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

This module contains managed objects which describe the following:

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

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

2.0 Definitions

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

  IMPORTS

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

          DisplayString
                 FROM RFC1213-MIB

          OBJECT-TYPE
                 FROM RFC-1212;



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

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

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

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


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

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


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

        ::=  { ibmappnGeneralInfoAndCaps 1 }

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

        ::=  { ibmappnGeneralInfoAndCaps 2 }

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

        ::=  { ibmappnGeneralInfoAndCaps 3 }

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

```
            sub-area."

        ::=  { ibmappnGeneralInfoAndCaps 4 }

  ibmappnNodeType  OBJECT-TYPE
        SYNTAX INTEGER {
                       networkNode(1),
                       endNode(2),
                       len(4)
                       }
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
             "Type of APPN node, either network, len, or end node."

        ::=  { ibmappnGeneralInfoAndCaps 5 }

  ibmappnNodeUpTime  OBJECT-TYPE
        SYNTAX TimeTicks
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
            "Time (in hundredths of a second) since this APPN node
             was initialized."

        ::=  { ibmappnGeneralInfoAndCaps 6 }

  ibmappnNodeNegotLs   OBJECT-TYPE
        SYNTAX INTEGER {yes(1), no(2)}
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
             "Indicates whether this node supports negotiable
              link stations."

        ::=  { ibmappnGeneralInfoAndCaps 7 }

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

        ::=  { ibmappnGeneralInfoAndCaps 8 }
```

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

        ::=  { ibmappnGeneralInfoAndCaps 9 }

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

        ::=  { ibmappnGeneralInfoAndCaps 10 }

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

        ::=  { ibmappnGeneralInfoAndCaps 11 }

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

        ::=  { ibmappnGeneralInfoAndCaps 12 }



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

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

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

        ::=  { ibmappnNnUniqueInfoAndCaps 1 }

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

        ::=  { ibmappnNnUniqueInfoAndCaps 2 }

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

        ::=  { ibmappnNnUniqueInfoAndCaps 3 }

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

        ::=  { ibmappnNnUniqueInfoAndCaps 4 }

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

        ::=  { ibmappnNnUniqueInfoAndCaps 5 }

  ibmappnNodeNnRouteAddResist   OBJECT-TYPE
```

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

        ::=  { ibmappnNnUniqueInfoAndCaps 6 }

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

        ::=  { ibmappnNnUniqueInfoAndCaps 7 }

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

        ::=  { ibmappnNnUniqueInfoAndCaps 8 }


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

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

```
        ::=  { ibmappnEnUniqueCaps 1 }

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

        ::=  { ibmappnEnUniqueCaps 2 }

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

        ::=  { ibmappnEnUniqueCaps 3 }

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

                NO  - do not register names
                YES - register names"

        ::=  { ibmappnEnUniqueCaps 4 }

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

        ::=  { ibmappnEnUniqueCaps 5 }
```

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


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

        ::= { ibmappnPortInformation 1 }

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

        INDEX
               { ibmappnNodePortName }

        ::= { ibmappnNodePortTable 1 }

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

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


  ibmappnNodePortName OBJECT-TYPE
```

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

        ::=  { ibmappnNodePortEntry 1 }

  ibmappnNodePortState        OBJECT-TYPE
        SYNTAX INTEGER    {
                           inactive(1),
                           pendactive(2),
                           active(3),
                           pendinact(4)
                           }
        ACCESS read-write
        STATUS mandatory
        DESCRIPTION
             "Indicates the current state of this port."

        ::=  { ibmappnNodePortEntry 2 }

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

        ::=  { ibmappnNodePortEntry 3 }

  ibmappnNodePortPortType  OBJECT-TYPE
        SYNTAX INTEGER {
                        leased(1),
                        switched(2),
                        sharedAccessFacilities(3)
                 }
        ACCESS read-only
        STATUS mandatory
```

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

        ::=  { ibmappnNodePortEntry 4 }

  ibmappnNodePortSIMRIM  OBJECT-TYPE
        SYNTAX INTEGER {yes(1), no(2)}
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
             "Indicates whether Set Initialization Mode (SIM) and
              Receive Initialization Mode (RIM) are supported."

        ::=  { ibmappnNodePortEntry 5 }

  ibmappnNodePortLsRole OBJECT-TYPE
        SYNTAX INTEGER {
                       primary(1),
                       secondary(2),
                       negotiable(3),
                       abm(4)
               }
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
            "Initial role for LSs activated through this port,
             where 'abm' indicates asynchronous balance mode."

        ::=  { ibmappnNodePortEntry 6 }

  ibmappnNodePortMaxRcvBtuSize OBJECT-TYPE
        SYNTAX INTEGER
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
            "Maximum Basic Transmission Size (BTU) that a
             link station on this port can receive."

        ::=  { ibmappnNodePortEntry 7 }

  ibmappnNodePortMaxIframeWindow OBJECT-TYPE
        SYNTAX INTEGER
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
            "Maximum number of I-frames that can be received
             by the XID sender before an acknowledgement is received."
```

```
        ::=  { ibmappnNodePortEntry 8 }

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

        ::=  { ibmappnNodePortEntry 9 }

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

        ::=  { ibmappnNodePortEntry 10 }

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

        ::=  { ibmappnNodePortEntry 11 }

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

        ::=  { ibmappnNodePortEntry 12 }

  ibmappnNodePortSpecific OBJECT-TYPE
        SYNTAX OBJECT IDENTIFIER
```

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

        ::=  { ibmappnNodePortEntry 13 }



  -- ************************************************************
  --
  --

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

        ::= { ibmappnPortInformation 2 }

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

        INDEX
               {ibmappnNodePortIpName }

        ::= { ibmappnNodePortIpTable 1 }

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

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

```
        ::=  { ibmappnNodePortIpEntry 1 }

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

        ::=  { ibmappnNodePortIpEntry 2 }



  -- ************************************************************
  --
  --

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

        ::= { ibmappnPortInformation 3 }

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

        INDEX
               {ibmappnNodePortDlsName }

        ::= { ibmappnNodePortDlsTable 1 }

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

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

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

        ::=  { ibmappnNodePortDlsEntry 1 }

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

        ::=  { ibmappnNodePortDlsEntry 2 }

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

        ::=  { ibmappnNodePortDlsEntry 3 }



  -- ************************************************************
  --
  --

  ibmappnNodePortTrTable OBJECT-TYPE
        SYNTAX SEQUENCE OF IbmappnNodePortTrEntry
        ACCESS not-accessible
        STATUS mandatory
        DESCRIPTION
             "Port table (Token Ring specific)."

        ::= { ibmappnPortInformation 4 }

  ibmappnNodePortTrEntry OBJECT-TYPE
        SYNTAX IbmappnNodePortTrEntry
        ACCESS not-accessible
        STATUS mandatory
        DESCRIPTION
             "The TR Name is used as the index to this table."

        INDEX
               {ibmappnNodePortTrName }
```

```
        ::= { ibmappnNodePortTrTable 1 }

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

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

        ::=  { ibmappnNodePortTrEntry 1 }

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

        ::=  { ibmappnNodePortTrEntry 2 }

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

        ::=  { ibmappnNodePortTrEntry 3 }


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

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

```
        ::= { ibmappnPortInformation 5 }

  ibmappnNodePortDlcTraceEntry OBJECT-TYPE
        SYNTAX IbmappnNodePortDlcTraceEntry
        ACCESS not-accessible
        STATUS mandatory
        DESCRIPTION
             "The Port name and a dynamic integer are the index to
             this table."

        INDEX
               {ibmappnNodePortDlcTracPortName,
                ibmappnNodePortDlcTracIndex}

        ::= { ibmappnNodePortDlcTraceTable 1 }

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

  ibmappnNodePortDlcTracPortName OBJECT-TYPE
        SYNTAX  DisplayString
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
              "The Port name associated with this this trace table entry."

        ::=  { ibmappnNodePortDlcTraceEntry 1 }

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

```
              retrieve only the new table entries."

       ::=  { ibmappnNodePortDlcTraceEntry 2 }

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

       ::=  { ibmappnNodePortDlcTraceEntry 3 }

  ibmappnNodePortDlcTracLocalAddr OBJECT-TYPE
       SYNTAX DisplayString
       ACCESS read-only
       STATUS mandatory
       DESCRIPTION
            "Local address in format described below:

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

       ::=  { ibmappnNodePortDlcTraceEntry 4 }


  ibmappnNodePortDlcTracRemoteAddr OBJECT-TYPE
       SYNTAX DisplayString
       ACCESS read-only
       STATUS mandatory
       DESCRIPTION
            "Remote Address in the format described below:
            other    = free form DisplayString
            ip       = ld. ld. ld. ld / 2d
            tr       = lx: lx: lx: lx: lx: lx . lx
            dlsw     = lx: lx: lx: lx: lx: lx . lx
```

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

       ::=  { ibmappnNodePortDlcTraceEntry 5 }


  ibmappnNodePortDlcTracMsgType OBJECT-TYPE
        SYNTAX INTEGER    {
  --              enumeration values between 1 and 1999 are reserved
  --              for potential undefined message types.
                          other(1),
                          unknown(2),
                          request(3),
                          confirm(4),
                          indication(5),
                          response(6)

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



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



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


                          }
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
              "Indicates the type of trace record entry"

        ::=  { ibmappnNodePortDlcTraceEntry 6 }

  ibmappnNodePortDlcTracCmdType OBJECT-TYPE
        SYNTAX INTEGER    {
  --              enumeration values between 1 and 1999 are reserved
  --              for potential undefined message types.

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

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

  --            enumeration values between 2000 and 3999 are reserved
  --            for IP socket traces.
                        ipTestFrame(2001),
                        ipRespFrame(2002),
                        ipCurFrame(2003),
                        ipIcrFrame(2004),
                        ipRespAck(2005),
                        ipDgrmFrame(2006),
                        ipXidFrame(2007),
                        ipContFrame(2008),
                        ipContedFrame(2009),
                        ipIFrame(2010),
                        ipEnterBusy(2012),
                        ipExitBusy(2013),
                        ipHaltFrame(2014),
                        ipLsHalted(2015),
                        ipRestartLs(2016),
                        ipLsRestarted(2017),
                        ipNetBioSnq(2018),
                        ipNetBioSnr(2019),
                        ipGnetFrame(2020),
                        ipNetdFrame(2021),
                        ipOobFrame(2022),
                        ipAlterSap(2023),
                        ipTestRsp(2024),
                        ipHaltLsNow(2025),
```

```
                        ipTestReq(2026),

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

                        dlsIpm(4124),

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

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

        ::=  { ibmappnNodePortDlcTraceEntry 7 }

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

```
                        useWan(4),
                        useLan(5)
                        }
      ACCESS read-only
      STATUS mandatory
      DESCRIPTION
            "Indicates the type of connection of the trace entry.
            For example, token ring and ethernet ports will have
            useLan as connection.  For the dls port, it could be
            either useWan if connection is across Wan via dls
            sessions, or useLan if connection is to a local attached
            LAN."

      ::=  { ibmappnNodePortDlcTraceEntry 8 }



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


ibmappnNodeLsTable OBJECT-TYPE
      SYNTAX SEQUENCE OF IbmappnNodeLsEntry
      ACCESS not-accessible
      STATUS mandatory
      DESCRIPTION
           "This table contains detail information about the
            link station configuration and current status."

      ::= { ibmappnLinkStationInformation 1 }

ibmappnNodeLsEntry OBJECT-TYPE
      SYNTAX IbmappnNodeLsEntry
      ACCESS not-accessible
      STATUS mandatory
      DESCRIPTION
           "This table is indexed by the link station name."

      INDEX
             { ibmappnNodeLsName }

      ::= { ibmappnNodeLsTable 1 }

IbmappnNodeLsEntry ::= SEQUENCE {
      ibmappnNodeLsName             DisplayString,
      ibmappnNodeLsPortName         DisplayString,
      ibmappnNodeLsDlcType          INTEGER,
```

```
        ibmappnNodeLsDynamic          INTEGER,
        ibmappnNodeLsState            INTEGER,
    -- ls defined data   / xid info
        ibmappnNodeLsCpName           DisplayString,
        ibmappnNodeLsTgNum            INTEGER,
        ibmappnNodeLsLimResource      INTEGER,
        ibmappnNodeLsMigration        INTEGER,
        ibmappnNodeLsBlockNum         DisplayString,
        ibmappnNodeLsIdNum            DisplayString,
        ibmappnNodeLsCpCpSession      INTEGER,
    -- ls parms   (common) / xid info
        ibmappnNodeLsTargetPacingCount INTEGER,
        ibmappnNodeLsMaxSendBtuSize    INTEGER,
    -- tg characteristics
        ibmappnNodeLsEffCap           INTEGER,
        ibmappnNodeLsConnCost         INTEGER,
        ibmappnNodeLsByteCost         INTEGER,
        ibmappnNodeLsSecurity         INTEGER,
        ibmappnNodeLsDelay            INTEGER,
        ibmappnNodeLsUsr1             INTEGER,
        ibmappnNodeLsUsr2             INTEGER,
        ibmappnNodeLsUsr3             INTEGER,
    -- ls      (performance data)
        ibmappnNodeLsInXidBytes       Counter,
        ibmappnNodeLsInMsgBytes       Counter,
        ibmappnNodeLsInXidFrames      Counter,
        ibmappnNodeLsInMsgFrames      Counter,
        ibmappnNodeLsOutXidBytes      Counter,
        ibmappnNodeLsOutMsgBytes      Counter,
        ibmappnNodeLsOutXidFrames     Counter,
        ibmappnNodeLsOutMsgFrames     Counter,
    -- ls       (propgation 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 hexideimal digits identify the product and are not
            configurable."

        ::=  { ibmappnNodeLsEntry 10 }

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

        ::=  { ibmappnNodeLsEntry 11 }

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

        ::=  { ibmappnNodeLsEntry 12 }

  ibmappnNodeLsTargetPacingCount  OBJECT-TYPE
        SYNTAX INTEGER
```

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

        ::=  { ibmappnNodeLsEntry 13 }

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

        ::=  { ibmappnNodeLsEntry 14 }

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

        ::=  { ibmappnNodeLsEntry 15 }

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

```
        ::=  { ibmappnNodeLsEntry 16 }

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

        ::=  { ibmappnNodeLsEntry 17 }

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

        ::=  { ibmappnNodeLsEntry 18 }

  ibmappnNodeLsDelay  OBJECT-TYPE
        SYNTAX INTEGER {
                       minimum(0),                --X'00'
                       negligible(384),           --X'4C'
                       terrestrial(9216),         --X'71'
                       packet(147456),            --X'91'
                       long(294912),              --X'99'
                       maximum(2013265920)        --X'FF'
               }
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
             "Relative amount of time that it takes for a signal to
```

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

       ::=  { ibmappnNodeLsEntry 19 }

  ibmappnNodeLsUsr1  OBJECT-TYPE
       SYNTAX INTEGER (0..255)
       ACCESS read-only
       STATUS mandatory
       DESCRIPTION
           "First user-defined TG characteristic for this TG with
            a range of 0-255.
            This is an administratively assigned value associated
            with the TG using this link station."

       ::=  { ibmappnNodeLsEntry 20 }

  ibmappnNodeLsUsr2  OBJECT-TYPE
       SYNTAX INTEGER (0..255)
       ACCESS read-only
       STATUS mandatory
       DESCRIPTION
           "Second user-defined TG characteristic for this TG with
            a range of 0-255.
            This is an administratively assigned value associated
            with the TG using this link station."

       ::=  { ibmappnNodeLsEntry 21 }

  ibmappnNodeLsUsr3  OBJECT-TYPE
       SYNTAX INTEGER (0..255)
       ACCESS read-only
       STATUS mandatory
       DESCRIPTION
           "Third user-defined TG characteristic for this TG with
            a range of 0-255.
            This is an administratively assigned value associated
            with the TG using this link station."

       ::=  { ibmappnNodeLsEntry 22 }

  ibmappnNodeLsInXidBytes OBJECT-TYPE
       SYNTAX Counter
       ACCESS read-only
       STATUS mandatory
```

```
        DESCRIPTION
             "Number of XID bytes received."

        ::=  { ibmappnNodeLsEntry 23 }

  ibmappnNodeLsInMsgBytes OBJECT-TYPE
        SYNTAX Counter
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
             "Number of message (I-frame) bytes received."

        ::=  { ibmappnNodeLsEntry 24 }

  ibmappnNodeLsInXidFrames OBJECT-TYPE
        SYNTAX Counter
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
             "Number of XID frames received."

        ::=  { ibmappnNodeLsEntry 25 }

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

        ::=  { ibmappnNodeLsEntry 26 }

  ibmappnNodeLsOutXidBytes OBJECT-TYPE
        SYNTAX Counter
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
             "Number of XID bytes sent."

        ::=  { ibmappnNodeLsEntry 27 }

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

```
        ::=  { ibmappnNodeLsEntry 28 }

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

        ::=  { ibmappnNodeLsEntry 29 }

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

        ::=  { ibmappnNodeLsEntry 30 }

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

        ::=  { ibmappnNodeLsEntry 31 }

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

        ::=  { ibmappnNodeLsEntry 32 }

  ibmappnNodeLsMaxDelay      OBJECT-TYPE
```

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

        ::=  { ibmappnNodeLsEntry 33 }

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

        ::=  { ibmappnNodeLsEntry 34 }

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

        ::=  { ibmappnNodeLsEntry 35 }

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

        ::=  { ibmappnNodeLsEntry 36 }

  ibmappnNodeLsBadXids    OBJECT-TYPE
      SYNTAX  Counter
```

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

        ::=  { ibmappnNodeLsEntry 37 }

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

        ::=  { ibmappnNodeLsEntry 38 }

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

        ::=  { ibmappnNodeLsEntry 39 }

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

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

      ::=  { ibmappnNodeLsEntry 40 }

  ibmappnNodeLsActiveTime    OBJECT-TYPE
      SYNTAX TimeTicks
      ACCESS read-only
      STATUS mandatory
      DESCRIPTION
           "The time (in hundredth of seconds) this link station
            has been in the active state.
            A zero value indicates the link station has never been
            active."

      ::=  { ibmappnNodeLsEntry 41 }

  ibmappnNodeLsCurrentStateTime  OBJECT-TYPE
      SYNTAX TimeTicks
      ACCESS read-only
      STATUS mandatory
      DESCRIPTION
           "The time (in hundredth of seconds) the link station is
            in the current state."

      ::=  { ibmappnNodeLsEntry 42 }


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

  ibmappnNodeLsIpTable OBJECT-TYPE
      SYNTAX SEQUENCE OF IbmappnNodeLsIpEntry
      ACCESS not-accessible
      STATUS mandatory
      DESCRIPTION
          "Link station table (TCP/IP specific)."

      ::= { ibmappnLinkStationInformation 2 }

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

```
        INDEX
               {ibmappnNodeLsIpName }

        ::= { ibmappnNodeLsIpTable 1 }

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

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

        ::=  { ibmappnNodeLsIpEntry 1 }

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

        ::=  { ibmappnNodeLsIpEntry 2 }

  ibmappnNodeLsLocalIpAddr OBJECT-TYPE
        SYNTAX IpAddress
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
             "Local IP address."

        ::=  { ibmappnNodeLsIpEntry 3 }

  ibmappnNodeLsLocalIpPortNum OBJECT-TYPE
```

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

        ::=  { ibmappnNodeLsIpEntry 4 }



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

        ::=  { ibmappnNodeLsIpEntry 5 }

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

        ::=  { ibmappnNodeLsIpEntry 6 }



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

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

        ::= { 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 IbmappnNodeLsStatusEntry
        ACCESS not-accessible
        STATUS mandatory
        DESCRIPTION
             "This table contains information related to exceptional
              and potential exceptional conditions that occur during
              the activation, XID exchange, and termination of the
              connection."

        ::= { ibmappnLinkStationInformation 5 }
```

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

        INDEX
               { ibmappnNodeLsStatusIndex }

        ::= { ibmappnNodeLsStatusTable 1 }

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


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

        ::=  { ibmappnNodeLsStatusEntry 1 }

  ibmappnNodeLsStatusTime    OBJECT-TYPE
        SYNTAX TimeTicks
        ACCESS read-only
```

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

        ::=  { ibmappnNodeLsStatusEntry 2 }


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

        ::=  { ibmappnNodeLsStatusEntry 3 }

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

        ::=  { ibmappnNodeLsStatusEntry 4 }

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


        ::=  { ibmappnNodeLsStatusEntry 5 }

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

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

       ::=  { ibmappnNodeLsStatusEntry 6 }

  ibmappnNodeLsStatusGeneralSense OBJECT-TYPE
       SYNTAX OCTET STRING
       ACCESS read-only
       STATUS mandatory
       DESCRIPTION
           "The error sense code associated with the start sequence of
            activation of a link up to the beginning of the XID
            sequence."

       ::=  { ibmappnNodeLsStatusEntry 7 }

  ibmappnNodeLsStatusNofRetry OBJECT-TYPE
       SYNTAX INTEGER    {
                           retry(1),
                           noretry(2)
                         }
       ACCESS read-only
       STATUS mandatory
       DESCRIPTION
           "Indicates whether Node Operator Facility will retry the
           start request to activate the link."

       ::=  { ibmappnNodeLsStatusEntry 8 }

  ibmappnNodeLsStatusEndSense OBJECT-TYPE
       SYNTAX OCTET STRING
       ACCESS read-only
       STATUS mandatory
       DESCRIPTION
           "The sense code associated with the termination of the link
            connection to adjacent node.  This includes all sense
            information included in the disconnect 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       = ld. ld. ld. ld / 2d

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

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

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

             "

        ::=  { ibmappnNodeLsStatusEntry 14 }

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

        ::=  { ibmappnNodeLsStatusEntry 15 }

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

        ::=  { ibmappnNodeLsStatusEntry 16 }



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

```
  --

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

        ::=  { ibmappnSnmpInformation 1 }

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

        ::=  { ibmappnSnmpInformation 2 }

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

        ::=  { ibmappnSnmpInformation 3 }

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

        ::=  { ibmappnSnmpInformation 4 }

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

```
        ::=  { ibmappnSnmpInformation 5 }

  ibmappnSnmpInGetVars OBJECT-TYPE
        SYNTAX Counter
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
            "Total number of VARIBLES 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 VARIBLES included in all
              SET requests to the APPN SNMP sub-agent."

        ::=  { ibmappnSnmpInformation 8 }

  ibmappnSnmpOutNoSuchNames OBJECT-TYPE
        SYNTAX Counter
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
             "Total number of VARIABLES that could not
              be found by the APPN SNMP sub-agent."

        ::=  { ibmappnSnmpInformation 9 }

  ibmappnSnmpOutGenErrs OBJECT-TYPE
        SYNTAX Counter
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
             "Total number of undefined errors that
```

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

       ::=  { ibmappnSnmpInformation 10 }


  -- ************************************************************

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

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


  ibmappnMemorySize OBJECT-TYPE
        SYNTAX INTEGER
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
             "Size of the shared storage segment, as obtained
              by storage management from the underlying operating
              system."

        ::=  { ibmappnMemoryUse 1 }

  ibmappnMemoryUsed OBJECT-TYPE
        SYNTAX INTEGER
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
             "Number of bytes in the segment that are currently
              allocated to process."

        ::=  { ibmappnMemoryUse 2 }

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

        ::=  { ibmappnMemoryUse 3 }

  ibmappnMemoryCritThresh OBJECT-TYPE
```

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

        ::=  { ibmappnMemoryUse 4 }


  -- ************************************************************
  -- The following are Counters maintained by the APPN CS component that
  -- relate to total overall XID activity.
  ----------------------------------------------------------------------
  ibmappnNodeDefLsGoodXids    OBJECT-TYPE
      SYNTAX  Counter
      ACCESS  read-only
      STATUS  mandatory
      DESCRIPTION
              "The current number of successfull XIDs that have occurred
               on all defined link stations since the last time this
               node was initialized."

      ::= { ibmappnXidInformation 1 }

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

      ::= { ibmappnXidInformation 2 }

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

      ::= { ibmappnXidInformation 3 }
```

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

      ::= { ibmappnXidInformation 4 }



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

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


  -- This group will be used to represent the entire APPN network
  -- topology, including Network nodes, virtual nodes and
  -- all TGs associated with these nodes.
  --

  -- Network nodes
  -- The APPN topology database consists of information about every
  -- APPN network node.  This information is learned over time
  -- as each network node exchanges topology information with
  -- each of its adjacent network nodes.  The database consists
  -- of information about each node and all of the transmissions
  -- groups used by each node.

  -- Virtual nodes
  -- Information about virtual nodes (connection networks) is treated
  -- the same as information about network node
  -- and is replicated at each network node.
  -- The node name is the only meaningful information. The other
  -- node objects use default values.  Each node that has defined
  -- a TG with this virtual node as the destination also defines a
  -- TG on this virtual node.  There is a TG record for each node
  -- that uses this virtual node.
  --
  --
  -- The APPN node table represents the APPN topology
  -- database with the APPN CP fully-qualified name
  -- being used as the index to this table.
  -- This entire table could be retrieved using the GET NEXT command,
```

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



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

        ::=  { ibmappnNnTopo 1 }

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

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

        ::=  { ibmappnNnTopo 2 }

  ibmappnNnTopoInTdus OBJECT-TYPE
        SYNTAX Counter
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
             "Total number of TDUs received from
             all adjacent NN since last initialization."

        ::=  { ibmappnNnTopo 3 }

  ibmappnNnTopoOutTdus OBJECT-TYPE
        SYNTAX Counter
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
             "Total number of TDUs built by this node to be sent to
             all adjacent NN since last initialization."

        ::=  { ibmappnNnTopo 4 }

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

        ::=  { ibmappnNnTopo 5 }

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

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

        ::=  { ibmappnNnTopo 6 }

  ibmappnNnTopoNodeGoodHighRsns      OBJECT-TYPE
        SYNTAX Counter
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
             "Total number of topology node updates received by this
             node with a RSN greater than the current RSN.
             This results in updating this nodes topology and
             broadcasting a TDU to all adjacent network nodes.  It is
             not required to send a TDU to the sender of this update
             because that node already has the update."

        ::=  { ibmappnNnTopo 7 }



  ibmappnNnTopoNodeBadHighRsns       OBJECT-TYPE
        SYNTAX Counter
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
             "Total number of topology node updates received by this
             node with an odd RSN greater than the current RSN.
             These updates represent a topology inconsistency detected
             by one of the APPN network nodes.
             This results in updating this nodes topology and broadcasting
             a TDU to all adjacent network nodes."

        ::=  { ibmappnNnTopo 8 }


  ibmappnNnTopoNodeStateUpdates  OBJECT-TYPE
        SYNTAX Counter
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
             "Total number of topology Node records built as a result
```

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

       ::=  { ibmappnNnTopo 9 }

  ibmappnNnTopoNodeErrors     OBJECT-TYPE
       SYNTAX Counter
       ACCESS read-only
       STATUS mandatory
       DESCRIPTION
            "Total number of topology node records inconsistencies
             detected by this node.  This occurs when this node attempts
             to update its topology database and detects a data
             inconsistency.  This node will create a TDU with the
             current RSN incremented to the next odd number and
             broadcast it to all adjacent NNs."

       ::=  { ibmappnNnTopo 10 }

  ibmappnNnTopoNodeTimerUpdates OBJECT-TYPE
       SYNTAX Counter
       ACCESS read-only
       STATUS mandatory
       DESCRIPTION
            "Total number of topology node records built for this
             node's resource due to timer updates. Updates are sent via
             TDUs to all adjacent network nodes. These updates insure
             other network nodes do not delete this node's resources
             from their topology database."

       ::=  { ibmappnNnTopo 11 }

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

       ::=  { ibmappnNnTopo 12 }


  ibmappnNnTopoTgLowRsns         OBJECT-TYPE
```

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

        ::=  { ibmappnNnTopo 13 }

  ibmappnNnTopoTgEqualRsns       OBJECT-TYPE
        SYNTAX Counter
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
             "Total number of topology TG updates received by this
             node with a RSN equal to the current RSN.  Both even and
             odd RSN are included in this count.
             These TDUs are not errors, but result when TDUs are
             broadcast to all adjacent network nodes.  No update to
             this node's topology database occurs."

        ::=  { ibmappnNnTopo 14 }

  ibmappnNnTopoTgGoodHighRsns       OBJECT-TYPE
        SYNTAX Counter
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
             "Total number of topology TG updates received by this
             node with a RSN greater than the current RSN.
             This results in updating this nodes topology and
             broadcasting the update to all adjacent network nodes."

        ::=  { ibmappnNnTopo 15 }


  ibmappnNnTopoTgBadHighRsns      OBJECT-TYPE
        SYNTAX Counter
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
             "Total number of topology TG updates received by this
```

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

      ::=  { ibmappnNnTopo 16 }


  ibmappnNnTopoTgStateUpdates  OBJECT-TYPE
      SYNTAX Counter
      ACCESS read-only
      STATUS mandatory
      DESCRIPTION
           "Total number of topology TG records built as a result
            of internally detected node state changes that affect APPN
            topology and routing.  Updates are sent via TDUs to all
            adjacent network nodes."

      ::=  { ibmappnNnTopo 17 }

  ibmappnNnTopoTgErrors     OBJECT-TYPE
      SYNTAX Counter
      ACCESS read-only
      STATUS mandatory
      DESCRIPTION
           "Total number of topology TG records inconsistencies
            detected by this node.  This occurs when this node
            attempts to update its topology database and detects a
            data inconsistency.  This node will create a TDU with
            the current RSN incremented to the next odd number and
            broadcast it to all adjacent NNs."

      ::=  { ibmappnNnTopo 18 }

  ibmappnNnTopoTgTimerUpdates OBJECT-TYPE
      SYNTAX Counter
      ACCESS read-only
      STATUS mandatory
      DESCRIPTION
           "Total number of topology TG records built for this
            node's resource due to timer updates. Updates are sent via
            TDUs to all adjacent network nodes. These updates insure
            other network nodes do not delete this node's resources
            from their topology database."

      ::=  { ibmappnNnTopo 19 }
```

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

        ::=  { ibmappnNnTopo 20 }


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

        ::=  { ibmappnNnTopo 21 }

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

        ::=  { ibmappnNnTopo 22 }


  ibmappnNnTopoRouteTable OBJECT-TYPE
        SYNTAX SEQUENCE OF IbmappnNnTopoRouteEntry
        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 IbmappnNnAdjNodeEntry
        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 IbmappnNnAdjNodeEntry
        ACCESS not-accessible
        STATUS mandatory
        DESCRIPTION
              "The adjacent node name is the index for this table."

        INDEX
               {ibmappnNnAdjNodeAdjName}

        ::= { ibmappnNnAdjNodeTable 1 }

  IbmappnNnAdjNodeEntry ::= SEQUENCE {
        ibmappnNnAdjNodeAdjName            DisplayString,
        ibmappnNnAdjNodeCpCpSessStatus     INTEGER,
        ibmappnNnAdjNodeOutOfSeqTdus       Gauge,
```

```
        ibmappnNnAdjNodeLastFrsnSent       INTEGER,
        ibmappnNnAdjNodeLastFrsnRcvd       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 sessons 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 out of sequence Topology Database
             Updates (TDUs).  In a quiesced state, this value is
             zero.  In normal operation, the value varies
             depending on the network environment."

        ::=  { ibmappnNnAdjNodeEntry 3 }
```

```
  ibmappnNnAdjNodeLastFrsnSent  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 }

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

        ::=  { ibmappnNnAdjNodeEntry 5 }


  --APPN Node Topology table

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


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

        ::= { ibmappnNnTopology 1 }

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

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

        INDEX
               {ibmappnNnNodeName}

        ::= { ibmappnNnTopologyTable 1 }

  IbmappnNnTopologyEntry  ::= SEQUENCE {

        ibmappnNnNodeName                     DisplayString,
        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 IbmappnNnTgTopologyEntry
        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 }

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

        ::=  { ibmappnNnTgTopologyEntry 4 }

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

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

        ::=  { ibmappnNnTgTopologyEntry 5 }

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

        ::=  { ibmappnNnTgTopologyEntry 6 }

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

        ::=  { ibmappnNnTgTopologyEntry 7 }

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

        ::=  { ibmappnNnTgTopologyEntry 8 }

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

```
            is operational."

       ::=  { ibmappnNnTgTopologyEntry 9 }

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

       ::=  { ibmappnNnTgTopologyEntry 10 }

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

       ::=  { ibmappnNnTgTopologyEntry 11 }


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

       ::=  { ibmappnNnTgTopologyEntry 12 }

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

```
            with this TG."

      ::=  { ibmappnNnTgTopologyEntry 13 }

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

      ::=  { ibmappnNnTgTopologyEntry 14 }

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

      ::=  { ibmappnNnTgTopologyEntry 15 }

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

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


        ::=  { ibmappnNnTgTopologyEntry 16 }

  ibmappnNnTgModemClass        OBJECT-TYPE
        SYNTAX INTEGER (0..65535)
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
             "This is used to have multiple images for a
              connection network.  For a connection network
             it is the same as in the TG vector; for
             a non-connection network it is X'00'."

        ::=  { ibmappnNnTgTopologyEntry 17 }

  ibmappnNnTgUsr1  OBJECT-TYPE
        SYNTAX INTEGER (0..255)
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
            "First user-defined TG characteristic for this TG with
             a range of 0-255.
             This is an administratively assigned value associated
             with this TG."

        ::=  { ibmappnNnTgTopologyEntry 18 }

  ibmappnNnTgUsr2  OBJECT-TYPE
        SYNTAX INTEGER (0..255)
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
            "Second user-defined TG characteristic for this TG with
             a range of 0-255.
             This is an administratively assigned value associated
             with this TG."

        ::=  { ibmappnNnTgTopologyEntry 19 }
```

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

        ::=  { ibmappnNnTgTopologyEntry 20 }


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

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


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

        ::= { ibmappnNnTopology 3 }

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

        INDEX
               {ibmappnNnNodeFRFrsn,
                ibmappnNnNodeFRName}

        ::= { ibmappnNnTopologyFRTable 1 }

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

```
        ibmappnNnNodeFRType                     INTEGER,

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

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

        ::=  { ibmappnNnTopologyFREntry 1 }

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

        ::=  { ibmappnNnTopologyFREntry 2 }

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

        ::=  { ibmappnNnTopologyFREntry 3 }
```

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

        ::=  { ibmappnNnTopologyFREntry 4 }

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

        ::=  { ibmappnNnTopologyFREntry 5 }

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

        ::=  { ibmappnNnTopologyFREntry 6 }

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

         ::= { ibmappnNnTopologyFREntry 7 }
```

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

        ::=  { ibmappnNnTopologyFREntry 8 }

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

        ::=  { ibmappnNnTopologyFREntry 9 }

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

        ::=  { ibmappnNnTopologyFREntry 10 }

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

        ::=  { ibmappnNnTopologyFREntry 11 }

  ibmappnNnNodeFRCentralDirectory OBJECT-TYPE
        SYNTAX INTEGER {yes(1), no(2)}
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
             "Indicates whether the node is central directory."
        ::=  { ibmappnNnTopologyFREntry 12 }
```

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

        ::=  { ibmappnNnTopologyFREntry 13 }

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

        ::=  { ibmappnNnTopologyFREntry 14 }


  --APPN transmission group (TG) table

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


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

        ::= { ibmappnNnTopology 4 }

  ibmappnNnTgTopologyFREntry OBJECT-TYPE
        SYNTAX IbmappnNnTgTopologyFREntry
        ACCESS not-accessible
        STATUS mandatory
        DESCRIPTION
             "This table is indexed by four columns:
              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,

        ibmappnNnTgFRRsn        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 IbmappnLocalTgEntry
```

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

        ::= { ibmappnLocalTg 1 }

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

        INDEX
               {ibmappnLocalTgDest,
                ibmappnLocalTgNum}

        ::= { ibmappnLocalTgTable 1 }

  IbmappnLocalTgEntry ::= SEQUENCE {

        ibmappnLocalTgDest       DisplayString,
        ibmappnLocalTgNum        INTEGER,
        ibmappnLocalTgDestVirtual INTEGER,
        ibmappnLocalTgDlcData    OCTET STRING,

        ibmappnLocalTgRsn        INTEGER,
        ibmappnLocalTgQuiescing  INTEGER,
        ibmappnLocalTgOperational INTEGER,
        ibmappnLocalTgCpCpSession INTEGER,
        ibmappnLocalTgEffCap     INTEGER,
        ibmappnLocalTgConnCost   INTEGER,
        ibmappnLocalTgByteCost   INTEGER,
        ibmappnLocalTgSecurity   INTEGER,
        ibmappnLocalTgDelay      INTEGER,
        ibmappnLocalTgModemClass INTEGER,
        ibmappnLocalTgUsr1       INTEGER,
        ibmappnLocalTgUsr2       INTEGER,
        ibmappnLocalTgUsr3       INTEGER
                                     }

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

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

        ::=  { ibmappnLocalTgEntry 1 }

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

        ::=  { ibmappnLocalTgEntry 2 }

  ibmappnLocalTgDestVirtual  OBJECT-TYPE
        SYNTAX INTEGER {yes(1), no(2)}
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
             "Indicates whether the destination node is
             a Virtual node."
        ::=  { ibmappnLocalTgEntry 3 }

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

        ::=  { ibmappnLocalTgEntry 4 }

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

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

       ::=  { ibmappnLocalTgEntry 5 }

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

       ::=  { ibmappnLocalTgEntry 6 }

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

       ::=  { ibmappnLocalTgEntry 7 }

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

       ::=  { ibmappnLocalTgEntry 8 }

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

       ::=  { ibmappnLocalTgEntry 9 }

  ibmappnLocalTgConnCost OBJECT-TYPE
```

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

        ::=  { ibmappnLocalTgEntry 10 }

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

        ::=  { ibmappnLocalTgEntry 11 }

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

        ::=  { ibmappnLocalTgEntry 12 }

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

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

        ::=  { ibmappnLocalTgEntry 13 }

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

        ::=  { ibmappnLocalTgEntry 14 }

  ibmappnLocalTgUsr1  OBJECT-TYPE
        SYNTAX INTEGER (0..255)
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
            "Value of the first user-defined TG
            characteristic for this TG.
            Range is 0-255."

        ::=  { ibmappnLocalTgEntry 15 }

  ibmappnLocalTgUsr2  OBJECT-TYPE
        SYNTAX INTEGER (0..255)
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
            "Value of the second user-defined TG
            characteristic for this TG.
            Range is 0-255."

        ::=  { ibmappnLocalTgEntry 16 }

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

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

        ::=  { ibmappnLocalTgEntry 17 }


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


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

        ::= { ibmappnLocalEnTopology 1 }

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

        INDEX
               {ibmappnLocalEnName}
        ::= { ibmappnLocalEnTable 1 }

  IbmappnLocalEnEntry ::= SEQUENCE {

        ibmappnLocalEnName                      DisplayString,
        ibmappnLocalEnEntryTimeLeft             INTEGER,
        ibmappnLocalEnType                      INTEGER
                             }

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

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

        ::=  { ibmappnLocalEnEntry 1 }

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

        ::=  { ibmappnLocalEnEntry 2 }

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

        ::=  { ibmappnLocalEnEntry 3 }


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

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

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

        ::= { ibmappnLocalEnTopology 2 }
```

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

        INDEX
               {ibmappnLocalEnTgOrigin,
                ibmappnLocalEnTgDest,
                ibmappnLocalEnTgNum}

        ::= { ibmappnLocalEnTgTable 1 }

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

        ibmappnLocalEnTgDestVirtual INTEGER,
        ibmappnLocalEnTgDlcData    OCTET STRING,

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

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

        ::=  { ibmappnLocalEnTgEntry 1 }
```

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

        ::=  { ibmappnLocalEnTgEntry 2 }

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

        ::=  { ibmappnLocalEnTgEntry 3 }

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

        ::=  { ibmappnLocalEnTgEntry 4 }

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

        ::=  { ibmappnLocalEnTgEntry 5 }

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

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

      ::=  { ibmappnLocalEnTgEntry 6 }

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

      ::=  { ibmappnLocalEnTgEntry 7 }

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

      ::=  { ibmappnLocalEnTgEntry 8 }

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

      ::=  { ibmappnLocalEnTgEntry 9 }

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

      ::=  { ibmappnLocalEnTgEntry 10 }
```

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

        ::=  { ibmappnLocalEnTgEntry 11 }

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

        ::=  { ibmappnLocalEnTgEntry 12 }

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

        ::=  { ibmappnLocalEnTgEntry 13 }

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

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

        ::=  { ibmappnLocalEnTgEntry 14 }

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

        ::=  { ibmappnLocalEnTgEntry 15 }

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

        ::=  { ibmappnLocalEnTgEntry 16 }

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

        ::=  { ibmappnLocalEnTgEntry 17 }


  -- ************** The APPN Directory group **********************
  ibmappnDir      OBJECT IDENTIFIER ::= { ibmappn 5  }
  ibmappnDirPerf  OBJECT IDENTIFIER ::= { ibmappnDir 1 }

  -- The APPN Directory Group

  -- The APPN Directory Database
```

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

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

    --  Serving Network Node Fully Qualified CP Name

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

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


  ibmappnDirMaxCaches OBJECT-TYPE
        SYNTAX INTEGER
        ACCESS read-only
        STATUS mandatory
        DESCRIPTION
             "Maximum number of cache entries allowed. This
             is an administratively assigned value."

        ::=  { ibmappnDirPerf 1 }

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

        ::=  { ibmappnDirPerf 2 }
```

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

        ::=  { ibmappnDirPerf 3 }

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

        ::=  { ibmappnDirPerf 4 }

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

        ::=  { ibmappnDirPerf 5 }

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

        ::=  { ibmappnDirPerf 6 }

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

        ::=  { ibmappnDirPerf 7 }

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

```
        STATUS mandatory
        DESCRIPTION
             "Number of broadcast locates sent."

        ::=  { ibmappnDirPerf 8 }

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

        ::=  { ibmappnDirPerf 9 }

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

        ::=  { ibmappnDirPerf 10 }

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

        ::=  { ibmappnDirPerf 11 }


  --APPN Directory table

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

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

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

       ::= { ibmappnDir 2 }

  ibmappnDirEntry OBJECT-TYPE
       SYNTAX IbmappnDirEntry
       ACCESS not-accessible
       STATUS mandatory
       DESCRIPTION
            "This table is indexed by the LU name."

       INDEX
              {ibmappnDirLuName}

       ::= { ibmappnDirTable 1 }

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

  ibmappnDirLuName          OBJECT-TYPE
       SYNTAX DisplayString  (SIZE (3..17))
       ACCESS read-only
       STATUS mandatory
       DESCRIPTION
           "Fully-qualified network LU name in the
            domain of the serving network node."

       ::=  { ibmappnDirEntry 1 }

  ibmappnDirServerName        OBJECT-TYPE
       SYNTAX DisplayString (SIZE (3..17))
       ACCESS read-only
       STATUS mandatory
       DESCRIPTION
            "Fully-qualified control point (CP) name of the
             network node server.  For unassociated end node
             entries, the end node fully-qualified name
             is returned."

       ::=  { ibmappnDirEntry 2 }
```

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

        ::=  { ibmappnDirEntry 3 }


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

        ::=  { ibmappnDirEntry 4 }

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

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

              3 - Register
```

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

        ::=  { ibmappnDirEntry 5 }


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

        ::=  { ibmappnDirEntry 6 }


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

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

  -- The APPN Class of Service (COS)

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

  -- for TGs and a COS weight table for Nodes.  These COS tables are
  -- administratively assigned at each APPN node with seven default tables
  -- being provided by IBM.
  --
  --
  --  COS Name
  --        Unqualified name identifying the class of service.
  --  Transmission priority
```

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

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

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


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

        ::= { ibmappnCos 1 }

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

        INDEX
               {ibmappnCosModeName}

        ::= { ibmappnCosModeTable 1 }

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

  ibmappnCosModeName              OBJECT-TYPE
```

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

        ::=  { ibmappnCosModeEntry 1 }

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

        ::=  { ibmappnCosModeEntry 2 }


  -- ************************************************************

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

        ::= { ibmappnCos 3 }

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

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

      INDEX
             {ibmappnCosNodeRowName,
              ibmappnCosNodeRowIndex}

      ::= { ibmappnCosNodeRowTable 1 }

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

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

      ::=  { ibmappnCosNodeRowEntry 1 }

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

      ::=  { ibmappnCosNodeRowEntry 2 }

--Node Row Group

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

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

      ::=  { ibmappnCosNodeRowEntry 3 }

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

      ::=  { ibmappnCosNodeRowEntry 4 }

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

      ::=  { ibmappnCosNodeRowEntry 5 }

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

      ::=  { ibmappnCosNodeRowEntry 6 }

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

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

       ::=  { ibmappnCosNodeRowEntry 7 }


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

  ibmappnCosTgRowTable OBJECT-TYPE
        SYNTAX SEQUENCE OF IbmappnCosTgRowEntry
        ACCESS not-accessible
        STATUS mandatory
        DESCRIPTION
             "Table containing all the Tg-row information for all
              class of service defined in this node."

        ::= { ibmappnCos 4 }

  ibmappnCosTgRowEntry OBJECT-TYPE
        SYNTAX IbmappnCosTgRowEntry
        ACCESS not-accessible
        STATUS mandatory
        DESCRIPTION
             "The TgRowName and the TgRowIndex are the index
             for this table."

        INDEX
               {ibmappnCosTgRowName,
                ibmappnCosTgRowIndex}
```

```
        ::= { ibmappnCosTgRowTable 1 }

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

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

        ::=  { ibmappnCosTgRowEntry 1 }

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

        ::=  { ibmappnCosTgRowEntry 2 }

  --TG Row

  ibmappnCosTgRowWgt       OBJECT-TYPE
```

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

        ::=  { ibmappnCosTgRowEntry 3 }

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

        ::=  { ibmappnCosTgRowEntry 4 }

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

        ::=  { ibmappnCosTgRowEntry 5 }

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

        ::=  { ibmappnCosTgRowEntry 6 }
```

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

        ::=  { ibmappnCosTgRowEntry 7 }

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

        ::=  { ibmappnCosTgRowEntry 8 }

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

        ::=  { ibmappnCosTgRowEntry 9 }

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

```
             for this Class of Service."

       ::=  { ibmappnCosTgRowEntry 10 }

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

       ::=  { ibmappnCosTgRowEntry 11 }

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

       ::=  { ibmappnCosTgRowEntry 12 }

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

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

        ::=  { ibmappnCosTgRowEntry 13 }

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

        ::=  { ibmappnCosTgRowEntry 14 }

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

        ::=  { ibmappnCosTgRowEntry 15 }

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

        ::=  { ibmappnCosTgRowEntry 16 }

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

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

        ::=  { ibmappnCosTgRowEntry 17 }

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

        ::=  { ibmappnCosTgRowEntry 18 }

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

        ::=  { ibmappnCosTgRowEntry 19 }

  END
```

3.0 Acknowledgements

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

4.0 Security Considerations

Security issues are not discussed in this memo.

5.0 Authors' Addresses

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

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

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

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