= { ibmappnNnAdjNodeEntry 5 }

--APPN Node Topology table

-- This table describes every known APPN Network node
-- and Virtual node.

ibmappnNnTopologyTable OBJECT-TYPE
    SYNTAX SEQUENCE OF IbmappnNnTopologyEntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION
        "Portion of the APPN routing table
        that describes all of the APPN network nodes
        and virtual nodes known to this node."

 ::= { ibmappnNnTopology 1 }

ibmappnNnTopologyEntry OBJECT-TYPE
    SYNTAX IbmappnNnTopologyEntry
    ACCESS not-accessible
    STATUS mandatory

```

DESCRIPTION

"The fully-qualified node name is used to index this table."

INDEX

{ibmappnNnNodeName}

::= { ibmappnNnTopologyTable 1 }

IbmappnNnTopologyEntry ::= SEQUENCE {

ibmappnNnNodeName	DisplayString,
ibmappnNnNodeFrnsn	INTEGER,
ibmappnNnNodeEntryTimeLeft	INTEGER,
ibmappnNnNodeType	INTEGER,
ibmappnNnNodeRsn	INTEGER,
ibmappnNnNodeRouteAddResist	INTEGER,
ibmappnNnNodeCongested	INTEGER,
ibmappnNnNodeIsrDepleted	INTEGER,
ibmappnNnNodeEndptDepleted	INTEGER,
ibmappnNnNodeQuiescing	INTEGER,
ibmappnNnNodeGateway	INTEGER,
ibmappnNnNodeCentralDirectory	INTEGER,
ibmappnNnNodeIsr	INTEGER,
ibmappnNnNodeChainSupport	INTEGER

}

ibmappnNnNodeName OBJECT-TYPE

SYNTAX DisplayString (SIZE (3..17))

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Administratively-assigned network name that is locally defined at each network node in the format NETID.CPNAME."

::= { ibmappnNnTopologyEntry 1 }

ibmappnNnNodeFrnsn OBJECT-TYPE

SYNTAX INTEGER (0..65535)

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Flow reduction sequence numbers (FRSNs) are associated with Topology Database Updates (TDUs) and are unique only within each APPN network node. A TDU can be associated with multiple APPN resources. This FRSN indicates the last time this resource was updated at

this node."

::= { ibmappnNnTopologyEntry 2 }

ibmappnNnNodeEntryTimeLeft OBJECT-TYPE
 SYNTAX INTEGER (0..31)
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Number of days before deletion of this
 network node entry. Range is 0-31."

::= { ibmappnNnTopologyEntry 3 }

ibmappnNnNodeType OBJECT-TYPE
 SYNTAX INTEGER {
 networknode(1),
 virtualnode(3)
 }
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Type of APPN node."

::= { ibmappnNnTopologyEntry 4 }

ibmappnNnNodeRsn OBJECT-TYPE
 SYNTAX INTEGER
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Resource sequence number that is assigned and
 controlled by the network node that owns this
 resource. This is always an even 32-bit number
 unless an error has occurred."

::= { ibmappnNnTopologyEntry 5 }

ibmappnNnNodeRouteAddResist OBJECT-TYPE
 SYNTAX INTEGER
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Route addition resistance
 indicates the relative desirability
 of using this node for intermediate session traffic.
 The value, which can be any integer 0-255,
 is used in route computation. The lower the value,

the more desirable the node is for intermediate routing."

::= { ibmappnNnTopologyEntry 6 }

ibmappnNnNodeCongested OBJECT-TYPE
 SYNTAX INTEGER {yes(1), no(2)}
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Indicates whether this node is congested.
 This node is not be included in route selection
 by other nodes when this congestion exists."

::= { ibmappnNnTopologyEntry 7 }

ibmappnNnNodeIsrDepleted OBJECT-TYPE
 SYNTAX INTEGER {yes(1), no(2)}
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Indicates whether intermediate session
 routing resources are depleted. This node is
 not included in intermediate route selection
 by other nodes when resources are depleted."

::= { ibmappnNnTopologyEntry 8 }

ibmappnNnNodeEndptDepleted OBJECT-TYPE
 SYNTAX INTEGER {yes(1), no(2)}
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Indicates whether session endpoint resources are depleted."

::= { ibmappnNnTopologyEntry 9 }

ibmappnNnNodeQuiescing OBJECT-TYPE
 SYNTAX INTEGER {yes(1), no(2)}
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Indicates whether the node is quiescing.
 This node is not included in route selection
 by other nodes when the node is quiescing."

::= { ibmappnNnTopologyEntry 10 }

ibmappnNnNodeGateway OBJECT-TYPE

```

SYNTAX INTEGER {yes(1), no(2)}
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "Indicates whether the node provide gateway functions."

```

```
 ::= { ibmappnNnTopologyEntry 11 }
```

```
ibmappnNnNodeCentralDirectory OBJECT-TYPE
```

```

SYNTAX INTEGER {yes(1), no(2)}
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "Indicates whether the node is central directory."

```

```
 ::= { ibmappnNnTopologyEntry 12 }
```

```
ibmappnNnNodeIsr OBJECT-TYPE
```

```

SYNTAX INTEGER {yes(1), no(2)}
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "Indicates whether the node supports intermediate session
    routing (ISR)."

```

```
 ::= { ibmappnNnTopologyEntry 13 }
```

```
ibmappnNnNodeChainSupport OBJECT-TYPE
```

```

SYNTAX INTEGER {yes(1), no(2)}
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "Indicates whether the node supports chaining."

```

```
 ::= { ibmappnNnTopologyEntry 14 }
```

```
--APPN transmission group (TG) table
```

```

-- This table describes the TGs associated with
-- the APPN network nodes.
-- The originating node is repeated here to provide a
-- means of correlating the TGs with the nodes.

```

```
ibmappnNnTgTopologyTable OBJECT-TYPE
```

```

SYNTAX SEQUENCE OF IbmapppnNnTgTopologyEntry
ACCESS not-accessible

```

STATUS mandatory
DESCRIPTION

"Portion of the APPN topology database that describes all of the APPN transmissions groups used by the APPN network nodes."

::= { ibmappnNnTopology 2 }

ibmappnNnTgTopologyEntry OBJECT-TYPE

SYNTAX IbmappnNnTgTopologyEntry
ACCESS not-accessible
STATUS mandatory
DESCRIPTION

"This table requires three indexes to provide a unique index. The indexes are the owning or originating CPname, the destination CPname, and the TG number."

INDEX

{ ibmappnNnTgOwner,
ibmappnNnTgDest,
ibmappnNnTgNum }

::= { ibmappnNnTgTopologyTable 1 }

IbmappnNnTgTopologyEntry ::= SEQUENCE {

ibmappnNnTgOwner DisplayString,
ibmappnNnTgDest DisplayString,
ibmappnNnTgNum INTEGER,
ibmappnNnTgFrnsn INTEGER,
ibmappnNnTgEntryTimeLeft INTEGER,

ibmappnNnTgDestVirtual INTEGER,
ibmappnNnTgDlcData OCTET STRING,

ibmappnNnTgRsn INTEGER,
ibmappnNnTgOperational INTEGER,
ibmappnNnTgQuiescing INTEGER,
ibmappnNnTgCpCpSession INTEGER,
ibmappnNnTgEffCap INTEGER,
ibmappnNnTgConnCost INTEGER,
ibmappnNnTgByteCost INTEGER,
ibmappnNnTgSecurity INTEGER,
ibmappnNnTgDelay INTEGER,
ibmappnNnTgModemClass INTEGER,
ibmappnNnTgUsr1 INTEGER,
ibmappnNnTgUsr2 INTEGER,
ibmappnNnTgUsr3 INTEGER }

```

ibmappnNnTgOwner OBJECT-TYPE
    SYNTAX DisplayString (SIZE (3..17))
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Administratively-assigned name for the
        originating node for this TG. The format
        is NETID.CPNAME and is the same name
        specified in the node table."

 ::= { ibmappnNnTgTopologyEntry 1 }

ibmappnNnTgDest OBJECT-TYPE
    SYNTAX DisplayString (SIZE (3..17))
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Administratively-assigned fully-qualified
        network name for the destination node for this TG."

 ::= { ibmappnNnTgTopologyEntry 2 }

ibmappnNnTgNum OBJECT-TYPE
    SYNTAX INTEGER (0..255)
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Number associated with this
        transmission group. Range is 0-255."

 ::= { ibmappnNnTgTopologyEntry 3 }

ibmappnNnTgFrsn OBJECT-TYPE
    SYNTAX INTEGER (0..65535)
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Flow reduction sequence numbers (FRSNs) are associated
        with Topology Database Updates (TDUs) and are unique
        only within each APPN network node. A TDU can be
        associated with multiple APPN resources. This FRSN
        indicates the last time this resource was updated at
        this node."

 ::= { ibmappnNnTgTopologyEntry 4 }

ibmappnNnTgEntryTimeLeft OBJECT-TYPE
    SYNTAX INTEGER (0..31)

```

ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Number of days before deletion of this
 network node TG entry. Range is 0-31."

::= { ibmappnNnTgTopologyEntry 5 }

ibmappnNnTgDestVirtual OBJECT-TYPE
 SYNTAX INTEGER {yes(1), no(2)}
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Indicates whether the destination node is
 a virtual node."

::= { ibmappnNnTgTopologyEntry 6 }

ibmappnNnTgDlcData OBJECT-TYPE
 SYNTAX OCTET STRING (SIZE (0..9))
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "DLC specific data related to the link connection
 network.
 Token-Ring - MAC/SAP
 X.25 Switched - dial digits
 X.21 Switched - dial digits
 Circuit Swtch - dial digits"

::= { ibmappnNnTgTopologyEntry 7 }

ibmappnNnTgRsn OBJECT-TYPE
 SYNTAX INTEGER
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Current owning node's resource sequence number
 for this resource."

::= { ibmappnNnTgTopologyEntry 8 }

ibmappnNnTgOperational OBJECT-TYPE
 SYNTAX INTEGER {yes(1), no(2)}
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Indicates whether the transmission group

is operational."

::= { ibmappnNnTgTopologyEntry 9 }

ibmappnNnTgQuiescing OBJECT-TYPE

SYNTAX INTEGER {yes(1), no(2)}

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Indicates whether the transmission group is quiescing."

::= { ibmappnNnTgTopologyEntry 10 }

ibmappnNnTgCpCpSession OBJECT-TYPE

SYNTAX INTEGER {yes(1), no(2)}

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Indicates whether CP-CP sessions are supported on this TG."

::= { ibmappnNnTgTopologyEntry 11 }

ibmappnNnTgEffCap OBJECT-TYPE

SYNTAX INTEGER

ACCESS read-only

STATUS mandatory

DESCRIPTION

"The effective capacity is an integer value that indicates the kilo bits per second.

It is derived from the link bandwidth and maximum load factor with the range of 0 thru 603,979,776.

This is an administratively assigned value associated with this TG."

::= { ibmappnNnTgTopologyEntry 12 }

ibmappnNnTgConnCost OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Cost per connect time: a value representing the relative cost per unit of time to use the TG. Range is from 0, which means no cost, to 255, which indicates maximum cost.

This is an administratively assigned value associated

with this TG."

::= { ibmappnNnTgTopologyEntry 13 }

ibmappnNnTgByteCost OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Relative cost of transmitting a byte over this link.

Range is from 0 (lowest cost) to 255.

This is an administratively assigned value associated with this TG."

::= { ibmappnNnTgTopologyEntry 14 }

ibmappnNnTgSecurity OBJECT-TYPE

SYNTAX INTEGER {

nonsecure(1), --X'01'

publicSwitchedNetwork(32), --X'20'

undergroundCable(64), --X'40'

secureConduit(96), --X'60'

guardedConduit(128), --X'80'

encrypted(160), --X'A0'

guardedRadiation(192) --X'C0'

}

ACCESS read-only

STATUS mandatory

DESCRIPTION

"The security is represented as an integer with a range of 1 thru 255 with the most common values enumerated as defined above.

This is an administratively assigned value associated with this TG."

::= { ibmappnNnTgTopologyEntry 15 }

ibmappnNnTgDelay OBJECT-TYPE

SYNTAX INTEGER {

minimum(0), --X'00'

negligible(384), --X'4C'

terrestrial(9216), --X'71'

packet(147456), --X'91'

long(294912), --X'99'

maximum(2013265920) --X'FF'

}

ACCESS read-only

STATUS mandatory
DESCRIPTION

"Relative amount of time that it takes for a signal to travel the length of the logical link. This time is represented in micro seconds, with some of the more common values enumerated.
This is an administratively assigned value associated with this TG."

::= { ibmappnNnTgTopologyEntry 16 }

ibmappnNnTgModemClass OBJECT-TYPE

SYNTAX INTEGER (0..65535)

ACCESS read-only

STATUS mandatory

DESCRIPTION

"This is used to have multiple images for a connection network. For a connection network it is the same as in the TG vector; for a non-connection network it is X'00'."

::= { ibmappnNnTgTopologyEntry 17 }

ibmappnNnTgUsr1 OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION

"First user-defined TG characteristic for this TG with a range of 0-255.
This is an administratively assigned value associated with this TG."

::= { ibmappnNnTgTopologyEntry 18 }

ibmappnNnTgUsr2 OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Second user-defined TG characteristic for this TG with a range of 0-255.
This is an administratively assigned value associated with this TG."

::= { ibmappnNnTgTopologyEntry 19 }


```

ibmappnNnTgUsr3 OBJECT-TYPE
    SYNTAX INTEGER (0..255)
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Third user-defined TG characteristic for this TG with
        a range of 0-255.
        This is an administratively assigned value associated
        with this TG."

 ::= { ibmappnNnTgTopologyEntry 20 }

```

```
--APPN Node Topology table (using FRSN as index)
```

```
-- This table describes every known APPN Network node
-- and Virtual node.
```

```

ibmappnNnTopologyFRTable OBJECT-TYPE
    SYNTAX SEQUENCE OF IbmappnNnTopologyFREntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION
        "Portion of the APPN routing table
        that describes all of the APPN network nodes
        and virtual nodes known to this node."

 ::= { ibmappnNnTopology 3 }

```

```

ibmappnNnTopologyFREntry OBJECT-TYPE
    SYNTAX IbmappnNnTopologyFREntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION
        "This table is indexed by two columns:
        FRSN, followed by fully-qualified node name."

    INDEX
        { ibmappnNnNodeFRFrsn,
          ibmappnNnNodeFRName }

 ::= { ibmappnNnTopologyFRTable 1 }

```

```

IbmappnNnTopologyFREntry ::= SEQUENCE {
    ibmappnNnNodeFRName          DisplayString,
    ibmappnNnNodeFRFrsn         INTEGER,
    ibmappnNnNodeFREntryTimeLeft INTEGER,
}

```

```

    ibmappnNnNodeFRType                INTEGER,

    ibmappnNnNodeFRRsn                 INTEGER,
    ibmappnNnNodeFRRouteAddResist      INTEGER,
    ibmappnNnNodeFRCongested           INTEGER,
    ibmappnNnNodeFRIsrDepleted         INTEGER,
    ibmappnNnNodeFREndptDepleted       INTEGER,
    ibmappnNnNodeFRQuiescing           INTEGER,
    ibmappnNnNodeFRGateway             INTEGER,
    ibmappnNnNodeFRCentralDirectory    INTEGER,
    ibmappnNnNodeFRIsr                 INTEGER,
    ibmappnNnNodeFRChainSupport        INTEGER
}

ibmappnNnNodeFRName      OBJECT-TYPE
    SYNTAX DisplayString (SIZE (3..17))
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Administratively-assigned network name that is locally
        defined at each network node in the format NETID.CPNAME."

    ::= { ibmappnNnTopologyFREntry 1 }

ibmappnNnNodeFRFrsn      OBJECT-TYPE
    SYNTAX INTEGER (0..65535)
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Flow reduction sequence numbers (FRSNs) are associated
        with Topology Database Updates (TDUs) and are unique
        only within each APPN network node. A TDU can be
        associated with multiple APPN resources. This FRSN
        indicates the last time this resource was updated at
        this node."

    ::= { ibmappnNnTopologyFREntry 2 }

ibmappnNnNodeFREntryTimeLeft  OBJECT-TYPE
    SYNTAX INTEGER (0..31)
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Number of days before deletion of this
        network node entry. Range is 0-31."

    ::= { ibmappnNnTopologyFREntry 3 }

```

```

ibmappnNnNodeFRType      OBJECT-TYPE
    SYNTAX INTEGER {
        networknode(1),
        virtualnode(3)
    }
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Type of APPN node."

 ::= { ibmappnNnTopologyFREntry 4 }

ibmappnNnNodeFRRsn       OBJECT-TYPE
    SYNTAX INTEGER
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Resource sequence number that is assigned and
        controlled by the network node that owns this
        resource. This is always an even 32-bit number
        unless an error has occurred."

 ::= { ibmappnNnTopologyFREntry 5 }

ibmappnNnNodeFRRRouteAddResist  OBJECT-TYPE
    SYNTAX INTEGER
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Route addition resistance
        indicates the relative desirability
        of using this node for intermediate session traffic.
        The value, which can be any integer 0-255,
        is used in route computation.  The lower the value,
        the more desirable the node is for intermediate routing."

 ::= { ibmappnNnTopologyFREntry 6 }

ibmappnNnNodeFRCongested      OBJECT-TYPE
    SYNTAX INTEGER {yes(1), no(2)}
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Indicates whether this node is congested.
        This node is not be included in route selection
        by other nodes when this congestion exists."

 ::= { ibmappnNnTopologyFREntry 7 }

```

```

ibmappnNnNodeFRIsrDepleted OBJECT-TYPE
    SYNTAX INTEGER {yes(1), no(2)}
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Indicates whether intermediate session
        routing resources are depleted. This node is
        not included in intermediate route selection
        by other nodes when resources are depleted."

 ::= { ibmappnNnTopologyFREntry 8 }

ibmappnNnNodeFREndptDepleted OBJECT-TYPE
    SYNTAX INTEGER {yes(1), no(2)}
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Indicates whether session endpoint resources are depleted."

 ::= { ibmappnNnTopologyFREntry 9 }

ibmappnNnNodeFRQuiescing      OBJECT-TYPE
    SYNTAX INTEGER {yes(1), no(2)}
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Indicates whether the node is quiescing.
        This node is not included in route selection
        by other nodes when the node is quiescing."

 ::= { ibmappnNnTopologyFREntry 10 }

ibmappnNnNodeFRGateway      OBJECT-TYPE
    SYNTAX INTEGER {yes(1), no(2)}
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Indicates whether the node provide gateway functions."

 ::= { ibmappnNnTopologyFREntry 11 }

ibmappnNnNodeFRCentralDirectory OBJECT-TYPE
    SYNTAX INTEGER {yes(1), no(2)}
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Indicates whether the node is central directory."

 ::= { ibmappnNnTopologyFREntry 12 }

```

```

ibmappnNnNodeFRIsr OBJECT-TYPE
    SYNTAX INTEGER {yes(1), no(2)}
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Indicates whether the node supports intermediate session
        routing (ISR)."
```

::= { ibmappnNnTopologyFREntry 13 }

```

ibmappnNnNodeFRChainSupport OBJECT-TYPE
    SYNTAX INTEGER {yes(1), no(2)}
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Indicates whether the node supports chaining."
```

::= { ibmappnNnTopologyFREntry 14 }

--APPN transmission group (TG) table

-- This table describes the TGs associated with
-- the APPN network nodes.
-- The originating node is repeated here to provide a
-- means of correlating the TGs with the nodes.

```

ibmappnNnTgTopologyFRTable OBJECT-TYPE
    SYNTAX SEQUENCE OF IbmappnNnTgTopologyFREntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION
        "Portion of the APPN topology database
        that describes all of the APPN transmissions groups
        used by the APPN network nodes."
```

::= { ibmappnNnTopology 4 }

```

ibmappnNnTgTopologyFREntry OBJECT-TYPE
    SYNTAX IbmappnNnTgTopologyFREntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION
        "This table is indexed by four columns:
        FRNSN, TG owner fully-qualified node name,
        TG destination fully-qualified node name, and TG number."
```

INDEX

```

    {ibmappnNnTgFRFrnsn,
      ibmappnNnTgFROwner,
      ibmappnNnTgFRDest,
      ibmappnNnTgFRNum}

```

```
 ::= { ibmappnNnTgTopologyFRTable 1 }
```

```

IbmappnNnTgTopologyFREntry ::= SEQUENCE {

```

```

    ibmappnNnTgFROwner      DisplayString,
    ibmappnNnTgFRDest      DisplayString,
    ibmappnNnTgFRNum       INTEGER,
    ibmappnNnTgFRFrnsn    INTEGER,
    ibmappnNnTgFREntryTimeLeft INTEGER,

```

```

    ibmappnNnTgFRDestVirtual INTEGER,
    ibmappnNnTgFRDlcData   OCTET STRING,

```

```

    ibmappnNnTgFRFrnsn     INTEGER,
    ibmappnNnTgFROperational INTEGER,
    ibmappnNnTgFRQuiescing INTEGER,
    ibmappnNnTgFRCpCpSession INTEGER,
    ibmappnNnTgFREffCap    INTEGER,
    ibmappnNnTgFRConnCost  INTEGER,
    ibmappnNnTgFRByteCost  INTEGER,
    ibmappnNnTgFRSecurity  INTEGER,
    ibmappnNnTgFRDelay     INTEGER,
    ibmappnNnTgFRModemClass INTEGER,
    ibmappnNnTgFRUsr1     INTEGER,
    ibmappnNnTgFRUsr2     INTEGER,
    ibmappnNnTgFRUsr3     INTEGER}

```

```

ibmappnNnTgFROwner OBJECT-TYPE

```

```

    SYNTAX DisplayString (SIZE (3..17))

```

```

    ACCESS read-only

```

```

    STATUS mandatory

```

```

    DESCRIPTION

```

```

        "Administratively-assigned name for the
        originating node for this TG. The format
        is NETID.CPNAME and is the same name
        specified in the node table."

```

```
 ::= { ibmappnNnTgTopologyFREntry 1 }
```

```

ibmappnNnTgFRDest OBJECT-TYPE

```

```

    SYNTAX DisplayString (SIZE (3..17))

```

```

    ACCESS read-only

```

STATUS mandatory
 DESCRIPTION
 "Administratively-assigned fully-qualified
 network name for the destination node for this TG."

::= { ibmappnNnTgTopologyFREntry 2 }

ibmappnNnTgFRNum OBJECT-TYPE
 SYNTAX INTEGER (0..255)
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Number associated with this
 transmission group. Range is 0-255."

::= { ibmappnNnTgTopologyFREntry 3 }

ibmappnNnTgFRFrnsn OBJECT-TYPE
 SYNTAX INTEGER (0..65535)
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Flow reduction sequence numbers (FRSNs) are associated
 with Topology Database Updates (TDUs) and are unique
 only within each APPN network node. A TDU can be
 associated with multiple APPN resources. This FRSN
 indicates the last time this resource was updated at
 this node."

::= { ibmappnNnTgTopologyFREntry 4 }

ibmappnNnTgFREntryTimeLeft OBJECT-TYPE
 SYNTAX INTEGER (0..31)
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Number of days before deletion of this
 network node TG entry. Range is 0-31."

::= { ibmappnNnTgTopologyFREntry 5 }

ibmappnNnTgFRDestVirtual OBJECT-TYPE
 SYNTAX INTEGER {yes(1), no(2)}
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Indicates whether the destination node is
 a virtual node."

```
::= { ibmappnNnTgTopologyFREntry 6 }
```

```
ibmappnNnTgFRDlcData OBJECT-TYPE
    SYNTAX OCTET STRING (SIZE (0..9))
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "DLC specific data related to the link connection
        network.
        Token-Ring      - MAC/SAP
        X.25 Switched - dial digits
        X.21 Switched - dial digits
        Circuit Swtch - dial digits"
```

```
::= { ibmappnNnTgTopologyFREntry 7 }
```

```
ibmappnNnTgFRRsn      OBJECT-TYPE
    SYNTAX INTEGER
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Current owning node's resource sequence number
        for this resource."
```

```
::= { ibmappnNnTgTopologyFREntry 8 }
```

```
ibmappnNnTgFROperational OBJECT-TYPE
    SYNTAX INTEGER {yes(1), no(2)}
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Indicates whether the transmission group
        is operational."
```

```
::= { ibmappnNnTgTopologyFREntry 9 }
```

```
ibmappnNnTgFRQuiescing OBJECT-TYPE
    SYNTAX INTEGER {yes(1), no(2)}
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Indicates whether the transmission group
        is quiescing."
```

```
::= { ibmappnNnTgTopologyFREntry 10 }
```

```
ibmappnNnTgFRCpCpSession OBJECT-TYPE
    SYNTAX INTEGER {yes(1), no(2)}
```


ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Indicates whether CP-CP sessions are supported on this TG."

::= { ibmappnNnTgTopologyFREntry 11 }

ibmappnNnTgFREffCap OBJECT-TYPE
 SYNTAX INTEGER
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "The effective capacity is an integer value that indicates
 the kilo bits per second.
 It is derived from the link bandwidth and maximum load
 factor with the range of 0 thru 603,979,776.
 This is an administratively assigned value associated
 with this TG."

::= { ibmappnNnTgTopologyFREntry 12 }

ibmappnNnTgFRConnCost OBJECT-TYPE
 SYNTAX INTEGER (0..255)
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Cost per connect time: a value representing
 the relative cost per unit of time to use
 the TG. Range is from 0, which means no cost,
 to 255, which indicates maximum cost.
 This is an administratively assigned value associated
 with this TG."

::= { ibmappnNnTgTopologyFREntry 13 }

ibmappnNnTgFRByteCost OBJECT-TYPE
 SYNTAX INTEGER (0..255)
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Relative cost of transmitting a byte over this link.
 Range is from 0 (lowest cost) to 255.
 This is an administratively assigned value associated
 with this TG."

::= { ibmappnNnTgTopologyFREntry 14 }

```

ibmappnNnTgFRSecurity OBJECT-TYPE
    SYNTAX INTEGER {
        nonsecure(1),           --X'01'
        publicSwitchedNetwork(32), --X'20'
        undergroundCable(64),   --X'40'
        secureConduit(96),      --X'60'
        guardedConduit(128),    --X'80'
        encrypted(160),        --X'A0'
        guardedRadiation(192)   --X'C0'
    }
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "The security is represented as an integer with a range of
        1 thru 255 with the most common values enumerated as
        defined above.
        This is an administratively assigned value associated
        with this TG."

 ::= { ibmappnNnTgTopologyFREntry 15 }

```

```

ibmappnNnTgFRDelay OBJECT-TYPE
    SYNTAX INTEGER {
        minimum(0),             --X'00'
        negligible(384),        --X'4C'
        terrestrial(9216),      --X'71'
        packet(147456),         --X'91'
        long(294912),           --X'99'
        maximum(2013265920)     --X'FF'
    }
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Relative amount of time that it takes for a signal to
        travel the length of the logical link. This time is
        represented in micro seconds, with some of the more
        common values enumerated.
        This is an administratively assigned value associated
        with this TG."

 ::= { ibmappnNnTgTopologyFREntry 16 }

```

```

ibmappnNnTgFRModemClass OBJECT-TYPE
    SYNTAX INTEGER (0..65535)
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "This is used to have multiple images for a

```

connection network. For a connection network it is the same as in the TG vector; for a non-connection network it is X'00'."

::= { ibmappnNnTgTopologyFREntry 17 }

ibmappnNnTgFRUsr1 OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION

"First user-defined TG characteristic for this TG with a range of 0-255.

This is an administratively assigned value associated with this TG."

::= { ibmappnNnTgTopologyFREntry 18 }

ibmappnNnTgFRUsr2 OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Second user-defined TG characteristic for this TG with a range of 0-255.

This is an administratively assigned value associated with this TG."

::= { ibmappnNnTgTopologyFREntry 19 }

ibmappnNnTgFRUsr3 OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Third user-defined TG characteristic for this TG with a range of 0-255.

This is an administratively assigned value associated with this TG."

::= { ibmappnNnTgTopologyFREntry 20 }

-- ***** The APPN Local Topology Group *****

ibmappnLocalTopology OBJECT IDENTIFIER ::= { ibmappn 3 }

ibmappnLocalThisNode OBJECT IDENTIFIER ::= { ibmappnLocalTopology 1 }

ibmappnLocalGeneral OBJECT IDENTIFIER ::= { ibmappnLocalThisNode 1 }

```

ibmappnLocalNnSpecific OBJECT IDENTIFIER ::= { ibmappnLocalThisNode 2}
ibmappnLocalTg         OBJECT IDENTIFIER ::= { ibmappnLocalThisNode 3}
ibmappnLocalEnTopology OBJECT IDENTIFIER ::= { ibmappnLocalTopology 2 }

```

```

-- The LocalEnNodeTable and LocalEnTgTable will replace these OIs
--ibmappnLocalEnNode   OBJECT IDENTIFIER ::= { ibmappnLocalEnTopology 1}
--ibmappnLocalEnTg     OBJECT IDENTIFIER ::= { ibmappnLocalEnTopology 2}

```

```

--This MIB Group represents the local topology
--maintained in both APPN end nodes and network nodes.
--Although the same control vectors are used for both network
--and local topology, many of the attributes only apply to network
--nodes. This MIB group defines the required objects for retrieval
--of information about this node and the objects that represent
--the local topology about end nodes.

```

```

--
--This node could be either an network node or an end node. The
--definition must address both cases.

```

```

--
--1 Information about this node
--  a General information about this node, both NN and ENs.
--  b Information about this node that applies only to NNS.
--  c TG table      (repeated for each TG this node owns)
--
--2 Information about the end nodes known to this network node
-- (THIS SECTION ONLY APPLIES TO NETWORK NODES)
--  a End node table (entry for each end node )
--  b TG table      (repeated for each TG owned by the end nodes)

```

```

----
-- General information section

```

```

ibmappnLocalNodeName    OBJECT-TYPE
    SYNTAX DisplayString (SIZE (3..17))
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Administratively-assigned fully-qualified name
        for this node. Format is NETID.CPNAME."

    ::= { ibmappnLocalGeneral 1 }

```

```

ibmappnLocalNodeType    OBJECT-TYPE

```

```

SYNTAX INTEGER {
    networknode(1),
    endnode(2),
    len(4)
}
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "Type of APPN node."

 ::= { ibmappnLocalGeneral 2 }

```

```

-- Network node unique information
--

```

```

ibmappnLocalNnRsn          OBJECT-TYPE
    SYNTAX INTEGER
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Resource sequence number is assigned and
         controlled by the network node that owns this
         resource.  This is always an even unsigned
         number unless an error has occurred."

 ::= { ibmappnLocalNnSpecific 1 }

```

```

ibmappnLocalNnRouteAddResist  OBJECT-TYPE
    SYNTAX INTEGER
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Route addition resistance
         indicates the relative desirability
         of using this node for intermediate session traffic.
         The value, which can be any integer 0-255,
         is used in route computation.  The lower the value,
         the more desirable the node is for intermediate routing."

 ::= { ibmappnLocalNnSpecific 2 }

```

```

ibmappnLocalNnCongested      OBJECT-TYPE
    SYNTAX INTEGER {yes(1), no(2)}
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Indicates whether this node is congested."

```

Other network nodes stop routing traffic to this node while this flag is on."

::= { ibmappnLocalNnSpecific 3 }

ibmappnLocalNnIsrDepleted OBJECT-TYPE

SYNTAX INTEGER {yes(1), no(2)}

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Indicate whether intermediated session routing resources are depleted. Other network nodes stop routing traffic through this node while this flag is on."

::= { ibmappnLocalNnSpecific 4 }

ibmappnLocalNnEndptDepleted OBJECT-TYPE

SYNTAX INTEGER {yes(1), no(2)}

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Indicates whether session endpoint resources are depleted."

::= { ibmappnLocalNnSpecific 5 }

ibmappnLocalNnQuiescing OBJECT-TYPE

SYNTAX INTEGER {yes(1), no(2)}

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Indicates whether the node is quiescing."

::= { ibmappnLocalNnSpecific 6 }

ibmappnLocalNnGateway OBJECT-TYPE

SYNTAX INTEGER {yes(1), no(2)}

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Indicates whether the node is a gateway."

::= { ibmappnLocalNnSpecific 7 }

ibmappnLocalNnCentralDirectory OBJECT-TYPE

SYNTAX INTEGER {yes(1), no(2)}

ACCESS read-only

STATUS mandatory
 DESCRIPTION
 "Indicates whether the node is a central directory."

::= { ibmappnLocalNnSpecific 8 }

ibmappnLocalNnIsr OBJECT-TYPE
 SYNTAX INTEGER {yes(1), no(2)}
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Indicates whether the node supports intermediate
 session routing."

::= { ibmappnLocalNnSpecific 9 }

ibmappnLocalNnChainSupport OBJECT-TYPE
 SYNTAX INTEGER {yes(1), no(2)}
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Indicates whether the node supports chaining."

::= { ibmappnLocalNnSpecific 10 }

ibmappnLocalNnFrsn OBJECT-TYPE
 SYNTAX INTEGER
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Flow reduction sequence numbers (FRSNs) are associated
 with Topology Database Updates (TDUs) and are unique
 only within each APPN network node. A TDU can be
 associated with multiple APPN resources. This object
 is the last FRSN sent in a topology update to
 adjacent network nodes."

::= { ibmappnLocalNnSpecific 11 }

-- Local TG information
 -- APPN Transmission Group (TG) Table

 -- This table describes the TGs associated with
 -- this node only.

ibmappnLocalTgTable OBJECT-TYPE
 SYNTAX SEQUENCE OF IbmappnLocalTgEntry

ACCESS not-accessible
 STATUS mandatory
 DESCRIPTION
 "TG Table describes all of the TGs owned by this
 node. The TG destination can be a virtual
 node, network node, len, or end node."

::= { ibmappnLocalTg 1 }

ibmappnLocalTgEntry OBJECT-TYPE
 SYNTAX IbmappnLocalTgEntry
 ACCESS not-accessible
 STATUS mandatory
 DESCRIPTION
 "This table is indexed by the destination CPname
 and the TG number."

INDEX
 { ibmappnLocalTgDest,
 ibmappnLocalTgNum }

::= { ibmappnLocalTgTable 1 }

IbmappnLocalTgEntry ::= SEQUENCE {
 ibmappnLocalTgDest DisplayString,
 ibmappnLocalTgNum INTEGER,
 ibmappnLocalTgDestVirtual INTEGER,
 ibmappnLocalTgDlcData OCTET STRING,
 ibmappnLocalTgRsn INTEGER,
 ibmappnLocalTgQuiescing INTEGER,
 ibmappnLocalTgOperational INTEGER,
 ibmappnLocalTgCpCpSession INTEGER,
 ibmappnLocalTgEffCap INTEGER,
 ibmappnLocalTgConnCost INTEGER,
 ibmappnLocalTgByteCost INTEGER,
 ibmappnLocalTgSecurity INTEGER,
 ibmappnLocalTgDelay INTEGER,
 ibmappnLocalTgModemClass INTEGER,
 ibmappnLocalTgUsr1 INTEGER,
 ibmappnLocalTgUsr2 INTEGER,
 ibmappnLocalTgUsr3 INTEGER
 }

ibmappnLocalTgDest OBJECT-TYPE
 SYNTAX DisplayString (SIZE (3..17))
 ACCESS read-only

STATUS mandatory
 DESCRIPTION
 "Administratively-assigned name for the destination node for this TG. This is the fully-qualified network node name."

::= { ibmappnLocalTgEntry 1 }

ibmappnLocalTgNum OBJECT-TYPE
 SYNTAX INTEGER
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Number associated with this transmission group."

::= { ibmappnLocalTgEntry 2 }

ibmappnLocalTgDestVirtual OBJECT-TYPE
 SYNTAX INTEGER {yes(1), no(2)}
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Indicates whether the destination node is a Virtual node."

::= { ibmappnLocalTgEntry 3 }

ibmappnLocalTgDlcData OBJECT-TYPE
 SYNTAX OCTET STRING (SIZE (0..9))
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "DLC specific data related to the link connection network.
 Token-Ring - MAC/SAP
 X.25 Switched - dial digits
 X.21 Switched - dial digits
 Circuit Swtch - dial digits"

::= { ibmappnLocalTgEntry 4 }

ibmappnLocalTgRsn OBJECT-TYPE
 SYNTAX INTEGER
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "The resource sequence number is assigned and controlled by the network node that owns this

resource. This is always an even unsigned number unless an error has occurred."

::= { ibmappnLocalTgEntry 5 }

ibmappnLocalTgQuiescing OBJECT-TYPE
SYNTAX INTEGER {yes(1), no(2)}
ACCESS read-only
STATUS mandatory
DESCRIPTION
"Indicates whether the Transmission Group is quiescing."

::= { ibmappnLocalTgEntry 6 }

ibmappnLocalTgOperational OBJECT-TYPE
SYNTAX INTEGER {yes(1), no(2)}
ACCESS read-only
STATUS mandatory
DESCRIPTION
"Indicates whether the Transmission Group is operational."

::= { ibmappnLocalTgEntry 7 }

ibmappnLocalTgCpCpSession OBJECT-TYPE
SYNTAX INTEGER {yes(1), no(2)}
ACCESS read-only
STATUS mandatory
DESCRIPTION
"Indicates whether the CP-CP Sessions are supported on this TG."

::= { ibmappnLocalTgEntry 8 }

ibmappnLocalTgEffCap OBJECT-TYPE
SYNTAX INTEGER
ACCESS read-only
STATUS mandatory
DESCRIPTION
"The effective capacity is an integer value that indicates the actual kilo bits per second. It is derived from the link bandwidth and maximum load factor with the range of 0 thru 603,979,776."

::= { ibmappnLocalTgEntry 9 }

ibmappnLocalTgConnCost OBJECT-TYPE

```

SYNTAX INTEGER (0..255)
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "Cost per connect time: a value representing
    the relative cost per unit of time to use
    the TG. Range is from 0, which means no cost,
    to 255."

```

```
 ::= { ibmappnLocalTgEntry 10 }
```

```

ibmappnLocalTgByteCost OBJECT-TYPE
SYNTAX INTEGER (0..255)
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "Relative cost of transmitting a byte over this link.
    Range is from 0 (lowest cost) to 255."

```

```
 ::= { ibmappnLocalTgEntry 11 }
```

```

ibmappnLocalTgSecurity OBJECT-TYPE
SYNTAX INTEGER {
    nonsecure(1),           --X'01'
    publicSwitchedNetwork(32), --X'20'
    undergroundCable(64),  --X'40'
    secureConduit(96),     --X'60'
    guardedConduit(128),   --X'80'
    encrypted(160),        --X'A0'
    guardedRadiation(192)  --X'C0'
}
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "Security level for this TG."

```

```
 ::= { ibmappnLocalTgEntry 12 }
```

```

ibmappnLocalTgDelay OBJECT-TYPE
SYNTAX INTEGER {
    minimum(0),           --X'00'
    negligible(384),      --X'4C'
    terrestrial(9216),    --X'71'
    packet(147456),       --X'91'
    long(294912),         --X'99'
    maximum(2013265920)   --X'FF'
}
ACCESS read-only

```

STATUS mandatory
DESCRIPTION

"Relative amount of time that it takes for a signal to travel the length of the logical link. This time is represented in micro seconds, with some of the more common values enumerated."

::= { ibmappnLocalTgEntry 13 }

ibmappnLocalTgModemClass OBJECT-TYPE
SYNTAX INTEGER
ACCESS read-only
STATUS mandatory
DESCRIPTION

"This is used to have multiple images for a connection network. For a connection network it is the same as in the TG vector and for a non-connection network it is zero."

::= { ibmappnLocalTgEntry 14 }

ibmappnLocalTgUsr1 OBJECT-TYPE
SYNTAX INTEGER (0..255)
ACCESS read-only
STATUS mandatory
DESCRIPTION

"Value of the first user-defined TG characteristic for this TG.
Range is 0-255."

::= { ibmappnLocalTgEntry 15 }

ibmappnLocalTgUsr2 OBJECT-TYPE
SYNTAX INTEGER (0..255)
ACCESS read-only
STATUS mandatory
DESCRIPTION

"Value of the second user-defined TG characteristic for this TG.
Range is 0-255."

::= { ibmappnLocalTgEntry 16 }

ibmappnLocalTgUsr3 OBJECT-TYPE
SYNTAX INTEGER (0..255)
ACCESS read-only
STATUS mandatory
DESCRIPTION

"Value of the third user-defined TG characteristic for this TG.
Range is 0-255."

```
::= { ibmappnLocalTgEntry 17 }
```

```
-- This section applies only to network nodes.
-- It contains end node topology information known to serving
-- network node.
-- The first table contains information about all end nodes
-- known to this node.
--
-- The TG table contains information about all of the TGs owned
-- by these end nodes.
```

```
ibmappnLocalEnTable OBJECT-TYPE
    SYNTAX SEQUENCE OF IbmappnLocalEnEntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION
        "Portion of the APPN topology
        database that describes the end
        nodes known to this node."
```

```
::= { ibmappnLocalEnTopology 1 }
```

```
ibmappnLocalEnEntry OBJECT-TYPE
    SYNTAX IbmappnLocalEnEntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION
        "This table is indexed by the end node CPname."
```

```
INDEX
```

```
    {ibmappnLocalEnName}
::= { ibmappnLocalEnTable 1 }
```

```
IbmappnLocalEnEntry ::= SEQUENCE {

    ibmappnLocalEnName          DisplayString,
    ibmappnLocalEnEntryTimeLeft INTEGER,
    ibmappnLocalEnType         INTEGER
}
```

```
ibmappnLocalEnName OBJECT-TYPE
    SYNTAX DisplayString (SIZE (3..17))
```

```

ACCESS read-only
STATUS mandatory
DESCRIPTION
    "Administratively-assigned fully-qualified
    name of end node in the format NETID.CPNAME."

```

```
 ::= { ibmappnLocalEnEntry 1 }
```

```

ibmappnLocalEnEntryTimeLeft  OBJECT-TYPE
SYNTAX INTEGER (0..31)
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "Number of days before deletion of this
    end node entry. Range is 0-31."

```

```
 ::= { ibmappnLocalEnEntry 2 }
```

```

ibmappnLocalEnType  OBJECT-TYPE
SYNTAX INTEGER {
    endnode(2),
    len(4)
}
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "Type of APPN node (must always be a len or end node)."
```

```
 ::= { ibmappnLocalEnEntry 3 }
```

```
--APPN Local End node Transmission Group (TG) table
```

```
-- This table describes the TGs associated with
-- all of the end nodes known to this node.
```

```

ibmappnLocalEnTgTable OBJECT-TYPE
SYNTAX SEQUENCE OF IbmappnLocalEnTgEntry
ACCESS not-accessible
STATUS mandatory
DESCRIPTION
    "Table describing all of the TGs owned by the
    end nodes known to this node.
    The TG destination can be a virtual
    node, network node, or end node."

```

```
 ::= { ibmappnLocalEnTopology 2 }
```

```

ibmappnLocalEnTgEntry OBJECT-TYPE
    SYNTAX IbmappnLocalEnTgEntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION
        "This table requires multiple indexes to uniquely
        identify each TG. They are originating CPname,
        destination CPname, and the TG number."

    INDEX
        { ibmappnLocalEnTgOrigin,
          ibmappnLocalEnTgDest,
          ibmappnLocalEnTgNum }

 ::= { ibmappnLocalEnTgTable 1 }

IbmappnLocalEnTgEntry ::= SEQUENCE {
    ibmappnLocalEnTgOrigin      DisplayString,
    ibmappnLocalEnTgDest       DisplayString,
    ibmappnLocalEnTgNum        INTEGER,
    ibmappnLocalEnTgEntryTimeLeft INTEGER,

    ibmappnLocalEnTgDestVirtual INTEGER,
    ibmappnLocalEnTgDlcData    OCTET STRING,

    ibmappnLocalEnTgOperational INTEGER,
    ibmappnLocalEnTgCpCpSession INTEGER,
    ibmappnLocalEnTgEffCap     INTEGER,
    ibmappnLocalEnTgConnCost   INTEGER,
    ibmappnLocalEnTgByteCost   INTEGER,
    ibmappnLocalEnTgSecurity   INTEGER,
    ibmappnLocalEnTgDelay      INTEGER,
    ibmappnLocalEnTgModemClass INTEGER,
    ibmappnLocalEnTgUsr1       INTEGER,
    ibmappnLocalEnTgUsr2       INTEGER,
    ibmappnLocalEnTgUsr3       INTEGER
}

ibmappnLocalEnTgOrigin      OBJECT-TYPE
    SYNTAX DisplayString (SIZE (3..17))
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Administratively-assigned name for the
        origination node for this TG.
        This is the fully-qualified network name."

 ::= { ibmappnLocalEnTgEntry 1 }

```

```

ibmappnLocalEnTgDest      OBJECT-TYPE
    SYNTAX DisplayString (SIZE (3..17))
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Administratively-assigned name for the
        destination node for this TG.
        This is the fully-qualified network name."

 ::= { ibmappnLocalEnTgEntry 2 }

ibmappnLocalEnTgNum      OBJECT-TYPE
    SYNTAX INTEGER
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Number associated with this transmission group."

 ::= { ibmappnLocalEnTgEntry 3 }

ibmappnLocalEnTgEntryTimeLeft  OBJECT-TYPE
    SYNTAX INTEGER (0..31)
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Number of days before deletion of this
        end node TG entry. Range is 0-31."

 ::= { ibmappnLocalEnTgEntry 4 }

ibmappnLocalEnTgDestVirtual  OBJECT-TYPE
    SYNTAX INTEGER {yes(1), no(2)}
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Indicates whether the destination node is
        a virtual node."

 ::= { ibmappnLocalEnTgEntry 5 }

ibmappnLocalEnTgDlcData  OBJECT-TYPE
    SYNTAX OCTET STRING
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "DLC specific data related to the link connection
        network.
        Token-Ring      - MAC/SAP

```


X.25 Switched - dial digits
X.21 Switched - dial digits
Circuit Swtch - dial digits"

::= { ibmappnLocalEnTgEntry 6 }

ibmappnLocalEnTgOperational OBJECT-TYPE

SYNTAX INTEGER {yes(1), no(2)}

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Indicates whether the Transmission Group is operational."

::= { ibmappnLocalEnTgEntry 7 }

ibmappnLocalEnTgCpCpSession OBJECT-TYPE

SYNTAX INTEGER {yes(1), no(2)}

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Indicates whether CP-CP sessions are supported on this TG."

::= { ibmappnLocalEnTgEntry 8 }

ibmappnLocalEnTgEffCap OBJECT-TYPE

SYNTAX INTEGER

ACCESS read-only

STATUS mandatory

DESCRIPTION

"The effective capacity is an integer value that indicates the actual kilo bits per second.

It is derived from the link bandwidth and maximum load factor with the range of 0 thru 603,979,776."

::= { ibmappnLocalEnTgEntry 9 }

ibmappnLocalEnTgConnCost OBJECT-TYPE

SYNTAX INTEGER (0..255)

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Cost per connect time: a value representing the relative cost per unit of time to use the TG. Range is from 0, which means no cost, to 255."

::= { ibmappnLocalEnTgEntry 10 }

```

ibmappnLocalEnTgByteCost OBJECT-TYPE
    SYNTAX INTEGER (0..255)
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Relative cost of transmitting a byte over this link.
        Range is from 0, which means no cost, to 255."

 ::= { ibmappnLocalEnTgEntry 11 }

ibmappnLocalEnTgSecurity OBJECT-TYPE
    SYNTAX INTEGER {
        nonsecure(1),           --X'01'
        publicSwitchedNetwork(32), --X'20'
        undergroundCable(64),   --X'40'
        secureConduit(96),      --X'60'
        guardedConduit(128),    --X'80'
        encrypted(160),         --X'A0'
        guardedRadiation(192)   --X'C0'
    }
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Security level for this TG."

 ::= { ibmappnLocalEnTgEntry 12 }

ibmappnLocalEnTgDelay OBJECT-TYPE
    SYNTAX INTEGER {
        minimum(0),           --X'00'
        negligible(384),      --X'4C'
        terrestrial(9216),    --X'71'
        packet(147456),       --X'91'
        long(294912),         --X'99'
        maximum(2013265920)   --X'FF'
    }
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Relative amount of time that it takes for a signal to
        travel the length of the logical link. This time is
        represented in micro seconds, with some of the more
        common values enumerated."

 ::= { ibmappnLocalEnTgEntry 13 }

ibmappnLocalEnTgModemClass OBJECT-TYPE
    SYNTAX INTEGER (0..65535)

```

```

ACCESS read-only
STATUS mandatory
DESCRIPTION
    "This is used to have multiple images for a
    connection network.  For a connection network
    it is the same as in the TG vector and for
    a non connection network it is zero."

```

```
 ::= { ibmappnLocalEnTgEntry 14 }
```

```

ibmappnLocalEnTgUsr1 OBJECT-TYPE
SYNTAX INTEGER (0..255)
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "First user-defined TG characteristic
    for this TG. Range of values is 0-255."

```

```
 ::= { ibmappnLocalEnTgEntry 15 }
```

```

ibmappnLocalEnTgUsr2 OBJECT-TYPE
SYNTAX INTEGER (0..255)
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "Second user-defined TG characteristic
    for this TG. Range of values is 0-255."

```

```
 ::= { ibmappnLocalEnTgEntry 16 }
```

```

ibmappnLocalEnTgUsr3 OBJECT-TYPE
SYNTAX INTEGER (0..255)
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "Third user-defined TG characteristic
    for this TG. Range of values is 0-255."

```

```
 ::= { ibmappnLocalEnTgEntry 17 }
```

```
-- ***** The APPN Directory group *****
```

```

ibmappnDir      OBJECT IDENTIFIER ::= { ibmappn 5 }
ibmappnDirPerf OBJECT IDENTIFIER ::= { ibmappnDir 1 }

```

```
-- The APPN Directory Group
```

```
-- The APPN Directory Database
```

```
-- Each APPN network node maintains directories containing
-- information on which LUs (applications) are available and
-- where they are located.  LUs can be located within an APPN
-- network node or in any of the attached end nodes.
```

```
-- Max Cache Directory Entries
-- Current Number of Cache Entries
-- Current Number Home Entries
-- Current Number of Registered Entries
-- number of directed locates sent
-- number of directed locates received
-- number of broadcast locates sent
-- number of broadcast locates received
-- Number of locates returned with a found
-- Number of locates returned with a not found
-- Number of outstanding Locates
-- Directory table (Repeated for each Serving NN)
```

```
-- Serving Network Node Fully Qualified CP Name
```

```
-- LU Groups within Directory table (one for each LU)
```

```
-- Fully-qualified LU Name
-- Owning fully-qualified CP Name
-- TP Name
-- Resource location      (local/domain/cross-domain)
-- Entry type (home,Register/cache)
-- Wildcard                (yes/no)
```

```
ibmappnDirMaxCaches OBJECT-TYPE
```

```
SYNTAX INTEGER
```

```
ACCESS read-only
```

```
STATUS mandatory
```

```
DESCRIPTION
```

```
"Maximum number of cache entries allowed. This
is an administratively assigned value."
```

```
::= { ibmappnDirPerf 1 }
```

```
ibmappnDirCurCaches OBJECT-TYPE
```

```
SYNTAX Gauge
```

```
ACCESS read-only
```

```
STATUS mandatory
```

```
DESCRIPTION
```

```
"Current number of cache entries."
```

```
::= { ibmappnDirPerf 2 }
```

```
ibmappnDirCurHomeEntries OBJECT-TYPE
    SYNTAX Gauge
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Current number of home entries."

    ::= { ibmappnDirPerf 3 }

ibmappnDirRegEntries OBJECT-TYPE
    SYNTAX Gauge
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Current number of registered entries."

    ::= { ibmappnDirPerf 4 }

ibmappnDirInLocates OBJECT-TYPE
    SYNTAX Counter
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Number of directed locates received."

    ::= { ibmappnDirPerf 5 }

ibmappnDirInBcastLocates OBJECT-TYPE
    SYNTAX Counter
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Number of broadcast locates received."

    ::= { ibmappnDirPerf 6 }

ibmappnDirOutLocates OBJECT-TYPE
    SYNTAX Counter
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Number of directed locates sent."

    ::= { ibmappnDirPerf 7 }

ibmappnDirOutBcastLocates OBJECT-TYPE
    SYNTAX Counter
    ACCESS read-only
```

STATUS mandatory
 DESCRIPTION
 "Number of broadcast locates sent."

::= { ibmappnDirPerf 8 }

ibmappnDirNotFoundLocates OBJECT-TYPE
 SYNTAX Counter
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Number of directed locates returned with a 'not found'."

::= { ibmappnDirPerf 9 }

ibmappnDirNotFoundBcastLocates OBJECT-TYPE
 SYNTAX Counter
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Number of broadcast locates returned with
 a not found."

::= { ibmappnDirPerf 10 }

ibmappnDirLocateOutstands OBJECT-TYPE
 SYNTAX Gauge
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION
 "Current number of outstanding locates,
 both directed and broadcast. This value
 varies. A value of zero indicates
 that no locates are unanswered."

::= { ibmappnDirPerf 11 }

--APPN Directory table

-- This table contains information about all known
 -- LUs and TPs.

ibmappnDirTable OBJECT-TYPE
 SYNTAX SEQUENCE OF IbmappnDirEntry
 ACCESS not-accessible
 STATUS mandatory
 DESCRIPTION

"Table containing information about all known LUs and TPs."

::= { ibmappnDir 2 }

ibmappnDirEntry OBJECT-TYPE
 SYNTAX IbmappnDirEntry
 ACCESS not-accessible
 STATUS mandatory
 DESCRIPTION

"This table is indexed by the LU name."

INDEX

{ibmappnDirLuName}

::= { ibmappnDirTable 1 }

IbmappnDirEntry ::= SEQUENCE {
 ibmappnDirLuName DisplayString,
 ibmappnDirServerName DisplayString,
 ibmappnDirLuOwnerName DisplayString,
 ibmappnDirLuLocation INTEGER,
 ibmappnDirType INTEGER,
 ibmappnDirWildcard INTEGER
 }

ibmappnDirLuName OBJECT-TYPE
 SYNTAX DisplayString (SIZE (3..17))
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION

"Fully-qualified network LU name in the domain of the serving network node."

::= { ibmappnDirEntry 1 }

ibmappnDirServerName OBJECT-TYPE
 SYNTAX DisplayString (SIZE (3..17))
 ACCESS read-only
 STATUS mandatory
 DESCRIPTION

"Fully-qualified control point (CP) name of the network node server. For unassociated end node entries, the end node fully-qualified name is returned."

::= { ibmappnDirEntry 2 }

```

ibmappnDirLuOwnerName      OBJECT-TYPE
    SYNTAX DisplayString (SIZE (3..17))
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Fully-qualified CP name of the node at which
         the LU is located. This name is the same as the
         serving NN name when the LU is located at a
         network node or an unassociated end node. It is
         also the same as the fully-qualified LU name
         when this is the control point LU for this node."

 ::= { ibmappnDirEntry 3 }

```

```

ibmappnDirLuLocation       OBJECT-TYPE
    SYNTAX INTEGER {
        local(1),      --Local
        domain(2),    --Domain
        xdomain(3)    --Cross Domain
    }
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Specifies the location of the LU."

 ::= { ibmappnDirEntry 4 }

```

```

ibmappnDirType             OBJECT-TYPE
    SYNTAX INTEGER {
        home(1),      --defined as home entry
        cache(2),     --learned over time
        registered(3) --registered by end node
    }
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Directory types are:
         1 - Home
             The LU is in the domain of the local network node
             and the LU information has been configured at the
             local node.

         2 - Cache
             The LU has previously been located by a broadcast
             search and the location information has been saved.

         3 - Register

```


The LU is at an end node that is in the domain of the local network node. Registered entries are registered by the served end node."

```
::= { ibmappnDirEntry 5 }
```

```
ibmappnDirWildcard      OBJECT-TYPE
    SYNTAX INTEGER {
        other(1),
        explicit-entry(2),
        partial-wildcard(3),
        full-wildcard(4)
    }
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "1 - Other means unknown type of LU entry.
         2 - Explicited-entry means the full LUNAME will be used
           for locating this LU.
         3 - Partial-wildcard means only the non-blank portions
           of the LUNAME will be used for locating this LU.
         4 - Full-wildcard means all LUNAMES will be directed
           to this LU."

 ::= { ibmappnDirEntry 6 }
```

```
-- ***** The APPN Class of Service group *****
```

```
ibmappnCos OBJECT IDENTIFIER ::= { ibmappn 6 } --APPN COS
```

```
-- The APPN Class of Service (COS)
```

```
-- Class of Service is a means of expressing the quality of the routes
-- and the transmission priority of traffic which flows on these routes.
-- The quality of routes is specified by two tables, a COS weight table
-- for TGs and a COS weight table for nodes. These COS tables are
-- administratively assigned at each APPN node. Seven default tables
```

```
-- for TGs and a COS weight table for Nodes. These COS tables are
-- administratively assigned at each APPN node with seven default tables
-- being provided by IBM.
```

```
--
--
```

```
-- COS Name
```

```
-- Unqualified name identifying the class of service.
```

```
-- Transmission priority
```

```

--      Transmission priority associated with this class of service
-- COS Node Row Table
--      At least one node row must be specified. The default
--      COS tables specify 8 rows.
-- Node Row Weight
--      Numeric value between 0 and 255 inclusive indicating
--      the weight associated with this row.
-- Route addition resist (min)
--      Numeric value between 0 and 255 inclusive indicating
--      the minimum route addition resistance for this row.
-- Route addition resist (max)
--      Numeric value between 0 and 255 inclusive indicating
--      the maximum route addition resistance for this row.
-- Congestion (min)
--      Indicates whether this class of service for this row
--      will accept congestion. Yes or No must be specified.
-- Congestion (max)
--      Indicates whether this Class of Service for this row
--      will accept congestion. Yes or No must be specified.
--
-- COS TG Row table
--      At least one TG row must be specified with the defaults
--      COS tables specify 8 rows.
-- TG Row Weight
--      Numeric value between 0 and 255 inclusive indicating
--      the weight associated with this row.
-- Effective capacity (min)
--      Indicates the lowest acceptable value for this row.
-- Effective capacity (max)
--      Indicates the highest required value for this row.
-- Cost per connect time (min)
--      Indicates the lowest connect cost per unit time value
--      for this row. This value is between 0 and 255 inclusive.
-- Cost per connect time (max)
--      Indicates the highest connect cost per unit time value
--      for this row. This value is between 0 and 255 inclusive.
-- Cost per byte (min)
--      Indicates the lowest cost per byte value
--      for this row. This value is between 0 and 255 inclusive.
-- Cost per byte (max)
--      Indicates the highest cost per byte value
--      for this row. This value is between 0 and 255 inclusive.
-- Security (min)
--      Indicates the lowest acceptable value for security
--      for this row. This value is one of seven values.
-- Security (max)
--      Indicates the highest acceptable value for security
--      for this row. This value is one of seven values.

```

```
-- Propagation delay (min)
--     Indicates the lowest acceptable propagation delay value
--     for this row.
-- Propagation delay (max)
--     Indicates the highest acceptable propagation delay value
--     for this row.
-- User defined 1 (min)
--     Indicates the lowest acceptable value
--     for this row. This value is between 0 and 255 inclusive.
-- User defined 1 (max)
--     Indicates the highest acceptable value
--     for this row. This value is between 0 and 255 inclusive.
-- User defined 2 (min)
--     Same as user defined 1
-- User defined 2 (max)
--     Same as user defined 1
-- User defined 3 (min)
--     Same as user defined 1
-- User defined 3 (max)
--     Same as user defined 1
--
--
--Due to SNMP ASN.1 limitations the COS table is defined
--in the following format.
--
-- MODE name table
-- MODE Name (index)
-- COS Name
--
-- COS name table
-- COS Name (index)
-- Transmission priority
--
-- COS node row table
-- COS Name (index1)
-- Index2
-- Node Row Weight
-- Rte addition resist (min)
-- Rte addition resist (max)
-- Congestion (min)
-- Congestion (max)
--
-- COS TG row table
-- COS Name (index1)
-- Index
-- TG Row Weight
-- Effective capacity (min)
```

```

-- Effective capacity (max)
-- Cost per conn time (min)
-- Cost per conn time (max)
-- cost per byte (min)
-- cost per byte (max)
-- Security (min)
-- Security (max)
-- Propagation delay (min)
-- Propagation delay (max)
-- User defined 1 (min)
-- User defined 1 (max)
-- User defined 2 (min)
-- User defined 2 (max)
-- User defined 3 (min)
-- User defined 3 (max)
--
-- *****

```

```

ibmappnCosModeTable OBJECT-TYPE
    SYNTAX SEQUENCE OF IbmappnCosModeEntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION
        "Table representing all of the defined
        mode names for this node. The table
        contains the matching COS name."

```

```
 ::= { ibmappnCos 1 }
```

```

ibmappnCosModeEntry OBJECT-TYPE
    SYNTAX IbmappnCosModeEntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION
        "This table is indexed by the Mode Name."

```

```

INDEX
    {ibmappnCosModeName}

```

```
 ::= { ibmappnCosModeTable 1 }
```

```

IbmappnCosModeEntry ::= SEQUENCE {
    ibmappnCosModeName          DisplayString,
    ibmappnCosModeCosName      DisplayString
}

```

```

ibmappnCosModeName          OBJECT-TYPE

```

```

SYNTAX DisplayString (SIZE (1..8))
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "Administratively-assigned name for this
    mode entry."

```

```
 ::= { ibmappnCosModeEntry 1 }
```

```

ibmappnCosModeCosName OBJECT-TYPE
SYNTAX DisplayString (SIZE (1..8))
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "An administratively assigned name for this
    Class of Service."

```

```
 ::= { ibmappnCosModeEntry 2 }
```

```
-- *****
```

```

ibmappnCosNameTable OBJECT-TYPE
SYNTAX SEQUENCE OF IbmapppnCosNameEntry
ACCESS not-accessible
STATUS mandatory
DESCRIPTION
    "Table representing all of the defined class-of-service
    names for this node. The COS node and TG tables are
    accessed using the same index, which is the COS name."

```

```
 ::= { ibmappnCos 2 }
```

```

ibmappnCosNameEntry OBJECT-TYPE
SYNTAX IbmapppnCosNameEntry
ACCESS not-accessible
STATUS mandatory
DESCRIPTION
    "The COS name is the index to this table."

```

```

INDEX
    {ibmappnCosName}

```

```
 ::= { ibmappnCosNameTable 1 }
```

```

IbmapppnCosNameEntry ::= SEQUENCE {
    ibmappnCosName          DisplayString,
    ibmappnCosTransPriority INTEGER

```

}

```

ibmappnCosName          OBJECT-TYPE
    SYNTAX DisplayString (SIZE (1..8))
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Administratively-assigned name for this
         class of service."

 ::= { ibmappnCosNameEntry 1 }

```

```

ibmappnCosTransPriority OBJECT-TYPE
    SYNTAX INTEGER {
        low(1),           --X'01'
        medium(2),       --X'02'
        high(3),         --X'03'
        network(4)       --X'04'
    }
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Transmission priority for this
         class of service.  Values are:
         Low
         Medium
         High
         Network"

 ::= { ibmappnCosNameEntry 2 }

```

```

ibmappnCosNodeRowTable OBJECT-TYPE
    SYNTAX SEQUENCE OF IbmappnCosNodeRowEntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION
        "This table contains all node-row information for all
         class of service in this node."

 ::= { ibmappnCos 3 }

```

```

ibmappnCosNodeRowEntry OBJECT-TYPE
    SYNTAX IbmappnCosNodeRowEntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION

```

"The COS name is the first index and a integer is the second index to insure a unique index."

INDEX

```
{ibmappnCosNodeRowName,
  ibmappnCosNodeRowIndex}
```

```
::= { ibmappnCosNodeRowTable 1 }
```

```
IbmappnCosNodeRowEntry ::= SEQUENCE {
  ibmappnCosNodeRowName          DisplayString,
  ibmappnCosNodeRowIndex         INTEGER,
--Node Row Group
  ibmappnCosNodeRowWgt          DisplayString,
  ibmappnCosNodeRowResistMin     INTEGER,
  ibmappnCosNodeRowResistMax     INTEGER,
  ibmappnCosNodeRowMinCongestAllow INTEGER,
  ibmappnCosNodeRowMaxCongestAllow INTEGER
}
```

```
ibmappnCosNodeRowName          OBJECT-TYPE
  SYNTAX DisplayString (SIZE (1..8))
  ACCESS read-only
  STATUS mandatory
  DESCRIPTION
    "Administratively-assigned name for this
    class of service."
```

```
::= { ibmappnCosNodeRowEntry 1 }
```

```
ibmappnCosNodeRowIndex         OBJECT-TYPE
  SYNTAX INTEGER (0..255)
  ACCESS read-only
  STATUS mandatory
  DESCRIPTION
    "Index of COS name. This same value is used
    to access the node and TG COS tables.
    Range of values is 0-255."
```

```
::= { ibmappnCosNodeRowEntry 2 }
```

```
--Node Row Group
```

```
ibmappnCosNodeRowWgt          OBJECT-TYPE
  SYNTAX DisplayString
  ACCESS read-only
  STATUS mandatory
  DESCRIPTION
```

"Weight to be associated with the nodes
that fit the criteria specified by this node row."

::= { ibmappnCosNodeRowEntry 3 }

ibmappnCosNodeRowResistMin OBJECT-TYPE
SYNTAX INTEGER (0..255)
ACCESS read-only
STATUS mandatory
DESCRIPTION
"Minimum route addition resistance value
for this node. Range of values is 0-255.
The lower the value, the more desirable
the node is for intermediate routing."

::= { ibmappnCosNodeRowEntry 4 }

ibmappnCosNodeRowResistMax OBJECT-TYPE
SYNTAX INTEGER (0..255)
ACCESS read-only
STATUS mandatory
DESCRIPTION
"Maximum route addition resistance value
for this node. Range of values is 0-255.
The lower the value, the more desirable
the node is for intermediate routing."

::= { ibmappnCosNodeRowEntry 5 }

ibmappnCosNodeRowMinCongestAllow OBJECT-TYPE
SYNTAX INTEGER {yes(1), no(2)}
ACCESS read-only
STATUS mandatory
DESCRIPTION
"Indicates whether low congestion will be
tolerated. The minimum and maximum parameters
will allow specifying either low-congested,
high-congested, or either to be used."

::= { ibmappnCosNodeRowEntry 6 }

ibmappnCosNodeRowMaxCongestAllow OBJECT-TYPE
SYNTAX INTEGER {yes(1), no(2)}
ACCESS read-only
STATUS mandatory
DESCRIPTION
"Indicates whether high congestion will be
tolerated. The minimum and maximum parameters

will allow specifying either low-congested,
high-congested, or either to be used."

```
::= { ibmappnCosNodeRowEntry 7 }
```

```
-- COS TG row table
-- Index
-- TG Row Weight
-- Effective capacity (min)
-- Effective capacity (max)
-- Cost per conn time (min)
-- Cost per conn time (max)
-- cost per byte (min)
-- cost per byte (max)
-- Security (min)
-- Security (max)
-- Propagation delay (min)
-- Propagation delay (max)
-- User defined 1 (min)
-- User defined 1 (max)
-- User defined 2 (min)
-- User defined 2 (max)
-- User defined 3 (min)
-- User defined 3 (max)
--
```

```
ibmappnCosTgRowTable OBJECT-TYPE
```

```
SYNTAX SEQUENCE OF IbmappnCosTgRowEntry
```

```
ACCESS not-accessible
```

```
STATUS mandatory
```

```
DESCRIPTION
```

```
"Table containing all the Tg-row information for all  
class of service defined in this node."
```

```
::= { ibmappnCos 4 }
```

```
ibmappnCosTgRowEntry OBJECT-TYPE
```

```
SYNTAX IbmappnCosTgRowEntry
```

```
ACCESS not-accessible
```

```
STATUS mandatory
```

```
DESCRIPTION
```

```
"The TgRowName and the TgRowIndex are the index  
for this table."
```

```
INDEX
```

```
{ ibmappnCosTgRowName,  
  ibmappnCosTgRowIndex }
```

```
 ::= { ibmappnCosTgRowTable 1 }
```

```
 IbmappnCosTgRowEntry ::= SEQUENCE {
     ibmappnCosTgRowName          DisplayString,
     ibmappnCosTgRowIndex        INTEGER,
 --TG Row Group
     ibmappnCosTgRowWgt          DisplayString,
     ibmappnCosTgRowEffCapMin    INTEGER,
     ibmappnCosTgRowEffCapMax    INTEGER,
     ibmappnCosTgRowConnCostMin  INTEGER,
     ibmappnCosTgRowConnCostMax  INTEGER,
     ibmappnCosTgRowByteCostMin  INTEGER,
     ibmappnCosTgRowByteCostMax  INTEGER,
     ibmappnCosTgRowSecurityMin  INTEGER,
     ibmappnCosTgRowSecurityMax  INTEGER,
     ibmappnCosTgRowDelayMin     INTEGER,
     ibmappnCosTgRowDelayMax     INTEGER,
     ibmappnCosTgRowUsr1Min      INTEGER,
     ibmappnCosTgRowUsr1Max      INTEGER,
     ibmappnCosTgRowUsr2Min      INTEGER,
     ibmappnCosTgRowUsr2Max      INTEGER,
     ibmappnCosTgRowUsr3Min      INTEGER,
     ibmappnCosTgRowUsr3Max      INTEGER
   }
```

```
 ibmappnCosTgRowName          OBJECT-TYPE
     SYNTAX DisplayString (SIZE (1..8))
     ACCESS read-only
     STATUS mandatory
     DESCRIPTION
         "Administratively-assigned name for this
         class of service."
```

```
 ::= { ibmappnCosTgRowEntry 1 }
```

```
 ibmappnCosTgRowIndex        OBJECT-TYPE
     SYNTAX INTEGER (0..255)
     ACCESS read-only
     STATUS mandatory
     DESCRIPTION
         "Index of COS name.  This same value is used
         to access the node and TG COS tables."
```

```
 ::= { ibmappnCosTgRowEntry 2 }
```

```
 --TG Row
```

```
 ibmappnCosTgRowWgt          OBJECT-TYPE
```

```
SYNTAX DisplayString
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "Weight to be associated with the nodes
    that fit the criteria specified by this tg-row."
```

```
::= { ibmappnCosTgRowEntry 3 }
```

```
ibmappnCosTgRowEffCapMin    OBJECT-TYPE
SYNTAX INTEGER
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "Minimum acceptable speed for this Class of Service.
    The effective capacity is an integer value that indicates
    the actual kilo bits per second.
    It is derived from the link bandwidth and maximum load
    factor with the range of 0 thru 603,979,776."
```

```
::= { ibmappnCosTgRowEntry 4 }
```

```
ibmappnCosTgRowEffCapMax    OBJECT-TYPE
SYNTAX INTEGER
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "Maximum acceptable speed for this Class of Service.
    The effective capacity is an integer value that indicates
    the actual kilo bits per second.
    It is derived from the link bandwidth and maximum load
    factor with the range of 0 thru 603,979,776."
```

```
::= { ibmappnCosTgRowEntry 5 }
```

```
ibmappnCosTgRowConnCostMin OBJECT-TYPE
SYNTAX INTEGER (0..255)
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "Minimum acceptable cost per connect time
    for this Class of Service.
    Cost per connect time: a value representing
    the relative cost per unit of time to use
    the TG. Range is from 0, which means no cost,
    to 255."
```

```
::= { ibmappnCosTgRowEntry 6 }
```

```

ibmappnCosTgRowConnCostMax OBJECT-TYPE
    SYNTAX INTEGER (0..255)
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Maximum acceptable cost per connect time
        for this Class of Service.
        Cost per connect time: a value representing
        the relative cost per unit of time to use
        the TG. Range is from 0, which means no cost,
        to 255."

 ::= { ibmappnCosTgRowEntry 7 }

ibmappnCosTgRowByteCostMin OBJECT-TYPE
    SYNTAX INTEGER (0..255)
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Minimum acceptable cost per byte
        for this Class of Service."

 ::= { ibmappnCosTgRowEntry 8 }

ibmappnCosTgRowByteCostMax OBJECT-TYPE
    SYNTAX INTEGER (0..255)
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Maximum acceptable cost per byte
        for this Class of Service."

 ::= { ibmappnCosTgRowEntry 9 }

ibmappnCosTgRowSecurityMin OBJECT-TYPE
    SYNTAX INTEGER {
        nonsecure(1),           --X'01'
        publicSwitchedNetwork(32), --X'20'
        undergroundCable(64),   --X'40'
        secureConduit(96),      --X'60'
        guardedConduit(128),    --X'80'
        encrypted(160),         --X'A0'
        guardedRadiation(192)   --X'C0'
    }
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Minimum acceptable security

```

for this Class of Service."

::= { ibmappnCosTgRowEntry 10 }

ibmappnCosTgRowSecurityMax OBJECT-TYPE

```
SYNTAX INTEGER {
    nonsecure(1),                --X'01'
    publicSwitchedNetwork(32),   --X'20'
    undergroundCable(64),       --X'40'
    secureConduit(96),          --X'60'
    guardedConduit(128),        --X'80'
    encrypted(160),             --X'A0'
    guardedRadiation(192)       --X'C0'
}
```

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Maximum acceptable security
for this Class of Service."

::= { ibmappnCosTgRowEntry 11 }

ibmappnCosTgRowDelayMin OBJECT-TYPE

```
SYNTAX INTEGER {
    minimum(0),                 --X'00'
    negligible(384),           --X'4C'
    terrestrial(9216),         --X'71'
    packet(147456),           --X'91'
    long(294912),             --X'99'
    maximum(2013265920)       --X'FF'
}
```

ACCESS read-only

STATUS mandatory

DESCRIPTION

"Minimum acceptable propagation delay for this class of service.
Relative amount of time that it takes for a signal to travel
the length of the logical link. This time is represented in
micro seconds, with the more values enumerated."

::= { ibmappnCosTgRowEntry 12 }

ibmappnCosTgRowDelayMax OBJECT-TYPE

```
SYNTAX INTEGER {
    minimum(0),                 --X'00'
    negligible(384),           --X'4C'
    terrestrial(9216),         --X'71'
    packet(147456),           --X'91'
    long(294912),             --X'99'
}
```

```

        maximum(2013265920)          --X'FF'
    }
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "Maximum acceptable propagation delay for this class of service.
    Relative amount of time that it takes for a signal to travel
    the length of the logical link. This time is represented in
    micro seconds, with the more values enumerated."

 ::= { ibmappnCosTgRowEntry 13 }

ibmappnCosTgRowUsr1Min OBJECT-TYPE
SYNTAX INTEGER (0..255)
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "Minimum acceptable value for this
    user defined characteristic.
    Range of values is 0-255."

 ::= { ibmappnCosTgRowEntry 14 }

ibmappnCosTgRowUsr1Max OBJECT-TYPE
SYNTAX INTEGER (0..255)
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "Maximum acceptable value for this
    user defined characteristic.
    Range of values is 0-255."

 ::= { ibmappnCosTgRowEntry 15 }

ibmappnCosTgRowUsr2Min OBJECT-TYPE
SYNTAX INTEGER (0..255)
ACCESS read-only
STATUS mandatory
DESCRIPTION
    "Minimum acceptable value for this
    user defined characteristic.
    Range of values is 0-255."

 ::= { ibmappnCosTgRowEntry 16 }

ibmappnCosTgRowUsr2Max OBJECT-TYPE
SYNTAX INTEGER (0..255)
ACCESS read-only

```

STATUS mandatory
DESCRIPTION
"A Maximum acceptable value for this
user defined characteristic."

::= { ibmappnCosTgRowEntry 17 }

ibmappnCosTgRowUsr3Min OBJECT-TYPE
SYNTAX INTEGER (0..255)
ACCESS read-only
STATUS mandatory
DESCRIPTION
"Minimum acceptable value for this
user defined characteristic.
Range of values is 0-255."

::= { ibmappnCosTgRowEntry 18 }

ibmappnCosTgRowUsr3Max OBJECT-TYPE
SYNTAX INTEGER (0..255)
ACCESS read-only
STATUS mandatory
DESCRIPTION
"Maximum acceptable value for this
user defined characteristic.
Range of values is 0-255."

::= { ibmappnCosTgRowEntry 19 }

END

3.0 Acknowledgements

Thanks go to David Chen, Leo Temoshenko, and Mike Allen for their contribution and support through the development process.

4.0 Security Considerations

Security issues are not discussed in this memo.

5.0 Authors' Addresses

William F. McKenzie
IBM Networking Systems
P. O. Box 12195
Research Triangle Park, NC 27709
US

Phone: +1 919 254 5705
EMail: mckenzie@ralvma.vnet.ibm.com

Jia-bing R. Cheng
IBM Networking Systems
P. O. Box 12195
Research Triangle Park, NC 27709
US

Phone: +1 919 254 4434
EMail: cheng@ralvm6.vnet.ibm.com

