

Network Working Group  
Request for Comments: 1593  
Category: Informational

W. McKenzie  
J. Cheng  
IBM Networking Systems  
March 1994

## 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 }

ibmappnNodeNnFrns 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 unsuccessful 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 unsuccessful 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 IbmapppNodePortIpEntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION
        "Port table (TCP/IP specific)."
```

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

```

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

```

```

INDEX
    {ibmappnNodePortIpName }

```

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

```

IbmapppNodePortIpEntry ::= 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 = 1d. 1d. 1d. 1d / 2d  
 tr = 1x: 1x: 1x: 1x: 1x: 1x . 1x  
 dlsw = 1x: 1x: 1x: 1x: 1x: 1x . 1x  
 ethernet = 1x: 1x: 1x: 1x: 1x: 1x . 1x  
 "

::= { 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 = 1d. 1d. 1d. 1d / 2d  
 tr = 1x: 1x: 1x: 1x: 1x: 1x . 1x  
 dlsw = 1x: 1x: 1x: 1x: 1x: 1x . 1x

```

        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)
        ibmappnNodeLsEchoRsps          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,
    ibmappnNodeLsLocalIpAddress 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 }
```

```
ibmappnNodeLsLocalIpAddress 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)."

```

```
 ::= { ibmappnLinkStationInformation 3 }
```

```
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 IbmapnpNodeLsStatusEntry
    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 recieved 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         = 1d. 1d. 1d. 1d / 2d

        tr         = 1x: 1x: 1x: 1x: 1x: 1x . 1x

        dlsw       = 1x: 1x: 1x: 1x: 1x: 1x . 1x

        ethernet   = 1x: 1x: 1x: 1x: 1x: 1x . 1x

        "

 ::= { 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 unsuccessful 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 unsuccessful 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 'appnNnFrns' 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 IbmapppNnAdjNodeEntry

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 IbmapppNnAdjNodeEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION

"The adjacent node name is the index for this table."

INDEX

{ibmappnNnAdjNodeAdjName}

::= { ibmappnNnAdjNodeTable 1 }

IbmapppNnAdjNodeEntry ::= SEQUENCE {

ibmappnNnAdjNodeAdjName

ibmappnNnAdjNodeCpCpSessStatus

ibmappnNnAdjNodeOutOfSeqTdus

DisplayString,

INTEGER,

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. Incative 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 refered 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 outof 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 IbmapppNnTopologyEntry

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 IbmapppNnTopologyEntry

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,
ibmappnNnNodeFrSn	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 }

ibmappnNnNodeFrSn 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 IbmapppNnTgTopologyEntry
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,  
ibmappnNnTgFrsn 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 }

ibmappnNnTgFrns OBJECT-TYPE
    SYNTAX INTEGER (0..65535)
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Flow reduction sequence numbers (FRSs) 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 FRNS
        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 }



```

ibmappnNnTgUshr3 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 IbmapppNnTopologyFREntry
    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 IbmapppNnTopologyFREntry
    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 IbmapnNnTgTopologyFREntry
    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 IbmapnNnTgTopologyFREntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION
        "This table is indexed by four columns:
        FRSN, TG owner fully-qualified node name,
        TG destination fully-qualified node name, and TG number."
```

INDEX

```

    {ibmappnNnTgFRFrsn,
      ibmappnNnTgFROwner,
      ibmappnNnTgFRDest,
      ibmappnNnTgFRNum}

```

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

```

IbmappnNnTgTopologyFREntry ::= SEQUENCE {

```

```

    ibmappnNnTgFROwner      DisplayString,
    ibmappnNnTgFRDest      DisplayString,
    ibmappnNnTgFRNum       INTEGER,
    ibmappnNnTgFRFrsn      INTEGER,
    ibmappnNnTgFREntryTimeLeft INTEGER,

```

```

    ibmappnNnTgFRDestVirtual INTEGER,
    ibmappnNnTgFRDlcData    OCTET STRING,

```

```

    ibmappnNnTgFRFRRsn      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 }

ibmappnNnTgFRFrsn 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 IbmapnLocalTgEntry

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 IbmapnpLocalEnEntry
    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 IbmapnpLocalEnEntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION
        "This table is indexed by the end node CPname."
```

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

```
IbmapnpLocalEnEntry ::= 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 IbmapppnLocalEnTgEntry
    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 IbmapnDirEntry  
 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 - Explicated-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)
--
-- *****

```

```

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

    ::= { ibmappnCcos 1 }

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

    INDEX
        {ibmappnCcosModeName}

    ::= { ibmappnCcosModeTable 1 }

```

```

IbmappnCcosModeEntry ::= SEQUENCE {
    ibmappnCcosModeName          DisplayString,
    ibmappnCcosModeCcosName      DisplayString
}

```

```

ibmappnCcosModeName          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 IbmappnCosNameEntry
    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 IbmappnCosNameEntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION
        "The COS name is the index to this table."

    INDEX
        {ibmappnCosName}

 ::= { ibmappnCosNameTable 1 }

IbmappnCosNameEntry ::= 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 IbmapppnCosNodeRowEntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION
        "This table contains all node-row information for all
        class of service in this node."

```

```
 ::= { ibmappnCcos 3 }
```

```

ibmappnCcosNodeRowEntry OBJECT-TYPE
    SYNTAX IbmapppnCcosNodeRowEntry
    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."

::= { ibmappnCspNetRowEntry 3 }

ibmappnCspNetRowResistMin 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."

::= { ibmappnCspNetRowEntry 4 }

ibmappnCspNetRowResistMax 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."

::= { ibmappnCspNetRowEntry 5 }

ibmappnCspNetRowMinCongestAllow 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."

::= { ibmappnCspNetRowEntry 6 }

ibmappnCspNetRowMaxCongestAllow 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."

```
::= { ibmappnCcosNodeRowEntry 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)
--
```

ibmappnCcosTgRowTable OBJECT-TYPE

SYNTAX SEQUENCE OF IbmappnCcosTgRowEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION

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

```
::= { ibmappnCcos 4 }
```

ibmappnCcosTgRowEntry OBJECT-TYPE

SYNTAX IbmappnCcosTgRowEntry

ACCESS not-accessible

STATUS mandatory

DESCRIPTION

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

INDEX

```
{ibmappnCcosTgRowName,
 ibmappnCcosTgRowIndex}
```

```

 ::= { 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



