

# Tcpmon MIB Extension Version 0.1

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## 1. Solution

The idea is to extend the existing list of supported devices in TCPMON.INI with data about new network card models retrieved directly from the device using SNMP queries. The network card needs to support SNMP and to implement a new well-known MIB extension, *Standard TCP/IP Port Monitor MIB* that will be defined here. If the network card does not support the new MIB extension, the Standard TCP/IP Port Monitor (SPM) will query for the MIB-2 sysDescr and try to find the data in TCPMON.INI as it does currently.

## 2. Design

### Data Retrieval Design

If device is a multi-port device, SPM needs to retrieve names for all supported ports and then to ask the user to choose the port by name. Once the user chooses the port, SPM will query the printer about data specific for the port.

If the network device is a single-port device, SPM is able to get all the data without user interaction.

Based on the data retrieved SPM creates the port and if an IEEE1284 Device ID is present will try to automatically install the correct driver.

### Data Structure

Data in the Standard TCP/IP Port Monitor (SPM) MIB will be structured in a table of ports. Each port entry will have data indexed by the port. A PortTable entry is designed to mimic a set of parameters in TCPMON.INI. Each entry will define the default parameters for one port in the network print device.

Here is a definition of SPM MIB using Abstract Syntax Notation One (ASN.1):

```
SPM-MIB DEFINITIONS ::= BEGIN

IMPORTS
MODULE-IDENTITY, OBJECT-TYPE, mib-2 FROM SNMPv2-SMI
TEXTUAL-CONVENTION FROM SNMPv2-TC;
```

```

standardTcpPortMon MODULE-IDENTITY
  LAST-UPDATED ""
  ORGANIZATION "Microsoft Corp"
  CONTACT-INFO "prninfo@microsoft.com"
  DESCRIPTION ""

standardTcpPortMon OBJECT IDENTIFIER ::= { ???? ?? }

spmNumberOfPorts OBJECT-TYPE
  SYNTAX      INTEGER
  MAX-ACCESS  read-only
  STATUS      current
  DESCRIPTION "Number of ports supported by the network card.
Optional, default value is 1"
  ::= { standardTcpPortMon 1 }

spmPortTable OBJECT-TYPE
  SYNTAX      SEQUENCE OF spmPortEntry
  MAX-ACCESS  not-accessible
  STATUS      current
  DESCRIPTION "A table of ports supported by the network card"
  ::= { standardTcpPrint 2 }

spmPortEntryType ::= SEQUENCE
{
    spmPortIndex          INTEGER,
    spmPortName           OCTET STRING,
    spmProtocol,          spmProtocolType,
    spmTcpPortNumber      INTEGER (0..655365),
    spmSnmStatusEnabled   INTEGER (0 | 1),
    spmSnmCommunityName   OCTET STRING,
    spmHostResourceDeviceIndex  INTEGER,
    spmLprQueueName       OCTET STRING,
    spmLprByteCountEnabled  INTEGER (0 | 1),
    spmIEEE1284Id         OCTET STRING
}

spmPortEntry OBJECT-TYPE
  SYNTAX      spmPortEntryType
  MAX-ACCESS  not-accessible
  STATUS      current
  DESCRIPTION "Attributes of network printer port"
  INDEX { spmPortIndex }
  ::= { spmPortTable 1 }

spmPortIndex OBJECT-TYPE
  SYNTAX      INTEGER
  MAX-ACCESS  read-only
  STATUS      current
  DESCRIPTION "A unique sequential value used by the network
device to identify this output port."
  ::= { spmPortEntry 1 }

spmPortName OBJECT-TYPE
  SYNTAX      OCTET STRING

```

```

MAX-ACCESS read-only
STATUS current
DESCRIPTION "User friendly name of the port. Helps user to
choose the port on a multi-port device."
 ::= { spmPortEntry 2 }

spmProtocolType ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION "Protocol enumeration"
SYNTAX INTEGER {RAW (1), LPR (2)}

spmProtocol OBJECT-TYPE
SYNTAX spmProtocolType
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Protocol identifier"
 ::= { spmPortEntry 3 }

spmTcpPortNumber OBJECT-TYPE
SYNTAX INTEGER (0..655365)
MAX-ACCESS read-only
STATUS current
DESCRIPTION "TCP port number. Specific to RAW protocol. Ignored
for LPR protocol."
 ::= { spmPortEntry 4 }

spmSnmpStatusEnabled OBJECT-TYPE
SYNTAX INTEGER (0 | 1)
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Enables (1)/disables (0) queries for the printer
status using SNMP."
 ::= { spmPortEntry 5 }

spmSnmpCommunityName OBJECT-TYPE
SYNTAX OCTET STRING
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Community name that SPM will use to query the
printer status using SNMP. Ignored if spmSnmpStatusEnabled is '0'. If
omitted, default value is 'public'"
 ::= { spmPortEntry 6 }

spmHostResourceDeviceIndex OBJECT-TYPE
SYNTAX INTEGER
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Device Index defined in Host Resource MIB (RFC
2790). Ignored if spmSnmpStatusEnabled is '0'. If omitted, default
value is 1"
 ::= { spmPortEntry 7 }

spmLprQueueName OBJECT-TYPE
SYNTAX OCTET STRING
MAX-ACCESS read-only
STATUS current

```

```

        DESCRIPTION "Specifies the queue name for LPR mode. Ignored if
protocol is not 'LPR'. If omitted, default value is 'LPR'"
        ::= { spmPortEntry 8 }

spmLprByteCountEnabled OBJECT-TYPE
    SYNTAX INTEGER (0 | 1)
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION "Enables(1)/disables(0) byte counting in LPR mode.
Ignored if spmProtocol is not 'LPR'."
    ::= { spmPortEntry 9 }

spmIEEE1284Id OBJECT-TYPE
    SYNTAX OCTET STRING
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION "Contains the 1284 string that the SPM will use to
calculate PnP Id and to install the printer driver automatically. If
omitted, SPM won't auto-discover the printer driver and it will ask the
user to select the driver during printer installation."
    ::= { spmPortEntry 10 }

END

```

### **Place for Standard TCP/IP Port Monitor MIB**

**TBD: Where is a good place to store these data? Printer MIB? Host Resource MIB??**